Poster Booklet

WHO-FIC Network Annual Meeting
22-27 October

2018

WHO ID	Topic
101-109	Committees & Reference Groups
201-219	WHO Collaborating Centres
301-315	ICD-11
401-410	ICD-10
501-527	ICF
601-612	ICHI
701	Other

Committees & Reference Groups

101-109

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Report from the WHO-FIC Network Advisory Council 2018

22-27 October 2018
Seoul, Republic of Korea

ID: 101

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Abstract During the 2007 Network annual meeting, a WHO-FIC Network Advisory Council was established to accommodate the need for broader participation in the core decision-making processes of the WHO-FIC Network and, in 2013, the role of the Advisory Council was confirmed in the Network's 'Conduct of the WHO Family of International Classifications Network'. The functions of the Council are 1) to develop a Strategic Work Plan for the Network, which is presented at the annual WHO-FIC Network meeting, 2) to monitor and follow-up progress of the Strategic Work Plan, 3) to establish and revise, as needed procedures for the conduct of annual meetings of the Network, 4) to participate in planning the annual meetings, and 5) to review action items from each meeting and address new action items that arise. This poster summarizes the work of the Council and its Small Executive Group during 2017-18

Introduction

The Network WHO-FIC Advisory has two co-chairs, who are WHO-FIC Collaborating Centre (CC) Heads (currently Lynn Bracewell and Donna Pickett), elected at the Network annual meetings in odd-numbered years. Members of the Council include Heads of CCs (designated and under designation) and Co-Chairs of Network Committees and Reference Groups. Heads of WHO Classification, Terminology and Standards (CTS) CCs and representatives of relevant NGOs in official relations with the WHO are invited to participate as non-voting members, as can be those in classification development leadership positions with WHO.

In 2008, the Council established a Small Executive Group (SEG) to prepare recommendations and identify issues for discussion and decision by the Council. The SEG includes the Co-Chairs of the Council, two additional committee or reference group Co-Chairs (currently Huib Ten Napel and Jun Nakaya), a network member nominated by the WHO (currently Wansa Paoin) and WHO Headquarters staff.

Meetings during the last year

The Council convened twice during the annual WHO-FIC Network meeting in Tokyo in October 2017.

During the period November to August 2018 the Council conducted 3 telephone conferences, in Jan-18, Apr-18 and will conduct a third in Sep-2018. The Small Executive Group (SEG) met at the annual meeting in Mexico City, and subsequently held 9 telephone conferences between Nov-2017 to Aug-2018. One further teleconference is planned for Sept-2018. The focuses of these SEG and Council meetings include organisation of the work of the Network, with oversight of the Strategic Work Plans of the Network's Committees and Reference Groups, and facilitating communication between the Network and the WHO.

Meeting notes are available at:
https://sites.google.com/site/whoficcouncil/teleconferences

Conduct of the Network Paper

The Council and SEG update the paper *Conduct of the WHO Family of International Classifications*, to reflect agreed changes to the network and improvements to ways of working, available at:

http://www.who.int/classifications/network/EN_WHOFICNetworkConductPaper.pdf?ua=1

Following WHO-FIC Advisory Council approval of the network meeting redesign the Conduct paper was updated and published on the WHO website to incorporate the redesign changes and to include the Terms of Reference for the Classifications Statistics and Advisory Committee.

Aligning Network Committee and Reference Group work with the strategic directions of the WHO

The Council and SEG have been working with the WHO towards on the Strategic Framework and updated Work Plan to reflect WHO Strategic priorities, including the change in focus from ICD-10 to ICD-11 / key milestones and improved alignment of the work of the Network Committees and Reference Groups. This work is ongoing with further review and revision of the Terms of Reference of the Committees and Reference Groups.

An additional session will be introduced at the 2018 meeting between WHO and Heads of Collaborating Centres for reaffirmation of commitment to the Strategic Workplan and alignment of Collaborating Centre 4 year workplans.

Annual meeting format

It was previously agreed by the WHO-FIC Advisory Council, starting in 2017, that the annual meeting will be conducted over a period of 5.5 days (rather than 7 days).

Most of the meeting will be from Monday to Friday, with a Saturday morning session only for the Advisory Council. To accommodate the reduced length of the meeting, there will be greater focus on work that needs to be done in-session, and on reducing duplication between sessions.

ICD Revision

The Council SEG continued to provide advice to the WHO the strategic framework and work plan and emphasis on cross-cutting work to support the transition from ICD-10 to ICD-11 which is one of the strategic pillars in the framework, and handover of relevant Joint Task Force work to the network Committee and Reference Groups.

Reports from WHO

The WHO provided regular reports to the Advisory Council and SEG on:

- ICD revision process, including on work on the ICD-11-MMS (Joint Linearization for Mortality and Morbidity Statistics).

- presentations for Representatives of the Permanent Missions of Member State at WHO HQ in Geneva in May-2018 in advance of the WHA and Executive Board and launch of ICD-11 in Jun-2018.

- WHO work planned or in progress on updating ICF and further development of ICHI.

- a status tracker of designation and re-designation of WHO-FIC Collaborating Centres within the network.

- liaison with other NGOs including current and future relationships between ICD and SNOMED

- plans for the Annual meeting in the Republic of Korea in 2018.

Acknowledgements

The Council and SEG members are thanked for their valuable contributions to the Council work and acknowledge the secretariat support provided by the WHO.

Co-Chairs

The Council Co-Chairs serve a two year term and may be re-elected for one additional term. Lynn Bracewell, appointed in Oct-2014, is serving a second term. Donna Pickett was appointed in Oct-2017. Elections will be held for the co-chairs at the 2019 annual meeting.

Classification and Statistics Advisory Committee (CSAC) annual report

22-27 October 2018
Seoul, Republic of Korea

Frattura L.[1], Hargreaves J.[2], Tonel P.[3], Katte J.[4]

ID: 102

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Abstract This poster includes an outline of the purpose and strategic plan of the Classification and Statistics Advisory Committee and presents a preliminary annual report of the work of the Committee for 2018.

Introduction

From the end of the 2017 Mexico City WHO-FIC network annual meeting, the Update and Revision Committee (URC) has been replaced by the Classification and Statistics Advisory Committee (CSAC). The purpose of CSAC is to provide strategic and technical advice to WHO in keeping its Family of International Classifications up to date in line with current knowledge and relevant to the purpose for which they were designed. The functions of the CSAC include maintenance policy and maintenance work of CSAC (1).

Methods & Materials

The CSAC work is mainly conducted through the update platform for ICD-10 (until finalization of the last ICD-10 updates), the update platform for ICF, and the maintenance platform for ICD-11, which are workflow engines designed to facilitate communication within expert workgroups and ensure transparency of the processes (2,3,4). Work and communications are also carried out via e-mail, conference calls and meetings, including an annual meeting during the WHO-FIC annual meeting. Activities of CSAC are carried out according to the WHO-FIC Strategic Work Plan.

Results

ICD-10 updates 2017
At the 2017 WHO-FIC Network annual meeting held in Mexico City, the URC ratified 88 recommendations for updating the ICD-10. The 2017 updates were the last ones for ICD-10. If necessary there will be corrections for important errors, and amendments only to rules related to mortality (where they would apply for ICD-11 as well). The 2019 version of ICD-10 will be the last to be published.

ICF updates 2017
At the 2017 WHO-FIC Network annual meeting held in Mexico City, the URC ratified 24 recommendations for updating the ICF.

Annual and cumulative updates documents for ICD-10 and ICF - 2017
The CSAC continued URC work by preparing and delivering to WHO the annual and cumulative update documents for ICD-10 and the annual update documents for ICF (Figs. 1 and 2).

Figure 1 – Screenshot from the ICD-10 annual updates document - 2017

Figure 2 – Screenshot from the ICF annual updates document - 2017

Figure 3 – Screenshot from the ICD-11 maintenance platform

The updates documents are available at http://www.who.int/classifications/en/ (see: History of updates).

ICD-11 update process for 2018
The CSAC Secretariat have commenced work on updates, following the release in May 2018 of ICD-11 for planning implementation. Initially, the change proposals that are on the maintenance platform (Fig 3) are being sorted so, as required, they can be referred to the Medical and Scientific Advisory Committee or other processes before they are considered by CSAC. This is in line with agreed processes for ICD-11 updating, which will be further discussed at the Seoul meeting.

ICF update process for 2018
In April 2018, the CSAC Co-Chair for ICF participated in the 2018 FDRG mid-year meeting in Hamburg. A presentation was given on the following issues: need of major involvement of CSAC members in the ICF update process, need to optimize the ICF update proposals life cycle, need of collaborative and comprehensive ICF update proposals, examples of some 2018 comprehensive ICF update proposals. Concerning the

ICF update process, in 2018, 41 new update proposals were submitted on the update platform. After a review by IRG and FDRG members, these were discussed together with other 14 update proposals that had been held over from last year. Of all update proposals for 2018, 47 have been put to vote by CSAC members.

Conclusions

The achievements of the Committee are made possible by the generous efforts of CSAC members and relative institutions.

References

1. Conduct of the WHO Family of International Classifications Network. Annex 2: Terms of Reference of the WHO-FIC Classification and Statistics Advisory Committee (CSAC). Version of February 2018
http://www.who.int/classifications/network/EN_WHOFICNetworkConductPaper.pdf?ua=1
2. The ICD update platform
https://extranet.who.int/icdrevision/nr/login.aspx?ReturnUrl=%2Ficdrevision%2FDefault.aspx
3. The ICF update platform
https://extranet.who.int/icfrevision/nr/loginICF.aspx
4. The ICD-11 maintenance platform
https://icd.who.int/dev11/l-m/en#/

Education and Implementation Committee - Annual Report

22-27 October 2018
Seoul, Republic of Korea

ID: 103

Huib Ten Napel[1], Yukiko Yokobori[2]
and the Education and Implementation Committee members

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Abstract   The EIC aims to support the improvement of the quality of health data and the use of the WHO Family of International Classifications. The 2017-2018 EIC activities related to these objectives, and as listed in the EIC Strategic Work Plan, are reported according to their level of development.

Four main streams of our strategic work are presented in this poster: 1. WHO-FIC Implementation database/s, 2. ICD-11, 3. Education in general, and 4. Cross-cutting works with other committees and groups in the WHO-FIC.

Introduction

The Education and Implementation Committee (EIC) was created in 1999, and since then has been developing resources, tools and programs, aiming at improving the level of classification use and the quality of coded health data. In this past year, the EIC held a face-to-face meeting in Hamburg in April, 2018, and two teleconferences. EIC reviewed and restructured the EIC-Strategic Work Plan (SWP) in alignment with the WHO-FIC Network Strategic Framework and Work Plan (2017-2022). Identifying the EIC's priority issues, we discussed the WHO-FIC Implementation Database, preparative tasks for ICD-10 to ICD-11 transition, and how we should go ahead with cross-cutting work on priority tasks of the WHO-FIC Network in collaborative and effective manner. In addition, EIC had joint sessions with FDRG to discuss ICF related tasks, and at the 3rd International ICF Symposium, EIC co-chairs gave a presentation on the EIC work in terms of ICF education.

This is the summary of the EIC activities since the 2017 WHO-FIC meeting in Mexico City.

Meanwhile, the Database has been reviewed, aiming at simple and "user-friendly" database. Questionnaire is being discussed and revised to improve its clarity. The EIC is also considering the approaches to enable territories of certain countries to enter their data. The information on WHO FIC implementation is displayed and disseminated through the WHO Global Health Observatory:

http://apps.who.int/gho/data/node.whofic

EIC Strategic Work Plan

ICD-11
- Field Trials (FT)
- Transition and Implementation Package
- Reference Guide
- Training tools
- Work to be taken over from JTF

Primary Care

ICHI
- ICHI Development
- Assist with Field Trials

WHO-FIC Education
- ICF Education website
- ICF e-learning tool
- International Training and Assessment Program
- Information Products on the FIC

WHO-FIC Implementation
- WHO-FIC Implementation database (Revised Version)
- Database User guide

In 2018, Transition Guide has been developed, then discussed at the Joint Task Force meeting to get their feedback. At Hamburg meeting, past materials developed by EIC were shared to check the contents that should be incorporated into the Guidance Package. They are ongoing projects and the current status is timely shared at the EIC meeting.

Education in general

ICF e-learning tool

The tool is being translated into multiple languages. After Hamburg meeting, the list of current progress status in countries was circulated and updated. The report and updates will be shared at the Annual Meeting.

International Training and Assessment Program (ITAP)

Work on the recertification program has been led by IFHIMA. In October 2018, recertification exam for mortality coders is conducted in Korea supervised by IFHIMA, and the results will be presented at the Annual Meeting.

ICHI

ICHI is currently on the beta testing phase and is scheduled to be released in 2019. EIC is considering how ICHI related tasks could be integrated in to the EIC's SWP. The task will be conducted in collaboration with ICHI Taskforce.

Best Practice

Briefing Kit (BK)

A collection of updated documents regarding the WHO-FIC network has been created for the new Collaborating Centers.

Where to find EIC Products?

http://www.cdc.gov/nchs/icd/nacc_education_committee.htm

WHO-FIC Implementation Database

The EIC supports the development and completion of data in the WHO-FIC Implementation Database.

After the finalization of the Database for ICD and ICF in 2014, the main thrust has been to identify more Focal Points (FP) who would enter and update the data. Request letters with list of countries missing FPs were sent to ROs, and more than additional 50 FPs were identified this year. EIC co-chairs also sent a letter to WHO to clarify the usage status and purpose of the Database.

ICD-11

ICD-11 was officially released for implementation in June 2018. The EIC supports the ICD-11 FT activities and the development of the Transition and Implementation Package. At the request from WHO, cross-cutting working group is to conduct synthesis of lessons learned from development of ICD-10 materials and experience from ICD-11 FT for development of ICD-11 education materials. Also, EIC members are requested to establish liaison with ministry to give a brief of the benefits of ICD-11 toward the WHA resolution.

Family Development Committee Annual Report 2018

22-27 October 2018
Seoul, Republic of Korea

ID: 104

KOREA
WHO-FIC
NETWORK ANNUAL MEETING
2018

Lyn Hanmer[1], Andrea Martinuzzi[2], Brooke Macpherson[3]
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[2]E. Medea Scientific Institute, Italian Collaborating Centre and FDC Co-Chair
[3]Australian Institute of Health and Welfare, Australian Collaborating Centre and FDC Secretariat

Abstract The Family Development Committee (FDC) aims to develop the World Health Organization's Family of International Classifications (WHO-FIC) as an integrated and comprehensive suite of classifications. It also aims to ensure that the WHO-FIC has a logical structure so that the classifications needed for each component and setting within the health system can be identified. This poster presents a summary of FDC activities from October 2017 to October 2018.

Introduction

The Family Development Committee (FDC) was established in 1999 to ensure that the WHO-FIC has a logical structure so that health classifications needed for each health parameter and setting within the health system can be identified. The Committee assesses potential new member classifications that could fill a gap in the WHO-FIC.

During the year, the FDC met twice; in October 2017 at the Network Annual Meeting in Mexico City, Mexico, and in April 2018 at the mid-year meeting in Geneva, Switzerland. The mid-year meeting was held in conjunction with the International Classification of Health Interventions (ICHI) development team.

FDC participants at the mid-year meeting at WHO Head Office, Geneva, Switzerland 13-14 April 2018

The FDC co-chairs are Lyn Hanmer (South African Collaborating Centre) and Andrea Martinuzzi (Italian Collaborating Centre). FDC Secretariat is provided by Brooke Macpherson (Australian Collaborating Centre).

The Strategic Work Plan (SWP) for the FDC is outlined below with progress against each item summarised.

SWP 01: Assist WHO in the development of ICHI

The FDC acts as the focal point for the WHO-FIC Network for the ICHI development work and to facilitate communication and coordination, FDC and ICHI development meetings have been co-located for several years, including the 2018 mid-year meetings.

ICHI Beta 2017 was released in October 2017, along with an ICHI brochure. ICHI 2018 Beta version was released in April 2018, together with an ICHI draft Training Manual, and has been the subject of a wide variety of tests and reviews during May and June 2018. Comments are informing the development of a Beta 2 version for release in October 2018.

SWP 02: Integration of the Family

The Family Paper

The FDC has been re-drafting the 2007 WHO Family paper, which describes the WHO-FIC, principles of classification and the processes for adding, updating and maintaining classifications in the Family.

A writing group has been working to finalise the Family paper. A final draft was presented to participants at the FDC mid-year meeting, with final editorial changes made.

The following schematic representation of the WHO-FIC has also been finalised and published in the ICD-11 Reference Guide.
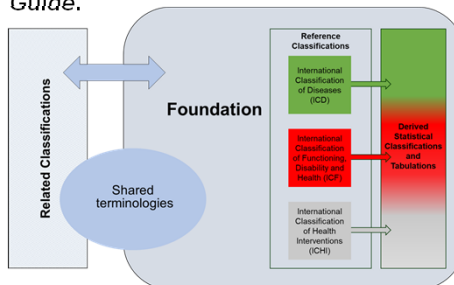
Figure 2: Final schematic representation of the WHO-FIC for the revised family paper.

Primary care

The FDC have maintained a watching brief on the primary care use case, monitoring how it is being addressed across the WHO-FIC, including links to other classifications. At the 2018 mid-year meeting, it was suggested that the FDC develop a common definition of primary care for the Network, and that the FDC could work with the EIC on this task. A small working group is being formed to work on this topic.

SWP 03: Applications of the WHO-FIC: Joint use of reference classifications

The FDC continue to canvas for examples of joint use of reference classifications. Discussion at the 2018 mid-year meeting focussed on one example, which demonstrated potential impact on DRG systems when codes from multiple classifications were identified. Further examples of joint use are still needed to inform this work.

The FDC also continues to collaborate with the ITC on the IT requirements and tools needed to support joint use. This item will be discussed further at the FDC sessions of the 2018 annual meeting.

SWP 04: WHO-FIC Support for UHC and the SDGs

The FDC has been assessing how the WHO-FIC can potentially be used to support measuring progress towards the WHO's Universal Health Coverage (UHC) initiative. Since 2016, this item has been expanded to include the Sustainable Development Goals.

SDG3, Health, contains UHC as one of its thirteen targets. UHC in this context represents an influential factor where success of UHC could propel the achievement of the other set targets and, indirectly, other SDGs.

The WHO document, *100 Core Health Indicators*, was updated in 2018. This document was the focus of a small working group at the 2018 FDC mid-year meeting. The group focussed on and discussed the metadata for a number of indicators, noting that the ICD had been referenced in a number of these, but the ICF and ICHI had not.

The working group undertook to add ICF and ICHI descriptions to the metadata of the 100 core indicators as appropriate.

This work is ongoing and is not yet complete.

SWP 05: Assess the need for additional members of the Family

The FDC created a small working group with the FDRG on the need for a personal / contextual factors classification within the WHO-FIC. This group has reviewed the contextual factors within the ICF to assess where these factors have already been covered within the WHO-FIC.

A separate poster with findings is available in this booklet and will be discussed at the FDC sessions of the 2018 annual meeting.

SWP 06: Alignment of members of the Family

The focus of this work item is on consistency of concepts between WHO-FIC reference classifications, and between WHO-FIC and other classifications. Specific resources for this work need to be identified.

Acknowledgements

INFORMATICS AND TERMINOLOGY COMMITTEE – ANNUAL REPORT

22-27 October 2018
Seoul, Republic of Korea

ID: 105

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Abstract   This poster presents the annual report of the Informatics and Terminology Committee (ITC), highlighting activities of since the last meeting in Mexico.

Introduction

The Informatics and Terminology Committee (ITC) was established in 2010, combining the Electronic Tools Committee and the Terminology Reference Group into one WHO-FIC committee.
Over the past eight years, the ITC has continued managing and supporting the design and development of software tools used inside WHO-FIC, and work related to the linkage between WHO classifications and other terminologies.

Administration

Ad-hoc meetings of the co-chairs, Cassandra Linton and Jun Nakaya as well as WHO liaison Can Celik, Robert Jakob have been held throughout the year. A mid-year teleconference plan to be held in June 2018

Classifications and Revision Platforms

 WHO headquarters and collaborating centres work to enable standardized maintenance, update and revision of WHO classifications. Work has continued on the classification update platforms and on the ICD Revision Platform:

A Coding tool, which is developed to enable allows for searching codes in the ICD-11 Mortality and Morbidity Statistics using natural language expressions. The tool has been continuously revised and enhanced.

ICD Web services and URIs,
Integration of ICD-10 and ICD-11 into other software, electronic health records, mobile apps is available via web services. Web services are hosted in the cloud, and supports multiple foundation version.
ITC members are invited to try the API and provide feedback. More information on how to access and consume the API can be found here:
https://icdaccessmanagement.who.int

URI API: URIs (Uniform Resource Identifiers) are standard identifiers for ICD entities, with a corresponding Application Program Interface (API) platform for software to access information about the classifications. Experimentations have been started on the coding API, based on the coding tool software, to enable code search also on third party software.

ICD FiT and ICHI

ICD FiT and ICHI update are reported including migration to the WHO cloud and its web services.

ICD-11 coding exercises tool (ICD-FiT) : A multi-language version of the web-based system is now available to support ICD-11 coding exercises. Formal technical testing was completed on the tool. This involved   8 raters coding from case summaries to test the capabilities of the tool.

ICHI Platform: In the past years an ICHI browser has been developed to enable access to the ICHI classification. In the 2016 ICHI meeting, a long- term work plan for the expansion of the browser to become a more comprehensive platform for the creation, revision and maintenance of ICHI is discussed. The platform will allow comments, proposals, history of modifications, three privilege levels for users, and linkage to other classifications of the family.
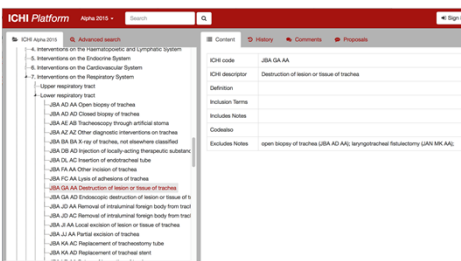
Standards

Technical standards are developed to enable the electronic exchange of WHO classifications.
During the last year, work has been carried out in the following directions:

ClaML (Classifications Markup Language): The classification markup language ClaML is the WHO recommended format to exchange classifications between developers and users. It is an ISO standard used worldwide. In 2015 the standard started to undergo revision in the ISO process. Its result will be ClaML 3.0 with an aimed date of completion in 2018. CLAML is in the process of international standardization. It passed the second ballot and moved to the next ballot in ISO. The WHO-FIC-Network is actively involved in the revision through the ITC. It will try to ensure that emerging classification needs for the exchange standard will be considered. Recent status will be reported in the Oct. meeting.

iCOS(ICD Clinical Omics Sub information model): The ICD Clinical Omics Sub information model, which enables handling of omics data including whole genome data with ICD, has received WHO recommendation toward international standardization at ISO. Two projects based on already existing international standard IS25720 in ISO TC215 WG2 collaborating with HL7 CG and CDISC BRIDGE have begun the international standardization process. They passed the first ballot in ISO.

Formal Knowledge Representation

Over the next year, ITC will continue to focus on receiving feedback on the new web services, CLAM-L, and OMICs. Activities will also focus on creation of a sub-group to consider the links to terminologies and other factors in adoption of ICD-11.
Discussion with IHTSDO around the formal knowledge representation is in continuing.

Acknowledgements

ITC wishes to acknowledge the work of the WHO HQ and collaborating centres for their contributions over the past year.

FUNCTIONING AND DISABILITY REFERENCE GROUP ANNUAL REPORT

22-27 October 2018
Seoul, Republic of Korea

ID: 106

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Abstract The role of ICF and derived instruments is crucial in all areas of the WHO FIC Classifications and is blooming. Classifying and measuring functioning is relevant for all areas of health. In 2018 this has been stated by FDRG members from all-over the world in the FDRG midyear meeting in Germany, Medical School Hamburg and during the 3rd International Symposium for ICF Education2018 and in the *m*ICF workshop 2018.

Overview- Functioning and Disability in the Family of International Classifications

The publication of ICD 11 with the additional functional entities offers FDGR members the opportunity as experts on the ICF and cross use and to be consulted on these issues. FDRG members wish to be more involved in updating also the ICD and recommended to shift attention from using ICF as a tool in research to using it as a standard for coding.

1-ICD 11: Reference Guide and ICF

With regards to the Reference Guide for the use of ICD 11, FDRG members made suggestions for corrections and clarifications related to harmonize the definitions of functioning in the ICF and ICD. Some case vignettes were prepared together with MRG to support the use of the ICD 11 including its Functioning Entities that are new in ICD

2 – ICF Updates

With regards to the continuing ICF update process on the update platform https://extranet.who.int/icfrevision/ a close collaboration with URC, now CSAC ICF is ongoing so as to include all proposals. FDRG members and other experts in ICF are invited to register and contribute with suggestions to improve existing codes and suggest new ones based on the continued use of ICF in clinical practice, research and health statistics.

With the increasing development of linking assessment tools to the ICF it will be necessary to discuss ICF-CY codes that had been identified in the process but are not to be found anymore in the current version of ICF.

FDRG since 2017 has been requesting that the ICF Practical Manual is published as Version 0.9, and the wording DRAFT is deleted from the website. As of now WHO, despite agreed to do so, is still working on this. The **ICF 2017** is on line and the differences between the previous version and the present version are listed on the WHO website.

3 - ICF Education - collaboration with EIC

The ICFe-Learning Tool is live on the website of the the ICF-Research branch website: https://www.icf-elearning.com

Versions for Danish, Dutch, Finnish, French, German, Japanese, Korean, Italian, Portuguese (Brazil & Portugal), Russian, Spanish and Swedish are in progress to be developed.

The ICF Education website and teaching repository continues to grow. It can be accessed at http://icfeducation.org

FDRG members and other ICF experts are invited to share their materials on the platform.

The website also has an online Forum to discuss questions related to the use of ICF and WHODAS .

4-ICF Global Implementation

Implementation of ICF at national level is a complex task as countries where it has to be implemented are very different. Uniform approach can not be recommended as ICF is used for different purposes and every implementation needs to be tailored taking into account local, best practices. FDRG annual zooming on ICF use however shows in 2017/2018 an increase on ICF use

Acknowledgements

*We thank the members of **FDRG (Functioning and Disability Reference Group)** for volunteering in the different working groups and the WHO Collaborating Centres and Academic Centres in supporting our work.*

5 – WHODAS 2.0, WHO DAS for children and measuring Disability & Functioning in ICD11

WHO DAS 2.0 is playing an important role in the assessment of functioning and disability and although other generic instruments for assessing health status can also be mapped to ICF, they do not clearly distinguish between measurement of symptoms, disability and subjective appraisal.

WHODAS is unique in that it covers ICF domains fully and applies to all diseases, including physical, mental and substance-use disorders.

It assesses functioning and disability in a culturally sensitive way across a standard rating scale. For this reason its use has been recommended, between other uses, also by WHO to measure Functioning Properties in the ICD 11. With implementation of ICD 11 there will be the need to have a full range of instruments able to measure functioning. One of the limitations of WHODAS 2.0 is the age range it can be applied having only evidence in people over the age of 15 (Kimber, Rehm, & Ferro, 2015) and some reports of a WHODAS Child Version being used in mental health (Scorza et al., 2013). The Functioning and Disability Reference Group is interested in these initiatives and has received the task to develop a measure that can be used in the younger population. Under the leadership of the current co-chairs of FDRG (Matilde Leonardi & Haejung Lee) an international initiative was started to develop and test a non-disease-specific functioning and disability assessment tool for children and youth that could be used in clinical, educational, social settings as well as for international epidemiological studies. The tool will be developed, tested on and validated with children with different conditions, worldwide. Research groups interested in participating in this initiative or having already done work related to this are welcome to contact the Co-Chairs of the Functioning and Disability Reference Group.

References:
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Scorza, P., Stevenson, A., Canino, G., Mushashi, C., Kanyanganzi, F., Munyanah, M., & Betancourt, T. (2013). Validation of the "World Health Organization Disability Assessment Schedule for children, WHODAS-Child" in Rwanda. PloS One, 8(3), e57725. https://doi.org/10.1371/journal.pone.0057725

Morbidity Reference Group Annual Report

Authors: W.Ghali, O.Steinum, K.Mabon
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22-27 October 2018
Seoul, Republic of Korea

ID: 107

Abstract   This poster presents an annual report of the work of the Morbidity Reference Group, highlighting activities undertaken by this committee since it was re-established as a working group following the Tokyo annual meeting.

Introduction

The Morbidity Reference Group (MbRG) is a working group that was resurrected in 2016 following the Tokyo WHO annual meeting.

This committee supports WHO and WHO-FIC Network by providing input and advice for development and use of the ICD-11 for morbidity purposes, to support the collection of internationally comparable morbidity data.

Methods & Materials

The MbRG's work is conducted via email and in person meetings. Since its resurrection, there has been three in person meetings.

The first working meeting was held in Kvänum, Sweden, March 19-21, 2017; the second working meeting was held during the annual WHO meeting in Mexico City, October 16-21, 2017; and, the third, most recent, working meeting was held in Banff, Alberta, Canada, April 9-10, 2018.

Bjertop Castle, Kvanum, Sweden

Results

Following the Tokyo annual meeting, the priority work established for the MbRG, to complete prior to release of the implementation version of ICD-11 included:
1. ICD-11 Reference Guide (formerly "Volume 2")

2. Post-coordination

3. Review of the X Chapter (extension codes)

4. Review of Chapter 24 (Factors influencing health status or contact with health services)

5. Transition planning

The priority work was divided among designated members and their findings and recommendations were shared with all MbRG members via email or at the in person meetings.

At the Banff, Alberta in person meeting, several decisions were reached regarding the coding rules on various topics. These coding rules were added to the ICD-11 Reference Guide.

The topics requiring coding rules included:
1. Post-coordination - when and when not to post-coordinate

2. Main condition - multiple conditions as reason for admission

3. Ruled out - ruled out (Q-codes) from the factors chapter

4. Personal history of and family history of

5. Sequelae or late effect of

6. Quality and Safety – 3 part harm model

7. Post-procedural conditions

8. Sepsis

Conclusions

Following the last in person meeting, the working group is confident that the priorities of work set out for this group were achieved and will support the release of the implementation version of ICD-11.

Banff, Alberta

Acknowledgements or Notes

The co-chairs wish to acknowledge the work of the MbRG members and collaborating centres for their contributions over the past year.

KOREA
WHO-FIC
NETWORK ANNUAL MEETING
2018

Mortality Reference Group
Annual Report, 2017-2018

22-27 October 2018
Seoul, Republic of Korea

ID: 108

Authors: Kaori Nakayama[1], Donna L Hoyert[2], Francesco Grippo[3]
(1) ICD Office, MHLW, Japan (2) NCHS, USA (3) ISTAT, Italy

Abstract   The MRG is a component of the International Classification of Diseases (ICD) updating process. Comprised of members from Collaborating Centres and regional offices, the MRG reviews problems faced in the application of ICD to mortality. In its 20th year, the MRG focused on ensuring the stability of mortality rules in the transition from ICD-10 to ICD-11, while taking into consideration future updates and making the most of the enhancements made in the ICD-11 revision.

Introduction

This is the 20th annual report of the Mortality Reference Group (MRG), established at the 1997 meeting of the Centre Heads as part of an updating mechanism for ICD-10.

While countries continue to use ICD-10 in their daily coding and production of mortality statistics, ICD-11 was released in June 2018. Due to its limited resources, the MRG has shifted its focus to ICD-11 with an understanding that deliberation about ICD-11 will give advise to issues found in implementation of ICD-10 as well.

This report describes the background of the MRG and its activities in the 20th year.

Basis for the MRG

Provisions for the MRG are described in the conduct paper of the WHO-FIC network(http://www.who.int/classifications/network/EN_WHOFICNetworkConductPaper.pdf?ua=1)* where its objective is set to improve international comparability of mortality data by establishing standardized application of the ICD. The MRG was one of the first groups WHO – working with the Centre Heads - established for updating ICD-10 and continues its role with ICD-11. The MRG discusses issues raised in the Mortality Forum or those referred from other sources including the Centre Heads and WHO. The MRG can make decisions regarding the application and interpretation of ICD to mortality and submit a subset as recommendations to the CSAC for a vote on ICD updates and changes.

* See also WHO long-term strategy document (WHO/HST/ICD/ C/97.39) and the Centre Heads' Report for 1997 (WHO/HST/ICD/C/97.65).

ICD-10 to ICD-11: What Changed in the Reference Guide

In 2017-2018, a transition period between ICD-10 and ICD-11, one of the major activities of the MRG was to review the mortality coding rules in the ICD-11 Reference Guide. In the review, special focus was given to keeping the rules stable, using plainer and formatted text, and making the most of the new features of ICD-11.

Ensure stability
Mortality statistics and the ICD have developed over a hundred years, and it is important to ensure this statistical stability over time. In addition, making drastic rule changes at the same time as a major revision in the classification structure will make the analysis of the shift in statistics extremely difficult. Therefore, the mortality coding rules and process (Steps SP1-SP8 and M1-M4) were basically retained in the new Reference Guide. Each code or code range specified in the instruction will be replaced to reflect the ICD-11 structure, unless a change in ICD-11 makes it necessary to change a rule. For instance, do you continue to apply the same rule when conditions move to different chapters? In such a case, priority was given to applying the same rule to the conditions if possible.

MRG meeting locations, 1998-2018

Budapest, Hungary Mar 2018

Seoul, South Korea Oct 2018

Modifying the code range according to the new structure will be considered in future updates of the Reference Guide.

Easy understanding
The instructions have been refined to address questions in the many years of updating. This made them more mature and sophisticated but at times difficult and complicated for those new to ICD. ICD-11 reduced repetitive instructions and put steps into a template format. In addition, an initial frequency test for each rule was conducted that will lead to reducing very complicated rules that do not impact much on the resulting statistics. These initiatives may also promote WHO's priority of expanding country coverage of internationally comparable mortality statistics.

Capturing further information
The single underlying cause of death is the focus of mortality statistics and will continue to be so in ICD-11. However, postcoordination, a new feature of ICD-11, allows the capture of additional details available from the death certificate in a more standardised way. In this context, capturing further details on maternal mortality, substances or other important information for public health, and multiple cause analysis and multi-morbid situations of the elderly are challenging topics that deserve further deliberation and discussion in the MRG.

Acknowledgements

The MRG dealt with about a thousand issues related to updating and clarifying ICD-10 as it applies to mortality classification and coding, and forwarded 428 decisions to the URC (forerunner to the CSAC). Summary of decisions made for ICD-10 was reported in the WHO-FIC network poster of 2017 (C106). Such extensive work of the MRG will continue in discussions on ICD-11.

This could not be achieved without dedicated contributions from the MRG members and without support from the Collaborating Centres kindly hosting the meetings. The MRG especially appreciates the Hungarian Central Statistical Office and Statistics Korea for hosting the MRG and table group meetings in 2018.

2018 Mid-year Meetings

The MRG met in Budapest, Hungary on March 21-22. The MRG discussed progress in the development of ICD-11 with particular focus on the Reference Guide and a number of conditions that are handled much differently in ICD-11 than ICD-10. The MRG revisited many other existing issues to assess if they would still be a concern in ICD-11.

A smaller table group of the MRG met on March 23-24 to work through issues concerning the decision tables where MRG decisions left details open. The table group also discussed the impact of ICD-11 on the existing issues, as well as the transition of tables to ICD-11 and the MRG's role in that effort.

Activities of
WHO-FIC Asia-Pacific Network

22-27 October 2018
Seoul, Republic of Korea

ID: 109

Wansa Paoin[1], Maliwan Yuenyongsuwan[2], Yukiko Yokobori[3],
Sukil Kim[4], Hiroyoshi Endo[5], Hiroyuki Suenaga[6]

[1] Thai CC, [2] Thai CC, [3] Japan CC, [4] Korean CC, [5] Japan CC , [6] Japan CC

Abstract   The WHO-FIC Asia-Pacific Network (APN) was formed in 2006 with the objective of promoting ICD implementation in the Asia-Pacific region. There have been ten network meetings so far, with the most recent one being held in Sidney, Australia, in June 2018. The poster reports on the network's activities that took place after the WHO-FIC Network Meeting in Mexico City in October 2017. Since the ICD-10 APN simplified version has integrated as the Startup Index, APN is now moving on to the next phase. This includes the step toward introducing ICD in Lao PDR, the development of mobile application tool, and the key activities that are applicable in supporting ICD implementation to make it more global.

Introduction

Established in Tunis, Tunisia, in 2006, to promote ICD implementation in the Asia-Pacific, WHO-FIC Asia-Pacific Network (APN) has organized ten annual meetings and five working meetings so far. In addition, APN sessions have been held since 2014, taking the opportunity of the WHO-FIC Annual meeting. This is the summary of the APN activities since the 2017 WHO-FIC meeting in Mexico City.

	Year	Venue	Participant
1st	2006	Tunis (Tunisia)	11 countries
2nd	2007	Kyoto (Japan)	13 countries
3rd	2008	Delhi (India)	10 countries
4th	2009	Hamamatsu (Japan)	9 countries
5th	2010	Tokyo (Japan)	6 countries
6th	2013	Bangkok (Thailand)	9 countries
7th	2015	Siem Reap (Cambodia)	9 countries
8th	2016	Bangkok (Thailand)	10 countries
9th	2017	Kuala Lumpur (Malaysia)	16 countries
10th	2018	Sydney (Australia)	7 countries

APN session in Mexico City

On 17th October, 2017, the WHO-FIC APN meeting was held in Mexico City, as a official session of the WHO-FIC Network Annual Meeting. Approximately 30 people from 8 countries and officers from WHO Headquarters and Regional Offices participated in this meeting, where the progress status of the Startup Index (integrated version of the ICD-10 APN simplified version and WHO Simplified List of Code of Deaths), the activities in Cambodia and Lao PDR, mobile application of ICD-10 simplified version, and future plan of the APN were shared and discussed.

Ongoing Activities of APN

- Implementation — - Workshop
  - Training
- Tool development — - Startup Index
  - Mobile application
- Implementation Plan — - Work with countries, WHO and ROs
- Needs survey — - Work with ROs
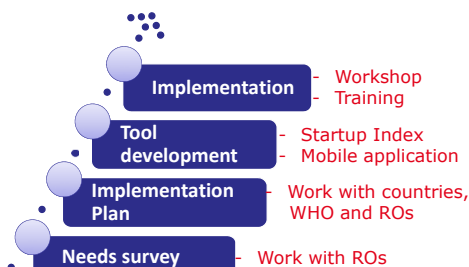
The 10th APN Meeting

On 4th and 5th June, 2018, the 10th APN Meeting was held in Sydney, Australia, hosted by National Centre for Classification in Health (NCCH), The University of Sydney with around 30 participants from 7 countries. Progress with the family of international classifications (FIC) was presented, and the APN related issues including the topics remarked below and current status in Vietnam were shared. We discussed the future plan and direction of APN, and planned to explore a framework in collaboration with SEARO and WPRO to invite more involvement of countries to the APN, so as to promote further implementation of FIC.

10th APN meeting
(June 2018, Sydney, Australia)

In conjunction with the APN meeting, Health Classifications Update Workshop was held supported by NCCH, where classification work currently done in Australia was presented.

Startup Index
(ICD-10 APN Simplified Version)

The development of the ICD-10 APN Simplified Version was started in 2014. The alpha version for primary care was completed in 2015. Through the several version, the ICD-10-SMoL codes were integrated into the ICD-10 APN Simplified Version in 2016, which became a WHO product with a new title, ICD-10 Startup Index, and will be available on the WHO website.

Follow-up activities in Cambodia

In 2017, supported by the Thai CC, training was provided to physicians and coders and achieved good results.

MOH Cambodia is planning to conduct country wide implementation of New Discharge Summary, New Death Certificate, and Startup Index coding for inpatient and death cases at all 105 hospitals in 2018. It is ongoing project and the current status is timely shared at the APN meeting.

Step toward introducing ICD in Lao PDR

ICD-10 StI translation to Lao was completed with support of Thai Health Coding Center. In 2017, implementation plan was drawn up among WPRO, Lao MOH, JICA, APN, and Lao medical schools as follows.

First Phase (2017-2018)	
1	Standardized death certificates and discharge summaries
2	Train physicians and coders
3	Promote ICD implementation in the central hospital
4	Conduct mortality and morbidity data analysis
Second phase (2019)	
Expand implementation to all 20 hospitals in the country	

Guideline of ICD Implementation

Based on the feedback from the implementation activities in Cambodia and Lao PDR, "Guideline of ICD Implementation in a country" was developed by Thai CC. It is currently used in Cambodia and for introducing the one in Lao PDR, and is expected to be used in other countries as well.

Mobile Application

The mobile application of ICD-10 StI was developed by Dr. Ming Yu. Current status was presented at the Sydney meeting.

Android version
Already three years in operation, is stable, and all data have been updated.
iOS version
Completed but an application made to Apple Store has been turned down on the ground that the app is too simple.
HL5 version
Developed and can be used independently of the type of operating systems for use on the Internet browser.

APN website

The Korean CC took over the host of the APN website that had been hosted by JHA. The data was successfully transferred in May 2018, and new site will be available in due course.

Collaborating Centres

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210	Annual Report from the Mexican WHO-FIC Collaborating Centre CEMECE	Yañez, M.; Alanis, R.; Vazquez, B.; Pérez, M.; Andrade, C. et al.
211	Annual report 2017-2018 WHO-FIC CC in the Netherlands	C.H. van Gool, L.M. Harmans, H. ten Napel
212	WHO-FIC Collaborating Centre for North America	Donna Pickett, Keith Denny, Patricia Wood
213	Annual Report from the Nordic WHO-FIC Collaborating Centre	Lars Berg
214	Annual Report from the WHO-FIC Collaborating Centre in Korea	Jongduk Kim, Eunkyung Seo, Youngcheol Jung, Heejung Jung et. al.
215	Russian WHO-FIC Collaborating Centre Annual Report 2017-2018	S.Cherkasov, D.Meshkov, A.Shoshmin, Y. Besstrashnova et.al.
216	Barcelona WHO-FIC CC Annual Report 2018	Maria-Dolors Estrada, Mireia Espallargues, Jaume Canela-Soler, Toni Dedeu
217	WHO-FIC Collaborating Centre in South Africa: 2018 Report	Lyn Hanmer, Debbie Bradshaw, Stefanus Snyman, Soraya Maart
218	UK WHO-FIC Collaborating Centre Annual Report 2018	Danielle A Southern, Cathy A Eastwood, Hude Quan, William A Ghali

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219	WHO Collaborating Centre for Classification, Terminologies and Standards at the University of Calgary	Danielle A Southern, Cathy A Eastwood, Hude Quan, William A Ghali
220	Applying Semantic Technologies to WHO Classifications (WHO CTS Collaborating Centre at Stanford)	Samson W. Tu, Csongor Nyulas, Tania Tudorache, Mark A. Musen

ANNUAL REPORT FROM THE ARGENTINE WHO-FIC COLLABORATING CENTRE (CACE) 2017/2018

22-27 October 2018
Seoul, Republic of Korea

ID: 201

Authors:
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Argentine Centre for Classification of Diseases (CACE),
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Abstract   The Argentine Centre for Classification of Diseases (CACE) was designated in 2015 as WHO Collaborating Centre on the Family of International Classifications. CACE continues promoting the use of the Family of International Classifications in Argentina and in the Latin American Region, with the support and coordination of the Latin American and Caribbean Network for Strengthening Health Information System (RELACSIS) and PAHO/WHO. In addition, CACE was involved in field tests and collaborative translation of ICD 11. This poster briefly describes the main activities developed by the Centre during 2017/2018.

Introduction

Since its designation as Collaborating Centre in March 2015, DEIS and CACE have developed multiple activities aimed at promoting the use of the Family of International Classifications both in Argentina and in Latin American countries. A number of projects have been implemented within the framework of RELACSIS and in collaboration with PAHO/WHO, involving training activities, participation in the implementation processes of the ICD-11, active cooperation with other reference centres, etc. This poster describes the main activities.

Activities

Activities related with ICD-11:

Participation in ICD-11 field test Phase 3: during the month of December 2017, 5 coders worked in this phase of the field tests.

Participation in "Workshop on the implementation of ICD-11 (PAHO/WHO, Bogotá, Colombia)": CACE, in coordination with the WHO Family of International Classifications Collaborating Centres of the Region, and representatives of other agencies, participated in the identification of needs and requirements for the transition to ICD-11 in the Region.

Training and support to Colombia for starting ICD 11 field tests: to facilitate the incorporation of Colombia into the ICD-11 field tests, CACE provided support and advice to this country, through virtual training on the use of the different tools and in the resolution of practical cases.

Collaborative translation of ICD-11 into Spanish: Under the coordination of PAHO/WHO, CACE continued with its active collaboration in the translation of certain chapters of ICD-11 into Spanish, with other centres of the Region.

Participation in the "Workshop on translation of ICD-11 into Spanish" (PAHO/WHO, Bogotá, Colombia) and in all virtual meetings of RELACSIS Working Group 8: ICD-11.

Activities related to ICD 10:

Collaboration with RELACSIS Working Group 2
The virtual course for coders was redesigned. The new proposal includes a progressive training model, with three levels: a Basic Course, and an Intermediate and an Advanced Morbidity and Mortality Courses. ICD-10 updates 2016-2018 were incorporated. Also, the Practice Guidelines and the Activities to be carried out in the Virtual Classroom were modified and updated.

Updating and Training Course for facilitators and instructors on ICD-10, Oriental Republic of Uruguay In 2017, CACE in coordination with CEMECE, offered a course with the purpose of improving the quality of coding in Morbidity and Mortality statistics. It also aimed to strengthen the proper registration in death certificates, information systems and data quality. 35 people working in the area of Medical Records and Health Statistics throughout the country were trained. These participants will act as facilitators in the institutions where they work. During 2018, CACE will collaborate in training courses for ICD-10 coding instructors.

Training on ICD-10 in Argentina:
- "Workshop for the proper filling of the death certificate" , province of Misiones. 30 professionals from medical and health statistics areas attended this workshop.
- "Training workshop on ICD-10 coding" , province of Salta.
- "Workshop on hospital discharge statistics", province of Misiones. There were 40 participants from medical and health statistics hospital areas.
- Technical assistance for the development of a "Training course on mortality coding", City of Buenos Aires.

Activities related to ICF:

Virtual course for the application of the ICF: CACE designed the course and prepared the material that was sent for review to the Collaborating Centre of Mexico and the Reference Centre of Colombia. This course will be held during 2018, through RELACSIS platform.

Counseling on ICF framework to the area of disability of OPS-Bolivia.

Dictation of the course "Training of national instructors in the use of the ICF" in Peru.

Conferences about ICF for the Ministry of Health of Peru and in the International Seminar "Advances in the implementation of the ICF in Latin America and the Caribbean" held in Chile. Participation in the conference "The new approaches to disability. The irruption of the ICF, from the medical model to the universal model " organized by the Argentine Federation of Uncommon Diseases.

Other activities:

Census of ICD coders: a national census was carried out, to obtain information about demographic characteristics, work status, and the degree of training of mortality and morbidity coders.

"Ibero-American Discussion Forum on the WHO-FCI, Dr. Roberto Becker": CACE and CEMECE proposed modifications to the functioning of the Forum. CACE also integrates the Collegiate group of the Forum, which is in charge of preparing answers to received consultations.

Quality of vital statistics: CACE participates actively in various research projects related with the quality of cause of death registration.

Meetings and Conferences

Participation in the WHO-FIC Annual Meeting 2017 (Mexico): CACE participated in the meeting as a Collaborating Centre and presented the Virtual course for the application of the ICF in the Region.

Participation in the VIII meeting of RELACSIS (Managua, Nicaragua).

Acknowledgements

CACE wishes to thank all staff members of RELACSIS, PAHO, and PAHO-Arg for their continued assistance and support to achieve its activities.

www.deis.msal.gov.ar

Australian Collaborating Centre Annual Report 2018

Authors: Jenny Hargreaves[1], James Katte[2], Brooke Macpherson[2]
[1]Australian Institute of Health and Welfare and Australian Collaborating Centre, Head
[2]Australian Institute of Health and Welfare and Australian Collaborating Centre, Secretariat

Abstract   The Australian Institute of Health and Welfare has hosted the WHO-FIC Australian Collaborating Centre since 1991. The membership of the ACC is Australian and New Zealand organisations that have an interest and experience in working with classifications. This poster summarises the activities of the ACC that occurred between October 2017 and October 2018.

Introduction

Australian National, Australian Aboriginal, Torres Strait Islander and New Zealand flags.

The Australian Institute of Health and Welfare in Canberra, Australia, has hosted the Australian Collaborating Centre (ACC) since April 1991. This year the ACC was successfully redesignated until 2022.

The ACC is a collaboration of Australian and New Zealand experts and organisations with an interest in health classifications.

The ACC meets biannually to disseminate information about WHO-FIC and other health-related classifications, and the related work of WHO and the Network to its members.

Jenny Hargreaves, Head of the Australian Collaborating Centre, addresses members at the June 2018 meeting in Sydney.

The Head of the Centre is Jenny Hargreaves, Senior Executive of the Data Governance Group at the AIHW.

This annual report summarises the activities of the ACC and its members during the period October 2017 to September 2018.

The report incorporates information on specific activities of the ACC work plan including that of its member organisations and experts relevant to the ACC Terms of Reference, as agreed with WHO.

ICD

Mortality

The Australian Bureau of Statistics (ABS) has taken an active role in the ICD-11 finalisation through membership of the ICD-11 Joint Task Force.

The ABS and the Queensland University of Technology (QUT) jointly support the Australasian Vital Statistics Interest Group. ABS and QUT have continued their active involvement in the work of the Brisbane Accord Group (BAG), supporting improvements in health information systems in the Pacific.

In 2017, this involved participation in a workshop relating to death certification for Pacific Islands, held in Nadi, Fiji. This workshop was run in association with the Secretariat for the Pacific Community and WHO. Following this workshop, a training course in mortality coding and use of Iris was conducted in Suva for the Fiji Ministry of Health.

The ABS also worked with BAG partners and the Australian Department of Foreign Affairs and Trade to assess CRVS systems in Tuvalu and Nauru and recommend tangible actions to strengthen these systems around key use cases.

The ABS assisted Data for Health in the Philippines with a review of the mortality information system and the successful implementation of Iris for auto-coding.

QUT continues to moderate the Mortality Forum with colleagues on the MRG.

Morbidity

The Australian Consortium for Classification Development (ACCD) is in the process of development of, education for, and preparation for implementation of the Eleventh Edition of the Australian Modification of ICD-10 for admitted patient activity from 1 July 2019.

ICD-11

ACC members continue to contribute to WHO's work towards the preparation for implementation of ICD-11 (post the release of ICD-11 on 18 June 2018) including participation in the ICD-11 MMS Joint Task Force (with James Harrison contributing as co-chair), the Morbidity Reference Group, and the Mortality Reference Group. ACCD continues to contribute work to WHO on the education materials and transition planning. The ACC was involved in coordinating Phase 3 of WHO's ICD-11 morbidity field testing in Australia.

Contributions to the Network

The Head of the ACC served as Co-Chair of the Classification and Statistics Advisory Committee. The ACC Secretariat also served as Secretariat of the Family Development Committee. Western Sydney University has contributed to the development of the 'Whitepaper in Mapping', developed by the ITC.

Other members of the ACC also continue to be actively involved in the Network Committee and Reference Groups and in the advisory groups for the WHO-FIC.

ICHI

The ACC continues to play a leading role in the development of the International Classification of Health Interventions (ICHI). ICHI Beta 2017 was released in October 2017, along with an ICHI promotional brochure. An ICHI 2018 Beta version was released in April 2018, together with an ICHI draft Training Manual, and has been the subject of a wide variety of tests and reviews during May and June 2018. Comments are informing the development of a Beta 2 version for release in October 2018.

ICF

ACC members have continued to promote the use of ICF nationally and internationally. This has included presenting ICF-related lectures and workshops in India (at the request of WHO South East Asian Regional Office), the Solomon Islands (commissioned by the WHO Western Pacific Regional Office), Taiwan (as an invited speaker at the national ICF Network), and St Kitts and Nevis (at the invitation of the Caribbean CBR Network).

ACC members have contributed to the FDRG work program, including through reviewing ICF update proposals, providing comments on ICF categories in ICD-11 and the associated reference guide content, and other tasks.

Acknowledgements

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Annual Report from the WHO-FIC Collaborating Centre in China, 2017-2018

22-27 October 2018
Seoul, Republic of Korea

ID: 203

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Abstract Peking Union Medical College Hospital (PUMCH) has been dedicated to implementing and promoting WHO family of international classifications (WHO-FIC) since its first designation as the Collaborating Centre for the WHO-FIC in China in 1981. This poster presents the annual report of the ICD branch of WHO-FIC Collaborating Centre in China, highlighting activities related to the implementation, education, improvement and development of ICD in China.

Introduction

Peking Union Medical College Hospital (PUMCH) has been designated as the Collaborating Centre for the WHO-FIC in China since 1981. Collaborated with China Rehabilitation Research Centre and Centre for International Classification Research on Traditional Medicine Clinical Conditions and Service Evaluation, the centre take responsibility for the implementation and promotion of WHO-FIC in China.

Nowadays, there are over 10 000 hospitals all over the country report morbidity data using ICD-10. The National Centre for Health Statistics and Information has collected morbidity data of 550 million cases using ICD, and the number is increasing by 100 million per year. Besides, more than 6 million deaths are reported annually using ICD-10.

Implementation and Education

In cooperation with the Institution of Medical Quality Management Commission of Chinese Hospital Association, the centre has conducted 4 national training courses on ICD coding in Wuhan, Beijing and Shenyang since 2017, and supported 22 provincial training programs and academic seminars, involving over 8000 attendees.

In November to December in 2017, the centre conducted training courses for resident doctors from ICU and emergency department on how to fill in death certificate and courses for coders on coding guidance of the chain of events leading to death and underlying cause of death, in order to improve the quality of mortality reporting and statistics.

The centre conducted a training course on ICD-10 mortality reporting to coders and CDC staff on Jun 23-24, 2018.

Chart 1: Training course on ICD-10 Mortality Reporting on Jun 23-24, 2018

Quality Improvement

Granted by Bureau of Medical Administration, a maintenance mechanism for ICD-10 Chinese clinical modification is established, and unification of the codes for diseases all over the country is under way.
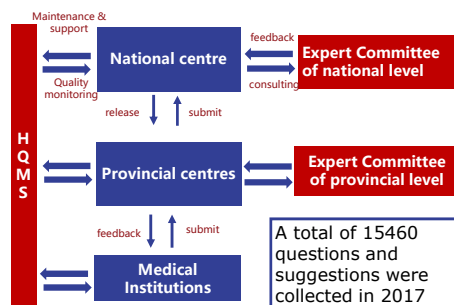
Chart 2. Workflow of update and revision of ICD-10 Chinese clinical modification.

To provide health data of higher quality, and meet the needs for clinical researches and medical payment reform, the centre has established a network covering all the hospitals in China, with the support by the National Health Commission of China. The network is dedicated to improve the implementation quality of WHO-FIC, especially for ICD.

The centre organized coding verification on national and provincial level, covering 290 hospitals and 24 709 cases from 2017 till now.

To improve the quality of ICD implementation in mortality reporting, the centre helped CDC conduct annual mortality reporting verification from October to November 2017.

ICD-11 Related Activities

Ten translators, 8 reference translators and 2 general translators, are involved in the initial translation of ICD-11. Clinicians are recruited to check (approve or revise) the translations currently in Stage2, to guarantee the quality of ICD-11 Chinese version. The center is about to release ICD-11 Chinese version at the end of this October.

Mapping between ICD-10 Chinese clinical modification and ICD-11 has been started since July 2018.

Meanwhile, the centre reported the advantages of ICD-11 and submitted a proposal on ICD-11 implementation, including release of ICD-11 Chinese version and mapping tables and testing ICD-11 in morbidity reporting to the Bureau of Medical Administration and State Medical Insurance Administration, who showed great interest and expectation in implementing ICD-11 in China in the near future.

Collaborating Activities

The center is supported by China Rehabilitation Research Centre on ICF, and Centre for International Classification Research on Traditional Medicine Clinical Conditions and Service Evaluation on ICTM. Members of the center meet face-to-face annually to brief the progress and discuss work plans for the next year.

Chart 3. Face-to-face Meeting of WHO-FIC CC members in China in 2017.

Dr Robert Jakob and Dr Nenad Kostanjsek were invited to Beijing to review the progress of work and coordination in the last phase of ICD-11 on Apr 28, 2018 .

Chart 4. Dr Robert Jakob and Dr Nenad Kostanjsek visited the centre on Apr 28, 2018

Acknowledgements or Notes

Main activities of the CECUCE in the period 2017-2018

22-27 October 2018
Seoul, Republic of Korea

ID: 204

Authors: Bess S., Martínez MA., Alonso I., Pérez ME., Alonso I.
Cuban Center for Classification of Diseases, Cuba

Abstract The main activities developed by the Cuban Center for Classification of Diseases (CECUCE) during the years 2017 and 2018 are displayed. Among them they are: Participation in the process of translation of ICD-11, participation in virtual meetings on progress of the ICD-11, as well as participation in the pilot tests, participation in the meeting of WHO Collaborating Centers in the "Third International Health Convention Cuba Health 2018", training in ICD-10, among others.

Introduction

The Cuban Center for Classification of Diseases (CECUCE) was created in 1987, steadily carrying out training, research, publications and national and international consultants for promotion and proper use of the Family International Classifications (FIC). In October 2015 he was appointed as WHO/PAHO Collaborating Centre. In coordination with PAHO/WHO in the period 2017-2018 has participated in several projects for strengthening health information systems, both nationally and internationally and support knowledge and correct use of the International Family of Classifications in correspondence with the established terms of reference for the Collaborating Centre.The most important activities this year are listed below.

Participation in meetings

- Participation in virtual meetings held by PAHO / WHO for the coordination of work in solidarity translation, in the RELACSIS working groups and in the planning of the ICD-11 pilot studies. (2017-2018).
- Participation in the workshop "Translation into Spanish of the International Classification of Diseases for Mortality and Morbidity Statistics, ICD-11", held in Colombia (2018).

- Participation in "Regional workshop on the use, completeness and quality of birth and death statistics. Strengthening administrative records with a view to monitoring the 2030 Agenda and the Montevideo Consensus", held in Chile (2018).

Training

- National Training Workshop on the new program for automated information system and updating national mortality coders issues ICD-10. (Cuba, 2017 y 2018).

- Provided a face-to-face course on correct filling of the Medical Certificate of Death for medical personnel. (Havana, 2017).
- Provided on-site training course for mortality coders using ICD-10. (Havana, 2017).
- Provided on-site training course for morbidity coders using ICD-10. (Havana, 2017).
- Training of residents of the specialty of Biostatistics in the codification of mortality and morbidity using ICD-10. (Havana, 2017 y 2018).
- Provided training and updating workshops in Statistical Information Systems of National cancer registry, Control of appointments for medical consultations, Controlled patient registry in primary care, Methodology of epidemiological research and investigations directed to National Subordination Units. (Havana, 2017 y 2018).

Research

- The study is in the preparation phase for field work: "Quality of maternal mortality statistics. Cuba 2015 and 2016 ". (RAMOS study modified), the sample is already selected and the necessary information is collected for the filling of the different forms in order to verify if there is any under-registration or misclassification of the report of the deaths maternal diseases.

Other tasks

- Participation in the process of joint translation of the ICD-11 to the Spanish language in the chapters: "Traumatisms, poisonings and some other consequences of external causes" and "External causes of morbidity and mortality" in conjunction with the Collaborating Centers of Mexico and Chile. (2015-2018)
- Participation in Phase III of the ICD-11 pilot tests for coding major morbidity condition (2017-2018)
- Nationally, participation was promoted in "Virtual course on correct completion of the death certificate," coursing the same doctors and coders. (2017-2018)
- The conference was given: Introduction to the implementation of the CIF in Cuba. (2018)
- Conduct of the First Scientific Conference of the Medical Records and Health Statistics Bureau. (2017)
- Participation in the meeting of WHO Collaborating Centers and in the round table National Registry of Deceased in Cuba in the "Third International Health Convention Cuba Health 2018"
- Health Statistical Yearbook was compiled and Basic Health Indicators 2017. (2018)
- Review and update of the Complementary Health Statistics Information System for 2018.

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

22-27 October 2018
Seoul, Republic of Korea

ID: 205

2017-2018 Activity report from the French WHO-FIC CC

Authors: Morgand C.[1], Cuenot M.[2], Melin N.[3], Vazifeh L.[1]
1. Co-head, CépiDc-Inserm, France; 2. Co-head, EHESP School of Public Health, France; 3. ATIH (Technical agency for hospital information), France

Abstract   This poster presents the highlights of the annual report of the French Collaborating Center in relation to the different classifications of the WHO-FIC, ICD-10, ICD-11, ICF and ICHI. ICD related activities mainly focused on translations and development of French tools for mortality coding and development of automatic coding tools for mortality coding. ICF related activities mainly focused on training and translation works. Ongoing collaboration between a Belgian research team and ATIH for the use of ICHI in Belgium are presented.

Introduction

The co-heads of the French WHOFIC CC are Claire Morgand (Inserm) and Marie Cuenot (EHESP). The center also works closely with Nicole Melin (ATIH) for the morbidity part and health interventions. Once a year, a steering committee is organized to discuss the ongoing and future works planned. This poster summarizes the works done in 2017-2018.

ICD-10 related activities

Promotion of ICD-10 in France
Implementation of the coding of the causes of death with Muse and use of the new rules of coding.
Bibliographic research and collection of opinions of French hospital internists to produce a working document on the causal links and the responsibility of different agents on the occurrence of autoimmune diseases.
The 2018 proposals have been implemented, and an updated 2018 ICD-10 with French modifications has been published for the data collection of French morbidity statistics.

Promotion of the ICD-10 in French speaking countries
Ongoing work on implementation of ICD Morocco.

WHO-FIC related activities
In 2018, an updated 2018 Volume 1 French ICD-10 was sent to the WHO for review.
The center continues to translate the ICD-10 Volume 2 in French.
Participation in works and meetings of the MRG, URC/CSAC-ICD and FDC.
Participation in the Survey on the data collection methods for morbidity statistics.

ICD-11 related activities

Promotion of ICD-11 in France
ICD-11 has been presented to some French users for morbidity statistics. Ongoing discussions about the effects of potential use of ICD-11 instead of ICD-10 to collect the morbidity statistics.

WHO-FIC related activities
Participation in works and meetings of the MbRG, FDC and EIC.
Preparation of the organization of the French translation of ICD-11, with other national partners or research teams. Knowledge sharing about translation tools, and about how to optimize and secure the translation.

ICHI related activities

Promotion of ICHI in France
ICHI has been showed to other French users of medical procedure classification like national Insurance.
A comparison of the construction of the CCAM and CSARR codes, the nomenclatures of French medical technical acts, and ICHI codes was carried out. This work is a first step to try to automatize transcoding between CCAM-CSARR and ICHI.

Promotion of ICHI in French speaking countries
ICHI has also been presented to a French-speaking public health research team in Belgium. The latter is going to update and standardize their own national nomenclature. They will study the possibility of using the ICHI coding to apply it to their nomenclature.

ICF related activities

Promotion of the ICF in French
Courses on the ICF, the biopsychosocial model and the participation of people with disabilities
Participation in a European project in collaboration with the Italian WHOFIC CC: Interreg Alcotra "Action 4 Vision" based on the use of the WHODAS 2.0
Bibliographic watch on the ICF publications in French
New website for the French CC for the ICF: https://www.ehesp.fr/international/partenariats-et-reseaux/centre-collaborateur-oms/

WHO-FIC related activities
Participation in works, meetings and teleconferences of the FDRG and EIC (Mexico and Hamburg meetings).
Translation works: finalization of the French version of:
-the ICF 2017,
-the ICF e-learning introductory module,
-the ICF Survey, in collaboration with CIHI (Canada, NACC).
-Update of the Implementation Database
-Participation in the ICF update process (FDRG, URC/CSAC-ICF).

Conclusion

In its core work on the ICD-10 for mortality and morbidity, and on the ICF, the WHO French Collaborating Center is gradually adding activities related to ICD-11 and ICHI. It also contributes, as much as possible, to the different activities of the WHO-FIC network.

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Report from the German Collaborating Centre

DIMDI and ICF Research Branch
Germany and Switzerland

22-27 October 2018
Seoul, Republic of Korea

ID: 206

Abstract   The German Collaborating Centre is a designated WHO-FIC Collaborating Centre since 2003. The Centre is hosted by the German Institute of Medical Documentation and Information (DIMDI). It is supported by the ICF Research Branch. This poster reports on the activities that took place since the last WHO-FIC-Meeting in 2017.

Introduction

After its initial designation in 2003 the German Collaborating Centre (located at DIMDI) was again re-designated in 2016.

The ICF Research Branch has joined forces with DIMDI to facilitate the ICF work. Twice a year DIMDI and the ICF Research Branch meet to discuss the ongoing and planned work.

Work at DIMDI

ICD-10: In 2018 DIMDI worked on the adaptation and translation of the major updates and their implementation into ICD-10-GM 2019 together with requirements from the national annual submission process. Release of ICD-10-GM 2019 is scheduled for the end of September together with the updated Index. Its implementation into health care systems is expected by 1st January 2019. Furthermore, DIMDI is working on the ICD-10-WHO Version 2019 for mortality coding, which is expected to be released later in 2018.

A coding training was conducted for mortality coders from Germany, Austria and Luxemburg. The training was well-received and focused again on mortality rules. The next training will be held in the beginning of 2019 and will focus on the major updates.

ICD-11: DIMDI assisted in the ICD Revision, specifically in the Joint Task Force and the Morbidity TAG. Based on the recommendation of the National Board for Classification in Health Care a working group on ICD-11 was initiated; this group will comment on the content and structure of ICD-11 and prepare it's implementation in Germany.

ICF: DIMDI continued in 2017 with national consultations on the planned updates for ICF. In addition, DIMDI discussed with WHO possible ways for a broader implementation of ICF in Germany, including potential new legislation.

ClaML: In 2017 DIMDI moved the revision of the ClaML-standard in the respective ISO-Committee forward. It entered its last ballot in August. The voting will conclude in October and if no further comments or changes are received, ClaML 3.0 will be ready for implementation – a prerequisite for ICD-11 in ClaML.   Results from this process will again be reported to ITC.

ICHI: In 2018 DIMDI proceeded with the medical review of the ICHI content. Lessons learnt from the German procedure classification and proposed changes were reported to the ICHI development team.

Committee work: DIMDI has actively participated in person or via phone in meetings of the MRG (and its Table Group), the FDC, the URC for ICF purposes, the ITC and other WHO-FIC groups. Stefanie Weber has chaired the ICD-11 Task Force and will continue to do so until its final meeting in Seoul. In January DIMDI hosted a 5-day-meeting of the ICHI working group. Can you spot DIMDI?

Work at the ICF Research Branch

The Branch organized the April 2018 3rd International Symposium on ICF Education in Hamburg, Germany.

ICF Updates within FDRG: Input was given on update proposals and also during FDRG discussions about content gaps between ICF and ICF 2017, particularly as relates to adolescents.

ICF eLearning Tool: The English-language version of the tool was field-tested in Fall 2017, modified according to the field-testing results. The link to the tool is now on the WHO website. The Branch continues to coordinate with WHO regarding the translation into various languages.

Other Training Activities: English-language ICF Workshops were held in Iceland, Austria and Switzerland, incl. an interactive ICF train-the-trainer workshop. Nine German-language workshops were held at Ludwig-Maximilians-Universität Munich and 4 at Medical School Hamburg, the latter focusing on children and youth topics. Two mini ICF workshops were also held at the German ICF Users Conference.

ICF in Education: Support continues to be provided on implementing an ICF-based evaluation tool in the Swiss education system.

ICF Core Set Work: The Branch is advising the Erasmus MC Medical University project team developing an ICF Core Set for adults with cerebral palsy and the PRO PRICARE project team at the University of Erlangen, a 3-prong project to investigate and prevent overtreatment in primary care. The **Lighthouse Hand Project** was completed. Project results have been presented at several international and national conferences incl. the 2017 WHO-FIC meeting, the Rehabilitation Science Colloquium and the German ICF Users Conference. Results of the multicentre longitudinal study applying the ICF-based assessment, ICF Hand$_A$ were published in *Injury*. A paper on the implementation of ICF Core Sets in Germany focusing on the ICF Core Sets for hand conditions was published in the journal Bundesgesundheitsblatt.

Development and Implementation of Standardized ICF-based Tools: ICF-INFO has made progress on common metric development. A methodology paper series in the *Eur J Phys Rehabil Med* included a Branch-led paper on standardized reporting of functioning information on ICF-based common metrics. The Branch continues to coordinate the development of an ICF-based clinical tool based on the ICF Generic-30 Set in routine clinical practice in various countries. This includes the development of simple, intuitive descriptions as a basis for the clinical tool and to be used in ICF-based clinical assessment schedules.

Patient-centered registries: The Branch has provided expertise in a Gothenburg University project that examines the content of patient-centered registries in Europe (starting with the Swedish quality registries) using the ICF as a framework.

The **icfPROreha** project, a project that aims to establish an ICF-based prediction algorithm/tool to identify persons with severe musculoskeletal injuries and return-to-work problems, is progressing.

Conclusions

With a strong focus on ICD-11 and multiple projects for ICF education and implementation the German Collabo-rating Centre with its existing collabo-ration of DIMDI and the ICF Research Branch proves to be well-suited for the successful fulfilment of the work plan as agreed with WHO.

KOREA
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22-27 October, 2018
Seoul, Republic of Korea

Scaling up of ICD-10 implementation in India
- An overview
- (Report of the Collaborating Centre)

ID 207

Madhu Raikwar, * Deepak Goyal* and R.K. Sharma*
*Central Bureau of Health Intelligence (CBHI)
Directorate General of Health Services, Ministry of Health & Family Welfare, India

Abstract After becoming WHO – Collaborating Centre in 2008, Central Bureau of Health Intelligence (CBHI), Directorate General of Health Services is continuously working since then towards the Implementation of ICD – 10 & ICF in India. India, the 2nd largest populated country in the world which needs a consistent and aggressive strategy to achieve the target to implement ICD – 10 in all the Hospitals in India irrespective of their size & nature and for that CBHI is committed to achieve that. This poster explains our efforts showing our successful endeavor.

Introduction

Central Bureau of Health Intelligence (CBHI) established in **1961**, is the **Health Intelligence** wing of the Directorate General of Health Services in the Ministry of Health & FW, GOI with the **vision** to have "**A strong Health Management Information System in entire country".** CBHI has been functioning as WHO CC on FIC in India from September, 2008 onwards. Since then it is actively involved in Human resource development on ICD and ICF. For implementation, training plays an important role as it improves the effectiveness and helps in smooth implementation. CBHI is working to improve the interoperability of national and international health information by disseminating FIC to health workforce at different levels.

Methods & Materials

CBHI maintains a regular work plan according to the activities to be performed under each objective to achieve the goals.

To sensitize & create a pool of Master Trainers in Health sector for implementation of Family of International Classification (FIC) in India as one of the mandate of CBHI and is continuously striving to achieve its objectives. For this, we conduct various trainings and Sensitization work-shops in medical Institutions through our 6 Field survey Units (located at Bangalore, Bhopal, Jaipur, Lucknow, Bhubaneshwar & Patna) and 4 major Training centres (RML Hospital, SJ Hospital, JIPMER, Puducherry and RHSTC, Mohali) located in different states of India.

Annual training calendar is prepared and circulated amongst all health care establishments & interested participants are selected to attend the training based on their respective designation and skills. All logistics are borne by the CBHI, HQ to scale up the process of ICD-10 implementation in the country for which we are committed to.

Results

Below is the overall number of doctors and paramedical professionals who had been trained through these training centres.

TOTAL NUMBER OF TRAININGS CONDUCTED AND MAN-POWER TRAINED DURING 2010-18

Year	ICD-10 Training		Workshops on ICD-10 & ICF	
	Total Number of			
	Trainings	Participants	Workshops	Participants
2010-11	21	363	27	3000
2011-12	17	255	29	3052
2012-13	16	306	27	3029
2013-14	16	248	32	2981
2014-15	21	332	30	2857
2015-16	22	325	18	1726
2016-17	21	337	33	3302
2017-18	20	313	31	3058
Total	154	2474	227	22205

Number of participants attended ICD-10 Training Programme during 2010-18

Year	No. of Participants
2017-18	313
2016-17	337
2015-16	325
2014-15	332
2013-14	248
2012-13	306
2011-12	255
2010-11	363

Number of participants attended workshops on ICD-10 & ICF during 2010-18

Year	No. of Participants
2017-18	3058
2016-17	3302
2015-16	1726
2014-15	2857
2013-14	2981
2012-13	3029
2011-12	3052
2010-11	3000

o National level advanced Training of Trainers on ICF was successfully conducted in India, at New Delhi during 31st May 2018 to 1st June 2018 in which 95 master trainers from all across the country were attended the programme.

o Head of WHO CC, India attended meeting at Mexico with one ICD-10 expert

o With sustained efforts, till now India, CC has created a pool of 486 master trainers on ICD-10

o In 2017-18, 20 trainings on ICD-10 and 31 sensitization workshops were conducted wherein 313 participants were trained on ICD-10 and 3058 participants were sensitized.

o Since 2010, 154 trainings on ICD-10 and 227 sensitization workshops were conducted in which 2474 participants were trained on ICD-10 and 22205 participants were sensitized.

Conclusion

o Through its continuous efforts, CBHI being WHO collaborating Centre for India has Successfully trained medical, paramedical man-power over the period from all across the country.

o Various training like Training of Trainers for medical officers on ICD-10 and ICF, Training for Para-medical personnel on ICD-10 and ICF, Training on medical Record management for Doctors and Para-medical personnel , Training on Hospital management, long term Trainings on medical Record Technician for 6 month and one year training on medical Record officers are the big steps taken by CBHI for ICD- 10 implementation in the country.

Notes

The expected outcome of after FIC training is to create a human resource pool for unified coding of the diseases, functioning and disability for comparability both nationally & internationally for which India as WHO collaborating centre is committed for.

It hopes to continue these activities along with more innovative ideas in the period of re-designation with renewed vigour and sure about ICD-10 implementation in the Country in near future

Italian WHO-FIC CC annual report: July 2017-July 2018

22-27 October 2018
Seoul, Republic of Korea

ID 208

Frattura L., on behalf of the Italian WHO-FIC CC's research network
Central Health Directorate, Classification Area, Friuli Venezia Giulia Region, Italy

Abstract   The aim of this work is to present a summary of the activites carried out over the last year (July 2017-July 2018) by the Italian WHO-FIC CC.

Introduction

In July 2015, the Central Health Directorate – Classification Area – Friuli Venezia Giulia Region was redesignated for the third time as a WHO-FIC Collaborating Centre. After the first eight years of supporting WHO in developing, maintaining, and implementing the WHO-FIC, the new quadriennium started under redefined TORs (Table 1). Lucilla Frattura was confirmed as Center Head. Nenad Kostanjsek was confirmed as the responsible officer for WHO.

Methods & Materials

Taking into account the new 2015-2019 TORs (Table 1), a performance monitoring plan was defined to yearly assess the CC's performance. Five main criteria were used: (i) adherence to the relevant lines of work of the WHO-FIC Strategic Work Plan (SWP); (ii) outcomes of the activities; (iii) new partnerships; (iv) communication power; and (v) resource consumption.

Results

In the third year (21 July 2017-21 July 2018), the Italian WHO-FIC CC was active on six lines of work:
(i) revision of the International Classification of Diseases (ICD-11);
(ii) management of the ICD-10 and ICF update process;
(iii) ICHI development;
(iv) IT and Ontological developments for WHO-FIC;
(v) national work on WHO-FIC
(vi) involvement in the WHO-FIC network activities.
Here some major activities of the Italian CC are introduced. More details can be found in the posters submitted at this meeting (Figure 1).

- In the last year, **Italian CC members served as Co-Chairs of FDRG, MRG, URC-ICF, and FDC.**
- The Italian Center also provided the **URC/CSAC Secretariat for ICD and ICF** and participated in the ICF and ICD update process with two voting members.
- The Italian MRG Co-Chair and the Italian past ITC Co-Chair served as members of the **Joint Task Force on ICD-11 MMS**.
- The Italian FDC Co-Chair also served as coordinator of the «**Functioning interventions» in the ICHI development process**.

Table 1– The Italian WHOFIC CC TORs 2015-2019

Tor 1 Assisting WHO in developing, maintaining and revising the WHO Family of International Classifications, Terminologies and Standards (WHO-FIC), in particular the International Classification of Diseases (ICD), the International Classification of Functioning, Disability and Health (ICF), the International Classification of Health Interventions (ICHI), and relevant terminological and ontological aspects.

TOR 2   Supporting global work with active participation to Committees, as for Implementation & Education, Update & Revision, Electronic Tools & Terminology, and Family Development and Reference Groups, as for Mortality, Morbidity, Functioning & Disability that assist WHO in the development, testing, implementation, use, improvement, updating and revision of members of the WHO-FIC.

TOR 3   Collaborating with local and regional users of classifications by networking and providing support, disseminating information about the WHO-FIC and other health-related classifications, regarding the availability, suitability and applicability of the classifications for different purposes, as reporting and coding, availability of tools for implementation, data analysis, and interpretation, in coordination with WHO.

TOR 4   Promoting use of the WHO-FIC, developing, formulating and sharing teaching materials, organizing and conducting local, regional and global training courses and translating international WHO-FIC materials to the relevant language for local use, in coordination with WHO.

TOR 5   Improving the level and quality of implementation of WHO classifications, supporting quality assurance procedures of the WHO-FIC regarding mechanisms, norms and standards of classification use, data collection, and data analysis, in coordination with WHO.

Figure 1: The Seoul Subway Map of some Italian WHO-FIC CC 2017-2018 activities (the stations are the 2018 WHO-FIC Network Meeting posters
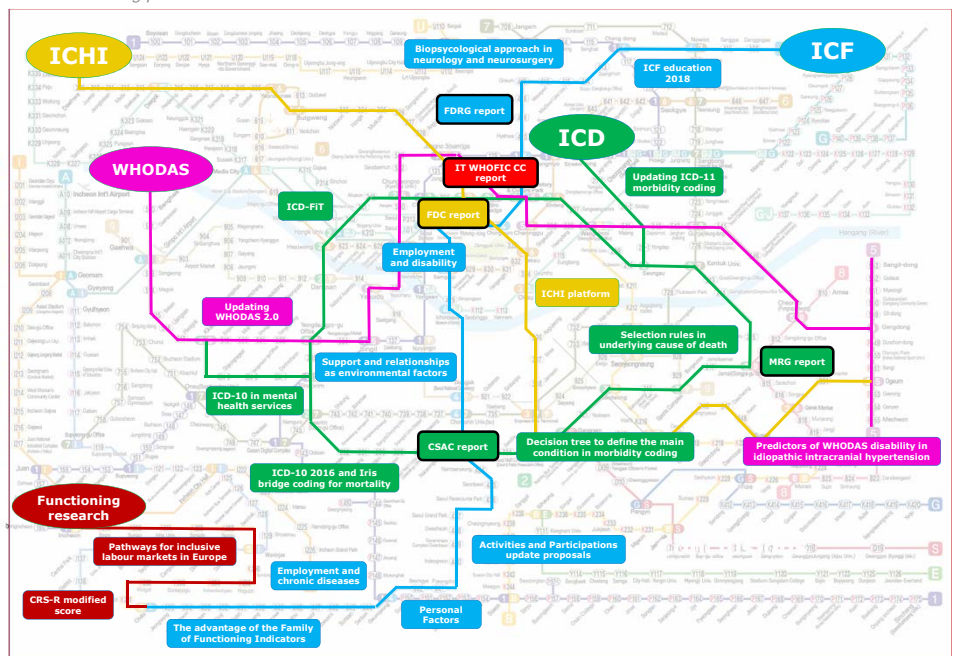
- A **novel application, spinoff of ICD-FiT**, was designed and released, aimed at self-learning and implementing ICD-11.
- The official **Italian translation of ICD-10 2016** was completed (based on a signed agreement with WHO).
- The official **Italian translation of the WHODAS 2.0 Manual** was set up (based on a signed agreement with WHO).
- A **first provisional release of an Italian modification of ICD-10 was developed** in the framework ot the national IT.DRG PROJECT.
- A **draft coding manual**, integrating ICD-10 volume 2, was prepared **for mortality coding**. The draft is currently under publication in Istat website.
- A **decision tree to support the** **morbidity coders decision-making process** was developed in the framework of the SISCO.web project (regional funding).
- **Training activities for implementing ICD-10 and ICF in Italy** were carried out.

Conclusions

The activities of the Italian WHO Collaborating Centre were linked to the relevant lines of work of the WHO-FIC SWP according to the CC's TORs.

Reference

Italian WHO-FIC annual report, Udine, Sept 2018

Acknowledgements

Activity Report from WHO-FIC CC in Japan

22-27 October 2018
Seoul, Republic of Korea

ID: 209

Author: Kei MORI, Head of Collaborating Centre for the WHO-FIC in Japan

Abstract
The Japanese Collaborating Centre mainly reports three events as below, "Interactive Review Meeting for WHO ICD-11 Implementation in Japan", "the 7th ICF Symposium" and ICHI.

ICD

Ministry of Health, Labor and Welfare held "Interactive Review Meeting for WHO ICD-11 Implementation in Japan" which invited two experts of WHO and one ICD-related specialist from abroad in September 1st to 2nd, 2017.

There were about 60 attendants who participated in the meeting from domestic side such as the ICD expert committee, the Japan Medical Association and so on for two days.

We have been actively involved in the revision to ICD-11 from the early stage so far, and most of the attendants who had a high interest in the revision of ICD-11 eagerly listened to the WHO staff mainly address the comprehensive outline of ICD-11 development with the main change from ICD-10, the coding trial of ICD-11 and the future schedule on the first day.

The attendants must have successfully understood the overall picture including progress of the revision.

On the next day of the meeting, the WHO staff explained to the questions and comments previously received from the domestic academies, and the discussion between the WHO staff and the attendants was held in the question and answer session.

It was a very fruitful two-day meeting for the attendants with the understanding of ICD-11 proceeding and more concrete issues clarified.

Interactive Review Meeting for WHO ICD-11 Implementation in Japan: September 1-2, 2017

ICF

The 7th ICF Symposium was held as part of the promotion of the ICF as "common language" on various fields regarding health and welfare, which ended successfully with over 300 attendees in this January. We invited the staff in charge of dissemination from WHO for the first time, who addressed the keynote lecture and stated the importance of collecting data based on not only ICD but ICF for the purpose of policy making by accumulating in health information system, and also we invited five stakeholders and researchers as a panelist.

After reporting on the latest five cases of utilizations by ICF, we had the open discussion with the WHO staff and five domestic panelists, which could have cleared the point at issue of using ICF the people concerned had in mind.

Finally, this time we collected posters concerning utilizing ICF as the first attempt though, there were thirteen posters applied which showed various examples such as collecting big data based on ICF at medical facilities, a trial for collecting data by ICF with developing system and so on, where the panelists and the attendees were eagerly exchanging opinions inside the venue for the time being after the symposium ended.

Speakers of the 7th ICF Symposium: January 20, 2018

ICHI

WHO and the WHO-FIC Network have been developing the International Classification of Health Interventions (ICHI) since 2007. ICHI covers all parts of the health system and contains a wide range of new material not found in national classifications. It describes health interventions using the three axes of Target, Action and Means. Users may choose to record a range of additional information using extension codes. Although tentative version "ICHI Beta 2018" containing more than 7,000 interventions has been released, ICHI is still under development. WHO-FIC Japan CC joined the ICHI development since 2016 collaborating with Dr.Kawase, a task force member of ICHI. Assisted by more than 50 medical information managers, we reviewed the sections of Intervention on the surgical procedure in ICHI Beta 2018 compared to Surgery Classification of Japanese Health Insurance Federation, "K code". On the basis of the results of such code-mapping tests, we gave the suggestions into the platform of ICHI. Furthermore, we participated in ICHI development meeting in Cologne and WHO-FIC Mid-term meeting in Genova to develop ICHI. We're going to continue making the contribution to ICHI development, until ICHI can be finalized for implementation.

WHO-FIC FDC Mid-year meeting in Geneva April 15-16, 2018

Annual Report from the Mexican WHO-FIC Collaborating Centre CEMECE

22-27 October 2018
Seoul, Republic of Korea

ID: 210

Authors: Yañez, M.; Alanis, R.; Vazquez, B.; Pérez, M.; Andrade, C. et al.

Mexican WHO-FIC-CC, MoH

Abstract   CEMECE is the Collaborating Center of the WHO-FIC in Mexico since 2008. Currently is in the third period of designation (2016-2020) and all its activities are related with training, advise, guide, encourage the use of WHO-FIC and generate health information in Mexico and support some countries of Latin America, according with the terms of reference established with PAHO and WHO. This poster shows briefly this activities during last year.

Introduction

The Mexican Center for the Classification of Diseases (CEMECE, for its acronym in Spanish) is a Collaborating Center of the WHO for the Family of International Classifications. According to this, its main activities are related to the training of users in the FCI-OMS as well as its promotion to improve the health information.

Activities

Last year, with support of PAHO, the WHO-FIC Annual Meeting was held in Mexico City, CEMECE and PAHO Mexico were the hostess and was a successful meeting during one week (16 to 21 October). Into the meetings every Reference Group and Committee discussed the issues relates with the development and improve of Classifications. A quite important topic was the progress of ICD-11. In the welcome session, staff of WHO exposed some features of the ICD-11 browser and the coding tool and the advantages of this new classification.

This meeting were very special because was an opportunity to some Latin American colleagues that they never had have the chance to participate in this kind of meeting. To people of Latin America were an terrific experience and they were motivated to continue this labor to health information systems in their countries.

In plenary session people of Ministry of Health in Mexico presented their advances in development in the Health Information System.

Mexico were the first country in Latin America to implementate the version of ICD-10 with updates until 2018. It was due to the necessity to use the coding system to mortality IRIS. Mexican WHO-FIC CC made the translation to Spanish to this updates. After that, PAHO supported to get the official version to benefit all the countries that speak Spanish.

Nowadays we have the official version of ICD-10 2018 approved for PAHO. With this technical work, Mexican WHO-FIC CC had the approach to the main changes of the rules to steps to select the underlying cause of death (SP1-SP8, M1-M4), and have offered courses o training all the coders into Mexico and some colleagues abroad as Ecuador and Chile.

Chart 1: Comparison between the rules of mortality with updates 2016 in Spanish

Related with the update of ICD-10, Mexico is working with the Automated Coding System for Mortality IRIS and we work with a dictionary of clinical terms validates of experts coder and physicians.

Into the Mexican WHO-FIC CC worked in the dictionary that works with the IRIS Coding System and we shared with other countries through network created by PAHO for strengthening health information systems in Latin America and the Caribbean (RELACSIS by acronym in Spanish). Also, into RELACSIS, we offered a Webinar series to talk about the process of implementate the updates of ICD-10 and the IRIS Coding System and then, we supported the colleagues to use it in their mortality systems.

The Mexican WHO-FIC CC participated in Workshop Spanish translation of the International Classification of Diseases for Mortality and Morbidity Statistics, 11th Revision (ICD-11) in Bogota, Colombia, where the percentage of progress of the translation into Spanish of the chapters of the ICD-11 was revised. The translation problems were discussed and analyzed in each assigned chapter. A consensus was reached on translation of specific terms and key sections of the chapters and a work plan was developed to finalize the translation of the ICD-11 into Spanish, as well as other materials from the implementation package.

The solidarity translation of this new classification is of utmost importance for the statistical offices and the ministries of health, considering that the WHO recommended its adoption in the year 2022, besides that work has been done in field tests under the coordination of PAHO. / WHO and in collaboration with several Collaborating Centers and National Reference Centers of Latin America since 2015.

Acknowledgements

Annual report 2017-2018
WHO collaborating centre for the Family of International Classifications in the Netherlands

22-27 October 2018
Seoul, Republic of Korea

ID: 211

Authors: C.H. van Gool, L.M. Harmans, H. ten Napel

WHO Collaborating Centre for the Family of International Classifications,
National Institute for Public Health and the Environment, Bilthoven, The Netherlands

Abstract   The Dutch National Institute for Public Health and the Environment has hosted the WHO-FIC Collaborating Centre in the Netherlands since 1998. This poster summarizes the activities of the WHO-FIC Collaborating Centre in the Netherlands (Dutch WHO-FIC CC) that took place from October 2017 to October 2018 in relation to its Strategic Workplan.

Introduction

As early as 1989, WHO appointed a predecessor of the current Dutch WHO-FIC collaborating centre (CC) as a CC for the ICIDH. Since then the Dutch WHO-FIC CC has been re-designated multiple times as a CC for the Family of International Classifications. The last re-designation was late 2017, for the period 2017 – 2021.

Strategic Workplan

With its re-designation in 2017 a new Strategic Workplan was implemented. 2018 marks the first full year of this designation period.

This poster highlights the activities of the Dutch WHO-FIC CC that took place from October 2017 to October 2018 along the six key activities in the Strategic Workplan 2017 - 2021:

I Support revision and maintenance of International Statistical Classification of Diseases and Related Health Problems (ICD)

II International Classification of Functioning, Disability and Health (ICF) support, update work, guideline development and linking with ICD-11

III Supporting WHO-FIC related education and implementation work

IV Supporting WHO-FIC related informatics and terminology work

V Support the development of other WHO-FIC Classifications, including the International Classification of Health Interventions (ICHI)

VI Coordination and management of national WHO-FIC activities

I Support Revision of ICD

ICD-11 advocacy was started in the domains of government, statistics and health care. Late 2018 a provisional translation and implementation plan will be presented to our Department

WHO Collaborating Centre for the FIC in The Netherlands

I Support Revision of ICD *(cont'd)*

of Health, including provisional timelines, primary stakeholders.

The Dutch CC still intensifies collaboration with the Dutch Centre of expertise for standardization and eHealth (Nictiz), to prepare for e-health application of ICD-11 and other classifications.

II Support ICF

The Dutch WHO-FIC CC takes responsibility in the ICF update process by commenting on and voting for ICF update proposals. Also, one of the centre heads (CvG) is member of the Initial Review Group (IRG).

Furthermore, the Dutch CC has received a fair amount of requests for using WHODAS , indicating an increased awareness of the ICF theoretical framework in the Netherlands.

III Support WHO-FIC Education & Implementation

One of the centre heads (HtN) serves as EIC co-chair and prepared and participated in EIC (teleconference) meetings.

Together with the South African Collaborating Centre the Dutch Train-the-Trainer ICF course was translated into English and is ready for use in South Africa and elsewhere.

After the FDRG midyear meeting, the Dutch WHO-FIC Collaborating Centre started translating the ICF e-learning tool. This work will be finished at the

III Support WHO-FIC Education & Implementation (cont'd)

2018 Annual meeting in Seoul.

Furthermore, several ICF training courses and workshops were held in the Netherlands and Belgium.

Finally, together with WHO HQ, the Dutch WHO-FIC CC maintains the WHO-FIC Implementation Database, developed by the Dutch CC.

IV Support WHO-FIC Informatics & Terminology

The Dutch WHO-FIC CC is involved in Informatics and Terminology Committee work and (teleconference) meetings, e.g. the Mapping Methodology working group.

V Support Development of Other WHO-FIC Classifications

Both centre heads participated in FDC (teleconference) meetings. One of the centre heads (HtN) takes part in the further development of the WHO-Family paper. One of the centre heads participated in the WHO-FIC Council Small Executive Group (Council SEG).

The Dutch WHO-FIC CC participated in the ICHI field trial. We mapped the top 100 of most reimbursed 'health care activities' to ICHI codes and commented on apparent gaps, errors, et cetera, using the ICHI browser platform. Also, ICHI content was screened for completeness and granularity with respect to urology and ophthalmology interventions.

VI (Inter-) National WHO-FIC Activities

Together with our colleagues from the Flemish ICF Platform (Belgium) we created an ICF version that includes Flemish preferred terms. For specific ICF terms the Dutch word has a different meaning in Flemish than in Dutch (See also poster by ten Napel et al., Increasing accessibility of ICF for Flemish users).

WHO-FIC Collaborating Centre for North America

Donna Pickett, Keith Denny, Patricia Wood

22-27 October 2018
Seoul, Republic of Korea

ID: 212

Introduction

The Collaborating Centre for the WHO Family of International Classifications (WHO-FIC) for North America was established in 1976 and was most recently re-designated for four years on March 21, 2016 through March 20, 2020. The North American Collaborating Centre (NACC) is located at the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention, in the U.S. Department of Health and Human Services and together with the Canadian Institute for Health Information (CIHI) and Statistics Canada comprises the NACC. http://www.cdc.gov/nchs/icd/nacc.htm

Mortality Data

NCHS and Statistics Canada promote the development and use of ICD-10 for mortality statistics in the U.S. and Canada through production of national data files and publication of reports.

- NCHS published final 2016 U.S. mortality data in December 2017, 11 months from the end of the data year.

- Statistics Canada released 2014 Mortality (including cause of death) data in November 2017; 2015 Mortality (including cause of death) data was released in February 2018; 2016 Mortality (including cause of death) was scheduled for release in June 2018.

- Work on Electronic Death Registration Systems (EDRS) in the U.S. continues to progress. When implemented, EDRS will require inputs from two sources – the funeral director and the physician.

- NCHS is working with the Iris Institute to reengineer its Mortality Medical Data System (MMDS) for auto-coding causes of death. The goal is to use as much of Iris as possible to build a system that will auto-code a larger percentage of records, while maintaining international comparability, with the ultimate goal of harmonizing the US system and Iris for ICD-11.

- The implementation of electronic death registration is anticipated in two Canadian jurisdictions in 2018.

ICD-11

NACC members served on the Revision Steering Group and its Small Executive Group until both groups were sunsetted October 2016. NACC members continue to serve on the Joint Task Force for ICD-11 and the Patient Quality and Safety TAG for the ICD-11 revision process as well as participating in the WHO ICD-11 Statistical Stakeholders Working Group providing input into the ongoing development of ICD-11 and supporting tools.

Morbidity Data

The U.S. and Canada both have developed and maintain clinical modifications of ICD-10 for morbidity applications in their respective countries.

- The U.S. implemented ICD-10-CM and ICD-10-PCS effective October 1, 2015 and since October 2016 has provided annual updates and updated coding guidelines

- The CDC and CMS published the last updates to the General Equivalence Maps (GEMs) on October 1, 2017 (FY 2018 GEMs). Documents are available on the CDC website at: https://www.cdc.gov/nchs/icd/icd10cm.htm.

- The CDC and CMS published the last updates to the GEMs on October 1, 2017 (FY 2018 GEMs). Documents are available on the CDC website at: https://www.cdc.gov/nchs/icd/icd10cm.htm

- Canada's v2018 of the ICD-10-CA was released in Canada in February 2018 for use beginning April 1, 2018. Streamlining and updating of Canadian courses to reflect v2018 was completed as was the development of webinars to support the implementation of v2018.

- CIHI is developing a series of webinars to support topical issues, such as opioid coding, to release throughout fiscal year 2018-2019.

Disability Data

NACC facilitates the implementation and use of ICF in both the U.S. and Canada. NACC distributed a periodic ICF Newsletter between 2002 and 2012 the newsletters are available on the NACC website (https://www.cdc.gov/nchs/icd/icf.htm)

Education & Technical Assistance

The U.S. and Canada provided higher level learning opportunities for experienced mortality coding staff in the form of Targeted Training modules.

- NCHS provided basic ICD-10 cause of death coding training for new in-house staff.

- Statistics Canada continues to conduct basic ICD-10 multiple causes of death coding training with in-house staff as a new keyer-coder model is established for use with Iris, the international automated mortality classification system. Plans for basic ICD-10 underlying cause of death coding training have been made for November 2018.

- NCHS made a number of webinars and presentations during 2013-2017 on the impact of transition to ICD-10 code sets (ICD-10-CM/PCS), focusing on implications for public health organizations and impact post-implementation.

WHO-FIC Network

NACC has representatives on all WHO-FIC Network Committees and Reference Groups.

- The Head of the NACC and an additional NACC member serve on the WHO-FIC Network Council.

- The Head of the NACC, since 2017, also serves as the Co-Chair of the WHO-FIC Network Council and the Council Small Executive Group.

- NACC members serve on the Education and Implementation Committee.

- NACC members serve on the Mortality Reference Group (MRG) and on the ancillary MRG Table Group. NACC provides the Secretariat for the Mortality Reference Group.

- NACC members serve on the reactivated MbRG; and a NACC representative serves as one of three chairs of the MbRG. NACC provides the Secretariat for the Morbidity Reference Group.

- NACC members serve on the ICHI Task Force.

- NACC members serve on the FDRG and the secretariat is currently based at McMaster University.

- NACC members serve on the Update and Revision Committee (URC) / Classification and Statistics Advisory Committee (CSAC)

- A NACC member serves as Informatics and Terminology Committee (ITC) co-chair

Annual Report from the Nordic WHO-FIC Collaborating Centre

22-27 October 2018
Seoul, Republic of Korea

ID: 213

Lars Berg
Head of Centre
Nordic WHO-FIC Collaborating Centre, Oslo, Norway

Abstract The Nordic (Norway) Collaborating Centre for the Family of International Classifications was redesignated by November 1st, 2016 for a new four-year period. The Centre contributes to the work in the WHO-FIC Network with members in seven of the eight Committees and Reference Groups, in the ICD-11 Joint Task Force and the ICHI development.

The Nordic (Norway) WHO-FIC Collaborating Centre

The Centre is funded by the Health Authorities in four of the five Nordic Countries (Denmark, Iceland, Norway and Sweden).

The Nordic Centre
• was established in 1987 hosted by Uppsala University, Uppsala, Sweden
• was moved 2009 to Oslo, Norway hosted by the Norwegian Directorate of Health
• is since December 2015 hosted by the Norwegian Directorate of eHealth, Oslo, Norway.

Due to financial reasons Finland finished their collaboration in the Centre by December 31st, 2016. But the Nordic collaboration within health statistics continues as usual with:
• collaboration with the Nordic Casemix Centre in Helsinki (www.nordcase.org)

• collaboration with NOMESCO (Nordic Medico-Statistical Committee) (http://nowbase.org/)

• collaboration with the Classification Units/Departments in the Nordic Countries
• Denmark
• Iceland
• Norway
• Sweden
• Finland

The Nordic House in Reykjavik. Designed by Alvar Aalto. The Nordic House celebrates its 50th anniversity this year, 2018.

Work during this period

The Nordic Centre work October 2017 to September 2018 is described in this poster.
Twelve Experts from the Centre and the Nordic Countries participated in the **Annual WHO-FIC Meeting in Mexico City** October 2017.

EIC
• Ann-Helene Almborg and Lars Berg attended the EIC **Mid-year Meeting** 11-12 April 2018 in Hamburg.
• **The Implementation Database** was updated for the Mexico Meeting and Focal points checked. Improvements of questions suggested.

FDC
• Ann-Helene Almborg, Marie Vikdal and Lars Berg attended the **FDC mid-year meeting** in Geneva, 14-15 April 2018. Participation in the FDC UHC group.

ITC
• Ann-Helene Almborg participate in the mapping group of ITC.

CSAC (URC)
• Olafr Steinum and Martti Virtanen are voting members of the CSAC for update of **ICD-10**.
• Thomas Maribo is the current **moderator** for the updates of ICF for CSAC and FDRG. The Nordic Centre have this year allocated resources for this function, and will do so also next year.
• Solvejg Bang and Ann-Helene Almborg are voting members for ICF updates. Heidi Anttila from THL, Finland, Taran Borge and Lars Berg from the Nordic Centre also participated in the in the **ICF** updates.

ICD-11 Joint Task Force (JTF)
• Teleconferences each month.
• Meeting 18-20 April 2018 in Geneva, Switzerland (participation by Olafr Steinum, Martti Virtanen and Lars Berg).

Nordic-Baltic Mortality Meeting
• 14-15 June, 2018 in Copenhagen. Excellent chaired by Claudia Ranneries, Sundhedsdatastyrelsen, Denmark. Francesco Grippo, Italy presented IRIS news and contributed with much valuable views on mortality coding issues. Presentations and coding comparison performed and prepared by Eva Strand, Sweden and prepared by Patricia Wood, Canada.

MbRG
Olafr Steinum is one of the three co-chairs in MbRG. Olafr and Martti Virtanen participated in the mid-year meeting in Banff, Canada, April 9-10 2018. The ICD-11 Reference Guide is the major work for this reference group.

MRG
Anne-Gro Pedersen, Norway and Eva Strand, Sweden participated in the WHO-FIC meeting in Mexico 2017 and the MRG/Table Group/IRIS meeting in Budapest, Hungary March, 21-24 2018.

FDRG
• Ann-Helene Almborg – and Heidi Anttila from THL, Finland - participated in the **FDRG mid-year meeting** in Hamburg, April 11-12 and reported about Nordic activites on ICF and WHODAS.

ICHI
• Solvejg Bang, Ann-Helene Almborg and Marie Vikdal, participated in **the ICHI mid-year meeting in Geneva**, April 14-15, 2018.
• Ann-Helene Almborg is a member of the **ICHI Task Force Group** and **ICHI** Development Team, and its subgroup **ICHI Functioning Technical Group**.
• The National Board of Health and Welfare in Sweden have performed a **pilot mapping** of designated parts of the NCSP+ (NOMESCO Classification of Surgical Procedures, including also national non-surgical procedures) to ICHI. See poster to the Seoul meeting.

Web site and contact

Web site
Web site of the Nordic WHO-FIC Collaborating Centre:
www.nordclass.org
Contact
Lars Berg, Head of Centre
(lars.berg@primnet.se)
Solvejg Bang, Chair of the Board of the Nordic Classification Centre
(SMB@sundhedsdata.dk)

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Annual Report from the WHO-FIC Collaborating Centre in Korea

22-27 October 2018
Seoul, Republic of Korea

ID: 214

Jongduk Kim[1], Eunkyung Seo[1], Youngcheol Jung[2], Heejung Jung[2], Wanho Kim[3], Eunjung Hwang[4], Eunkyung Choi[4], Rana Jongran Lee[5], Seolkyung Baek[6]

[1]Ministry of Health and Welfare, [2]Social Security Information Service, [3]National Rehabilitation Center, [4]Health Insurance Review & Assessment Service, [5]Korea Institute of Oriental Medicine, [6]Korea Medical Record Association, Republic of Korea

Abstract   WHO-FIC Collaborating Center of Korea has executed various activities such as ICD-11 translation into Korean, ICF field trial of Korean version of e-learning tool for the purpose of developing and utilizing WHO-FIC. In addition, it has thoroughly prepared for and promoted the successful hosting of WHO–FIC Network Annual Meeting 2018 in Korea.

Introduction

Social Security Information Service was designated as WHO-FIC Collaborating Centre of Korea in Dec. 2012 and re-designated in Dec. 2016.

The Korean Collaborating Centre(Korean CC) has ① developed and utilized WHO-FIC, ② developed and managed KOSTOM and ③ pursued to hold WHO-FIC Network Annual Meeting 2018.

WHO-FIC Development and Utilization

◆ International Classification of Diseases (ICD)

According to the request of the WHO, the Korean CC has conducted ICD-11 field trial in 2018 continuing from 2016 and 2017.

This year's field trial aims at, ① through the verification of updated coding tool, ② increasing the readiness and user friendliness of ICD-11 prior to the announcement of its implementation version. It has been conducted by the coders who have participated in previous field trial on 80 coding cases provided by the WHO.

The outcomes of 2016-2018 surveys regarding the difficulties in ICD-11 coding and the details and ambiguity of ICD-11 showed that easy-to-code ICD-11 and the details and clarity of ICD-11 have improved.
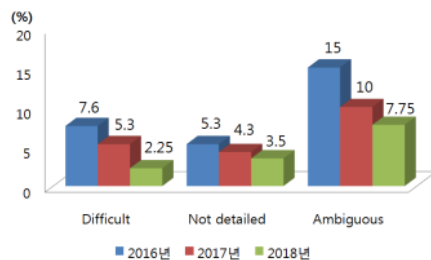
It seems to be the result from the improvements of ICD-11 browser and coding tool functions but the stability of its system and the continuous advancement of its search function keep being required. It is also demanded to supply the clear coding guidelines on the sequences of code provision and the guidance of post-coordination when coding ICD-11.

◆ International Classification of Functioning, Disability and Health (ICF)

The Korean CC has completed the translation of ICF e-learning tool into Korean and is conducting the field trial of its translated content in 2018.

In addition, in cooperation with the National Rehabilitation Center, the Korean CC has built its global database by conducting the Korean version of the International Spinal Cord Injury Survey(InSCI) since Mar. 2017. It also completed the translation into Korean of Model Disability Survey after receiving the approval of the WHO.

<Korean Version of InSCI>

◆ International Classification of Traditional Medicine (ICTM)

The Korean CC, working with the Korea Institute of Oriental Medicine(KIOM) in charge of operating ICTM Expert Committee, held the meeting to plan local utilization of TM Chapter. The KIOM had the meetings with the Association of Korean Medicine and other relevant organizations to share the development process of TM Chapter and discuss its local utilization and related education.

The KIOM attended ICD-11 TM Chapter Editorial Working Group Meeting in April and developed the implementation version of ICD-11 in June 2018. Also, the KIOM had the conference calls (10 times) with the WHO and Managing Editors from Korea, China and Japan to participate in revising and editing the details of TM Chapter.

◆ International Classification of Health Intervention (ICHI)

The Health Insurance Review & Assessment Service(HIRA) has performed mapping Korean EDI medical procedure list used for National Health Insurance claims to SNOMED CT first and then to ICHI in a few specialty areas. Scope of the mapping can be expanded to other specialties based on the findings. The objectives of this study are to explore the applicability of ICHI to domestic classification and to gradually improve global interoperability of Korean National Health Insurance claims data.

Development and Management of Korean Standard Terminology of Medicine

◆ Notification of Korean Standard Terminology of Medicine

The Korean CC has developed and managed the National Healthcare Terminology Standard since 2014 and Ministry of Health and Welfare(MOHW) has annually notified its revision.

After newly adding the terms including oriental medicine ones to the 280,000 terms previously notified in 2017, the Korean CC organized them and then gathered the opinions of government agencies, medical groups, relevant experts and users to finally notify about 320,000 terms and 540 medical illustrations in Mar. 2018.

Preparation of 2018 WHO-FIC Network Annual Meeting

◆ Promotion of 2018 WHO-FIC Network Annual Meeting

While attending 2017 WHO-FIC Network Annual Meeting in Mexico City, the MOHW and the Korean CC promoted Korea hosting the 2018 Meeting via related videos.

◆ Preparation of 2018 WHO-FIC Network Annual Meeting

The Korean CC has put a lot of efforts in preparing the Annual Meeting including program planning, invitation, event arrangement, etc. through organically working with the WHO headquarters and relevant organizations. For details, refer to the following website.
http://whofic2018.com

<Website of WHO-FIC Network Annual Meeting>

Acknowledgement

The Korean CC would like to gratefully acknowledge WHO-FIC international members for their active participation in the development of WHO-FIC.
We deeply appreciate the experts and relevant organizations supporting and cooperating with the WHO-FIC Collaborating Centre of Korea such as the Ministry of Health and Welfare, the National Statistics Office, the National Rehabilitation Center, the Korea Institute of Oriental Medicine, the Health Insurance Review & Assessment Service, the Korean Medical Association and the Korean Medical Record Association.

koreawhofic@ssis.or.kr

RUSSIAN WHO-FIC COLLABORATING CENTRE ANNUAL REPORT 2017-2018

22-27 October 2018
Seoul, Republic of Korea

ID: 215

Sergey Cherkasov, Dmitry Meshkov, Alexander Shoshmin, Yanina Besstrashnova, Evgeniya Berseneva, Ludmila Bezmelnitsyna, Anna Fedyaeva, Valeria Oleinikova
Russian WHO FIC CC
National Public Health Research Institute named after Semashko
Federal Scientific Center of Rehabilitation of the Disabled named after G.A. Albrecht
Russian Federation

Abstract Russian WHO-FIC CC is based on the facilities of National Research Public Health Institute named after Semashko (Moscow), and St.Petersburg Scientific and Practical Center of Medical-Social Expertise, Prosthetics and Rehabilitation of the Disabled named after G.A.Albrecht (St. Petersburg). This poster reports on the activities that took place since the last WHO-FIC Neeting in 2017.

Support ICD

Preparation of the current version of ICD-10 (2016) in Russian

The translation and adaptation of all 3 volumes of the ICD-10 (2016) has been accomplished by specialized teams established for each chapter and containing an interpreter of medical literature from English into Russian; a clinician specialized in the chapter-related area and a specialist in medical statistics and coding to achieve semantic identity with the original. The translation was also agreed with and approved by a key specialist in area diseases appointed by Ministry of Health of the Russian Federation (MoH). The final documents were reviewed and approved by WHO Headquarters. Currently the WHO Headquarters develop plan of dissemination of the books in Russia.

Conference "New approaches to populational health monitoring"

The conference took place in May 2018. 150+ specialists from Russian regions as well as from Belarus, Kazakhstan, Kirgizia and Turkmenia (WHO Member States) took part in the conference. The participants described the local approaches to collecting and proceeding with health statistical data and stressed the necessity of developing of web-based tools for coding of this information based on ICD-10 classification.

The number of statistical specialists and their geographical location requires creation of local support centers in regions supervised by the Russian WHO FIC CC. Two more centers have been opened in 2017 in Russia.

Creation of local National Guidelines in Russian responding to issues and questions revealed during training courses for ICD-10.

Automated coding system for causes of death

Created web-based automated system for death coding has successfully accomplished testing performed by20+ regional hospitals in Russia under Federal MoH supervision. The implementation of the system would improve the reliability of the statistical information necessary for developing of effective healthcare measures achieving WHO goals of sustainable development.

Support ICF

Draft version of the ICF 2017 in Russian

A draft version of the ICF including all adopted updates and approved by WHO was prepared in Russian and published for the educational purpose.

National Guidelines on Rehabilitation of Persons with Disabilities.

The National Guidelines on Rehabilitation of Persons with Disabilities were published. These Guidelines contain a chapter on WHO international classifications and ICF implementation in rehabilitation, ICF-based disability assessment and the most probable rehabilitation measures.

Experts participated in FDRG activities and teleconferences.

Support WHO-FIC Education & Implementation

ICD trainings

A training course and set of teaching materials for medical schools and postgraduate education of doctors of clinical specialties has been developed to support the implementation and proper use of the ICD in the country. Educational Internet portal and a database with certified professionals working with ICD-10 have been created. 8 educational workshops in the regions of the Russian Federation have been performed during 2017-2018 and 200+ specialists trained.

ICF trainings

According to the task by the Ministry of Labour and Social Protection of the Russian Federation trainings for 300+ professionals from institutions of medical-social expertise have been conducted in 2017-2018 in Russia as well as for Russian speaking countries in Kyrgyzstan and Tajikistan.

Feasibility studies on using national (re)habilitation guidelines based on the ICF Core Sets for children and youth with cerebral palsy were performed in a number of regions of Russia including Voronezh and Smolensk regions, as well as the city of Perm. Those studies were also accompanied with the pilot projects of assessing new criteria for child disability in Voronezh and Smolensk regions.

The result of the investigation is the template of a regional program on rehabilitation system development and evaluation of regional rehabilitation system which was developed and provided for review for the local experts Perm and Sverdlovsk regions.

Conference "Disability and Rehabilitation" (November 2017) WHO-FIC CC in Russia took part in organization of the conference 'Disability and Rehabilitation' with participation of international experts in St. Petersburg, Russia.
About 200 participants and speakers were officials and professionals from federal and regional authorities, organizations of social protection, healthcare, education, culture and sports, research centers and universities, and NGOs from 9 countries. Among the others, presentations were devoted to activities of the WHO-FIC CC in Russia, cases of implementation ICF in other WHO Member States.

Contacts

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BARCELONA COLLABORATING CENTRE (SPAIN) FOR WHO-FIC: ANNUAL REPORT 2018

**22-27 October 2018
Seoul, Republic of Korea**

216

Maria-Dolors Estrada[1,2], Mireia Espallargues[1,3], Jaume Canela-Soler[4], Toni Dedeu[1] on behalf of the CC-BCN (Spain)*

[1]Agency for Health Quality and Assessment of Catalonia (AQuAS), Spain

Abstract The CC-BCN (Spain). This initiative is promoted by the Health Department of the Catalan Government (2010). This poster summarizes main activities carried out for the CC-BCN (Spain) from October 2017 to August 2018.

Governance

The **CC-BCN (Spain)** is led by the Agency for Health Quality and Assessment of Catalonia (AQuAS). It is currently under designation.

Agència de Qualitat i Avaluació Sanitàries de Catalunya

The **staff** of the CC-BCN (Spain) includes experts and organizations from the Spanish Health System that have an interest and experience in working with Family International Classification (FIC).

Approved work plan Horizon 2020

Activity 1: After the great success of the WHO-FIC Network held in Barcelona (2014), the CC-BCN (Spain) plan continues to promote:

➢ attending annual conferences,
➢ participating in online Council meetings,
➢ consolidating its staff and collaborators and,
➢ reinforcing its local, national and international networks.

Activity 2: Support of the ICD 11 revision process.

Activity 3: Development of electronic tools for WHO-FIC products.

Activity 4: Support of the ICD and ICF implementation and updates in Spain.

*Team

Staff:
Bernabeu M[5], Bustins M[6], Casanellas JM[7], Conejo C[8-10], Conesa A[11], de San Pedro M[12], Gallego C[12], Gelabert G[7,13], Hernández-Cortés A[14], Laxe S[5], López MJ[9], Lozano R[11], Martinez J[12], Mejón R[15], Paluzie G[13,16], Pastor-Duran X[11], Pirla J[9], Puigdefàbregas A[17], Rius A[12], Romero R[9,10,18], Rovira M[12,13], Serrano J[19], Tormos JM[5].

Staff collaborators:
Arcas M[1], García I[20], González A[9], Miquel M[21], Molina P[17], Niqui O[22], Salom M[23], Sánchez Guerrero E[24], Sánchez Jiménez F[24], Sarsanedas E[25].

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2018 Main achievements

Activity 1: The CC-BCN (Spain) staff attended four Council meetings since November 2017. The key goal to present the ICD 11 to the Member States was achieved on June 2018. The CC-BCN (Spain) staff met twice. The first time to be informed on 2017 WHO-FIC Network (Oct 2017) and the second time to be updated on the CC-BCN (Spain) designation status (Feb 2018).

Activity 2: The CC-BCN (Spain) has been working actively on the Spanish ICD 11 development alongside its Ibero-FIC Network partners in the frame of RELACSIS (PAHO/WHO).

2020
2018
2012

Activity 2:

Lately, the CC-BCN (Spain) has contributed to the following tasks:

➢ supporting the objective to translate 70% of the Spanish ICD 11 version.

➢ Actively participating in regular online meetings led by PAHO/WHO (more than 18 meetings have been hold from October 2017 onwards).

➢ pilot study number 3 "coding 30 diagnostic terms (morbidity) with the Spanish ICD 11 version" (5 people coded each 30 diagnostic terms).

➢ pilot study number 4 "coding 30 clinical cases (morbidity) with the Spanish ICD 11 version" (5 Spanish experts contributed to get the gold standard and another group of Spanish people carried out the pilot study).

Activity 3: Some IT health experts are working on a virtual assistant for coding morbidity diagnostic and procedures with ICD-10-CM/PCS. Please see poster led by A. Conesa, X. Pastor-Duran and R. Lozano-Rubí).

Activity 4: The CC-BCN (Spain) website promotes some of the FIC activities/projects in progress in Spain.

2019 Challenges

➢ Continue moving forward with the firm goal of becoming a full-fledged CC in the field of the WHO-FIC Network.

➢ Consolidate the CC-BCN (Spain) staff and reinforce a network of local, national and international collaborators.

➢ Participate actively in the implementation of the ICD 11. In particular, the Spanish version.

➢ Increase the participation of the WHO-FIC Committees and Reference Groups.

➢ Traditional Medicine conditions (ICD 11 chapter 26) is a new area of interest for the CC-BCN (Spain).

KOREA
WHO-FIC
NETWORK ANNUAL MEETING
2018

WHO-FIC Collaborating Centre in South Africa: 2018 Report

22-27 October 2018
Seoul, Republic of Korea

ID: 217

Lyn Hanmer[1], Debbie Bradshaw[1], Stefanus Snyman[1], Soraya Maart[2]

[1]South African Medical Research Council and WHO-FIC Collaborating Centre in South Africa; [2]University of Cape Town, South Africa

Abstract Colleagues associated with the WHO-FIC collaborating centre in South Africa are continuing their activities in support of the development and maintenance of the WHO-FIC internationally; in WHO-FIC network structures; in the development, implementation and use of ICD, ICHI and ICF in Southern Africa; and in support of strengthening civil registration and vital statistics (CRVS) in WHO-AFRO.

INTRODUCTION

As the only WHO-FIC collaborating centre in the WHO African region - hosted by the South African Medical Research Council in Cape Town - the centre supports the development, implementation and maintenance of the WHO-FIC across the region, and through the WHO-FIC network.

Strategic Workplan 2018-2020

Recently a Strategic Workplan 2018-2020 was developed and after wide consultation accepted by stakeholders.
Values: The WHO-FIC Regional Network for Africa shares the values of Equity, Excellence, Solidarity, Respect, Integrity, Ubuntu and Social respon-sibility.
Mission: To cooperate with the countries and other stakeholders in the WHO African region to develop and advance WHO-FIC.
Vision: Coordinate and share expe-riences, knowledge, and the production of scientific evidence on WHO-FIC to contribute to Universal Health Coverage and strong health infor-mation systems in the WHO African region.

OBJECTIVES 2018-2020:

Build an effective WHO-FIC Network in WHO African region

- ✓ The database was grown to 250 persons and organisations.
- ✓ 2 Stakeholder meetings took place (Cape Town and Pretoria). In 2019 one is planned for Nairobi
- ☞ Join our database: www.whofic.org.za.

Build strong international links with international and other WHO-FIC regional networks

- ✓ Dr Lyn Hanmer (Co-chairperson of the FDC and ICHI Task Team): Attended FDC midyear meeting in Geneva and ICHI meeting in Cologne
- ✓ Prof Soraya Maart (FDRG Voting member): Attended FDC midyear meeting (Geneva), FDRG Midyear meeting and 3rd Symposium: ICF Education in Hamburg
- ✓ Dr Stefanus Snyman (EIC voting member and FDRG member) attended the Midyear meetings and the ICF Education Symposium.

Stefanus Snyman presented a workshop on how to teach ICF to students. Here some of the workshop participants have some ICF fun.

Contribute to development and maintenance of member classifications of WHO-FIC aligned to needs of region

ICD-10 & ICD-11:
- ✓ The ongoing implementation and maintenance of ICD-10 for mortality and morbidity coding remain a core focus. Inputs to the further development of ICD-11 are essential to ensure that the classification meets regional needs.

ICHI:
- ✓ The successful development of ICHI is of relevance for South Africa, since the country does not currently have a national procedure coding standard. Accurate data on proce-dures is essential for the planned implementation of a National Health Insurance system, which is currently under way.
- ✓ The Healthcare Coding Unit (University of Witwatersrand) has participated in testing aspects of ICHI during preliminary testing phase (May – July 2018), and contributed to development of ICHI training manual.
- ✓ The collaborating centre has facilitated contact between National Department of Health, WHO and other WHO-FIC stakeholders, to provide information on ICHI and potential South African involvement in the planned testing of ICHI by WHO from 2019.

ICF:
- ✓ The completion of the FunctionMapper by the Finnish colleagues was celebrated. The English population of Function Mapper was completed in South Africa with a grant provided by the Cape Higher Education Consortium.

- ✓ We participated in the ICF Update process

.

Soraya Maart and John Baptiste Sagahutu presented at the 3rd International Symposium: ICF Education in Hamburg

Deliver educational resources for ICD, ICF, ICHI and Cause of Death Certification

- ✓ In partnership with the WHO-FIC collaborating centre in the Netherlands and ICanFunction Health (Pty) Ltd, a 3-month ICF Facilitator Training Course was initiated in Cape Town. The course comprises face-to-face meetings and online course work. Further face-to-face sessions are planned for 2019.
- ✓ A successful workshop was presented in Cape Town on how to use the ICF Update Platform

Keep WHO-FIC Network in Sub-Saharan Africa informed

UK WHO-FIC Collaborating Centre Annual Report 2018

Authors: Lynn Bracewell, Myer Glickman
UK WHO-FIC Collaborating Centre

22-27 October 2018
Seoul, Republic of Korea

ID: 218

Abstract   NHS Digital was designated a UK WHO-FIC Collaborating Centre in Jul-2014. This poster reports on the Collaborating Centre activities that took place since the last WHO-FIC Network meeting in 2017 through to Jun-2018.

Introduction

NHS Digital was designated a UK WHO-FIC Collaborating Centre in Jul-2014 – Jul-2018. Working closely with our partners at the Office for National Statistics (ONS) NHS Digital ensures the UK contributes to and is represented on WHO-FIC network committees as per our 2014-2018 work plan agreed with the WHO.
The Head of the UK WHO-FIC Collaborating Centre served as Co-Chair of the WHO Network Advisory Council and the Council's Small Executive Group and is nominated for a second term through to 2019.
NHS Digital website can be found at:
www.digital.nhs.uk
ONS website can be found at:
http://www.ons.gov.uk/ons

Support ICD implementation and updates (morbidity)

NHS Digital represents the UK on the Education and Implementation Committee (EIC) and took part in the EIC mid-year face-to-face meeting in Apr-2018, Hamburg. The UK Centre distributes the WHO ICD for UK purposes under licence via the Technology Reference data Update Distribution (TRUD) service:
https://isd.digital.nhs.uk/trud3/user/quest/group/0/home
to support national implementation. The Centre releases the WHO ICD-10 updates every 3 years and provides a clinical coding support and advisory service to the user community receiving an average of 40 queries each week. Our collaboration and sharing platform 'Delen' continues to go from strength to strength. There are currently over 29,000 unique users and c. 1000 user sessions per day:
https://hscic.kahootz.com/connect.ti/tc_home/groupHome
The platform provides essential information to user communities and provides us with valuable feedback through consultations, surveys, proposals for change to coding standards and dedicated collaboration workspaces. In Apr-2018 we delivered the annual updates to the National Clinical Coding Reference Book and national training materials.
NHS Digital delivered the Clinical Coding Trainer and Auditor Programmes; there are currently 205 Approved Auditors and 105 Approved Trainers.

Contribute to the development and maintenance of ICD-10 (morbidity)

NHS Digital participated as a voting member of the Update Reference Committee (URC), carrying out review and research activities to support this work and ensure expert clinician input where required from the UK. During 2017 and on behalf of the UK we submitted 12 ICD-10 requests for change and reviewed/commented on all international submissions during the two rounds of voting. Ten of our requests were accepted and 2 were withdrawn at the face-to-face meeting in October 2017. Under the new ICD governance structure NHS Digital provides a classification specialist as the UK voting/participating member of the newly formed Classification and Statistics Advisory Committee (CSAC).

Contribute to the revision of ICD-10 morbidity

Over the last 12 months NHS Digital has worked closely with the WHO to coordinate morbidity coding field trials across England, Northern Ireland, Wales and Scotland. We have conducted 2 rounds of trials in 2017 and 2018. The majority of participants worked at NHS Trusts and held national clinical coding qualifications. A broad spectrum of practice was represented. We used Delen to facilitate UK specific ICD-11 field trials during 2018. NHS Digital produced training materials consisting of an overview of ICD-11, WebEx sessions covering the use of the ICD-11 Browser/Coding Tool and instructions on how to use the ICD-FiT Platform. An overview of our findings have been published on Delen. Further NHS Digital participated in the Morbidity Reference Group and contributed to the revision of the Alphabetical Index.

Contribute national expertise to WHO Electronic Tools Development

NHS Digital has started liaison with NHS system suppliers about the ICD-11 API services facilitating an event between WHO and TechUK to raise awareness of ICD-11 and understand supplier requirements. We are contributing to the ITC Mapping Sub-Group teleconferences tasked to produce a White Paper on mapping approaches, methodology and best practice.

Contribute national expertise to ICD-10 maintenance (mortality)

ONS represents the UK on mortality matters and took part in the mid-year face-to-face meeting of the Mortality Reference Group (MRG) in Mar-2018 We have been active on ICD-11 in the past year in the context of the Eurostat Task Force on ICD-11 (chaired by Myer Glickman), but also through direct contact with WHO. We contributed to discussion of key development areas such as antimicrobial resistance. We provided samples of England and Wales data to the WHO technical team to help with testing the completeness of the classification and the working of the online coding index. Some of our expert coders are taking part in the online field trials. ONS attended a meeting of statistical stakeholders to review progress on ICD-11, held at WHO Geneva on 16-17 Apr-2018.

Develop/maintain international English coding dictionary for IRIS coding system (mortality)

ONS is now active as a Core Group member of the IRIS Consortium, which develops and manages the international standard software for coding causes of death in ICD-10. We are currently testing IRIS-MUSE v5.5 with a view to introduction in Jan 2019. This is expected to have benefits over previous versions including 90% plus auto-coding for common COD combinations, and better recording of infectious organisms. We are developing an experimental application to further improve auto-coding rates by language processing of complex cancer diagnoses. We took part in an OECD working group to develop a new international standard definition of avoidable (preventable or treatable) mortality which will report to the OECD Health Committee and the Eurostat Working Group on Public Health Statistics towards the end of 2018.

Acknowledgements or Notes

WHO Collaborating Centre for Classification, Terminologies and Standards at the University of Calgary

22-27 October 2018
Seoul, Republic of Korea

ID: 219

Authors: Danielle A Southern, Cathy A Eastwood, Hude Quan, William A Ghali

O'Brien Institute for Public Health, University of Calgary, Canada

Canadian WHO Collaborating Centre for Classification, Terminology and Standards Update

Activities

1. Development of Knowledge Base for ICD-11 and Other Members of the WHO Family of International Classifications

- WHO-CC members worked with the WHO-FIC Quality & Safety TAG to provide constructive edits and comments to a draft version of ICD 11 Reference Guide.

- We led this revision, provided tasks to Q&S TAG members, and then collated and summarized the results for WHO-FIC.

2. ICD-11 Field Trials

- We supported ICD-11 Q&S TAG members with Field Trial comparing ICD-11 coding to ICD-10-CA coded data – specifically including Q&S cases

- Provided training materials around Q&S use case and reference guide material

- Early stages of analysis which will produce recommendations for implementation, interpretation etc

- Characterize ICD-coded data collection & understand the quality of coder training internationally

3. Support the Quality and Safety work in the ICD revision process

- We wrote grant proposals for monetary support strategies to hold meetings for Q&S TAG.

- We provide operational support and content for meetings.

4. Strengthen the research work on Classifications, Terminologies & Standards and its integration in the WHO FIC Network

- We are working on an ICD-algorithm dictionary through IMECCHI (International Methodology Consortium for Coded Health Information) which will be openly available to researchers.

- We collaborate with Canadian Institute for Health Information (CIHI) through ICD-11 Field Trial work, Q&S TAG work, and with local research groups (APPROACH.org coronary definition validations).

- Attended Heath Canada Forum collaborating centre networking event

- We held 1 Q&S TAG meeting in NYC
- Hosted Morbidity Reference Group mid-year meeting in Banff & additional meeting in Calgary to update on field trial work

- We are promoting international linkage beyond WHO-CC (attendance at upcoming international data linkage (www.ihdl.org) in September 2018.

Future Work

- Collaborative field trial with AHRQ looking at structure of QSRS system compared to ICD-11 for capturing patient safety incidents

- Collaborative grant application to AHRQ investigating ICD-10-CM clustering and ICD-11 quality and safety use case

- Knowledge translation activities in collaboration with CIHI regarding implementation & use of ICD-11

- Hosting of WHOfic annual meeting in Banff, Canada in 2019

Acknowledgements or Notes

Canadian WHO-CC for Classification, Terminology & Standards Head: Dr. Hude Quan

WHO-CC is supported by the O'Brien Institute for Public Health at the University of Calgary

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O'Brien Institute for Public Health

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Applying Semantic Technologies
to WHO Classifications
(WHO CTS Collaborating Centre at Stanford)

Samson W. Tu, Csongor Nyulas, Tania Tudorache, Mark A. Musen
Stanford Center for Biomedical Informatics Research, Stanford University, CA 94305 USA

Abstract The Stanford Collaborating Centre (CC) had been re-designated as a WHO Collaborating Centre for 2018 – 2022. As part of its work plan, we propose to extend the current ICD-11 Content Model (already modeled in the Web Ontology Language (OWL) 1.0) to use current Semantic Web standards. We will generalize the Content Model so that ICD, ICF, and ICHI can be represented in a common modeling framework, upon which a shared Foundation Component can be built. We continue to maintain and enhance iCAT, the editing environment for ICD-11. Furthermore, as an additional contribution, the Stanford CC is coordinating the drafting of a white paper on terminology mapping.

Introduction

The Stanford University WHO CC has the mission to provide support for the development, maintenance, and implementation of infrastructure to author and manage WHO classifications and their associated terminologies. To fulfill this mission our Center is working on the use of semantic web technologies to develop a common modeling framework and associated software tools for developing and maintaining WHO classifications. The modeling framework consists of a formal content model, specified in the Web Ontology Language (OWL), that defines the properties of entities in a classification and that drives the development of editing software tools, such as the web-based iCAT authoring tool. Our work promises that all WHO-FIC classifications can be modeled and maintained in a consistent framework, using the most up-to-date semantic web technology, where they share common content model parameters and value sets, where they use similar editing tools, and where any classification can use entities from other classifications as a source for value sets.

Methods & Materials

As a part of the The Stanford University WHO CC's application for re-designation as a WHO CC for 2018-2022, we proposed a set of activities including (1) advising WHO on terminologies and standards, including the evolution of the ICD-11 content model; (2) hosting and maintaining iCAT server on Stanford facilities; (3) enhancing the ICD-11 Content Model and iCAT; (4) assisting in the development of terminology mapping methodology; (5) developing a new version of the ICD-11 Content Model in terms of current Semantic Web standards; (6) developing a generalized Content Model that is applicable to ICD, ICF, and ICHI. We will research the applicability of OWL 2 and Shape Constraint Language (SHACL) for formalizing the ICD-11 Content Model and iteratively prototype and refine a generalized Content Model for all WHO classifications.

Results

For the past year, we had made the following enhancements to iCAT:
- We enhanced the Content Model by adding support for coding notes, definition of "auxillary axis child," and the new Small Mortality List (SMoL).
- We extended iCAT to operationalize the enhanced Content Model, added new severity scales, updated the "Logical Definitions" tab to include value selector widgets for missing post-coordination axes (e.g., types of injury, fracture type, burn qualifier, and genomic and chromosomal anomaly)
- We created a "Logical Definitions" tab for External Causes of Morbidity and Mortality chapter.

For the white paper on terminology mapping, we developed a template for describing important case studies of terminology mappings such as those from clinical terminologies to ICD. We conducted a literature review of terminology mappings, identifying 105 out of 1143 PubMed candidates for inclusion in the review and abstracting their use cases and methodologies in a spreadsheet for analysis and synthesis. Members of the workgroup contributed case studies of important mappings (such as mappings from SNOMED CT to ICD-10).

Building on the work Stanford CC had done in the past on the ICD-11 Content Model and candidate content models for ICTM, ICPS, and ICHI, we have extracted a prototype common Content Model that provides a foundation for unifying the description of WHO classifications while allowing specific extensions as required by the individual classifications. The prototype Content Model posits that all entities in WHO classifications have multilingual titles, definitions, fully specified names, synonyms, and index terms. They may have inclusions and exclusions and will be defined in a shared Foundation Component from which specific linearizations for different purposes will be generated. All entities share a common post-coordination model defined by a collection of post-coordination axes, values sets, and sanctioning rules that specify axes and value sets that are appropriate for different types of entities.

Discussion

The success of the ICD-11 revision process demonstrated that the modeling and editing infrastructure that the Stanford CC had provided is viable and can be the basis for extending the paradigm to other WHO classifications. At the same time, new semantic web standards, such as OWL 2 and SHACL, had been defined since the original implementation of the ICD-11 Content Model and the iCAT software. Migration to the new standards requires research into how the new standards can be applied to satisfy WHO requirements and how the current infrastructure can be upgraded.

The four-year workplan seeks to strike a balance between providing services and support for WHO's on-going activities to develop, revise, and publish standards for health information and engaging in research to develop the models and tools for the next-generation informatics infrastructure of WHO classifications. This work will require extensive collaboration from the WHO-FIC community as we solicit the requirements for the generalized Content Model and seek feedbacks for the early prototypes.

The unification of WHO classifications in a common modeling framework and a shared Foundation Component is the long-term vision of many in the WHO-FIC community. The work of the Stanford CC seeks to explore and prototype such a modeling framework. The goals of this work are to stimulate interest and discussion on this vision and to define a possible roadmap for future work. It will be up to the WHO-FIC community to adopt this vision as a goal and to marshal the necessary resources for its realization.

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

ID	Title	Authors
301	Economic Evaluation of ICD Transitions in Canada	Shahreen Khair, Mingshan Lu, Cathy A. Eastwood, Chelsea Doktorchik, Hude Quan
302	Roadmap of actions on the ICD current needs and ICD-11 implementation in the Region of the Americas	Gawryszewski V, Soliz P, Cox, A
303	ICD-11- Post-Coordination "Acceptable Uses"	Denise Cullen, Kristy Mabon, Lisa Burelle
304	Main Condition Coding Agreement: Comparing ICD-10 and ICD-11 Codes from Inpatient Records	Chelsea Doktorchik, Danielle A. Southern, Cathy A. Eastwood, William A. Ghali, Hude Quan
305	ICD-11's Supplementary section for functioning assessment and its application in hand surgery - Results of the German ICD-11 field testing	Angelika Eisele1, Michaela Coenen1, Sandra Kus1, Caroline Dereskewitz2
306	Joint use of WHO's classifications: treatment and reporting standards in persons with fractures of the fingers as a demonstration example	Michaela Coenen1,2, Sandra Kus1,2, Klaus-Dieter Rudolf3, Caroline Dereskewitz3
307	Morbidity coding in ICD-11 (and ICHI): a decision tree to identify the main condition	Zavaroni C., Fanzutto A., Nardo E., Della Mea V. , Frattura L.

308-316

Economic Evaluation of ICD Transitions in Canada

Authors: Shahreen Khair, Mingshan Lu, Cathy A. Eastwood, Chelsea Doktorchik, Hude Quan
Canadian WHO Collaborating Centre for Classification, Terminology and Standards
Calgary, Canada

Abstract This project aims to develop the methodology to estimate the costs and benefits of ICD transition in Canada. We developed a conceptual framework for impact analysis for ICD transition in Canada. Using the ICD-9 to ICD-10 transition in Alberta as a case study, we developed the cost estimation framework for ICD transition.

Introduction

ICD-11 is scheduled to be released and ready for adoption in 2018. To inform decisions about whether to adopt ICD-11, as well as to plan for implementation if they do decide to adopt it, WHO member countries, including Canada, will need to assess the value and impact of doing so or not doing so. This project aims to develop a methodology to estimate the costs and benefits of implementing ICD-11 in Canada.

Methods & Materials

Cost estimation framework. As shown in Figure 1, we classify costs of ICD transition into three categories:
• costs of re-training
• productivity losses
• costs of system changes

To inform on the ICD 11 cost estimation methods, we use the ICD 9-10 Business Case results.

ICD 9 to ICD-10 Transition Cost Estimation for Calgary Health Region

ICD-10-CA/CCI Training Requirements

	Student Count	Days of Effort	Average Cost	Total Cost
Health Record Trainers	4	60	$995	$14,500
Health Record Staff & Data Analysts	79	711	$810	$240,680
Other Users	306	306	$510	$45,900
Project Management and Administration Costs				$15,060
Training Facility Costs				$5,850
Customized "Windows" Training Costs	79	6		$2,625
GRAND TOTAL				$324,615

Impact on Productivity and Space Requirement Cost Estimates

IMPACT	COST
Cost of productivity on Coding Services	$392,320
Space Impact on Corporate Data	$69,040
GRAND TOTAL	$461,360

Calgary Health Region Costs and Efforts Estimates

IMPACT	COST
Impacted IT Application Estimates	$3,735,406
Calgary Health Region Detailed Training Estimates	$324,615
Impact on Short Term Productivity & Space Impacts	$461,360
GRAND TOTAL	$4,521,381

Reference: ICD-10-CA/CCI BUSINESS CASE (Rep.). (2001, September 18).

ICD Transition Impact Analysis: A Conceptual Framework
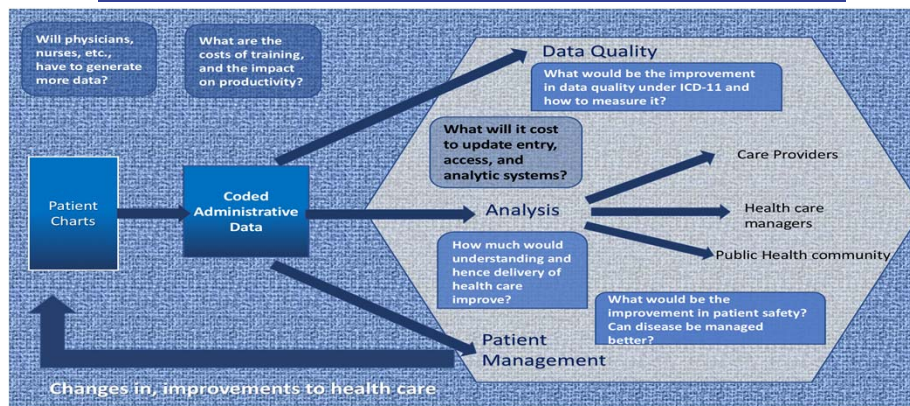
Figure 1: ICD Transition Cost Estimation Framework
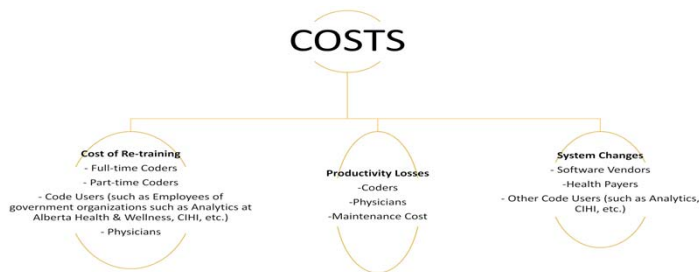
Costs of re-training. Cost of re-training could be calculated based on number of people who need to be re-trained, time it requires to re-train them, and hourly wage in each category.

Productivity losses. Both short-term and long-term productivity losses will be estimated, considering break-in period of three to six months. (Break-in period refers to the transition period after ICD-11 is implemented, including intensive training and learning period for all users.) Data, such as number of hospital discharge patients per month and extra coder hours required during the break-in period, will be needed to estimate total cost due to productivity losses.

Costs of System Changes. Costs of system changes for switching to ICD-11 will be estimated based on sampling software vendors, health payers (if applicable), and other code users in each province.

Figure 2: ICD Transition Cost Estimation Items and Variables

Conclusion

Our next step is to apply these frameworks to collect data to project the costs and benefits of ICD-10 to ICD-11 transition in Canada, as well as to provide recommendations on data collection to support economic evaluations of ICD transitions.

Acknowledgements

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Roadmap of actions on the ICD current needs and ICD-11 implementation in the Region of the Americas

22-27 October 2018
Seoul, Republic of Korea

ID: 302

Authors: Gawryszewski V, Soliz P, Cox, A
Pan American Health Organization, ² World Health Organization

Abstract   The Health Analysis, Metrics and Evidence (EIH/HA), as the PAHO Unit responsible for strengthening the use of the ICD in the Region of the Americas, has been coordinating the participation of several countries in the activities related to the preparation of the ICD-11. This work has been done in collaboration with WHO. In 2017, a road map was developed with the participation of 19 countries to provide countries with a planning tool to guide activities related to the current needs of ICD-10 and the requirements for the transition and implementation of ICD-11. Activities were established according five priority areas: 1) Completion of the translation of ICD-11 version for implementation; 2) Capacity building; 3) Information technology infrastructure; 4) Ensure comparability and quality of statistics; 5) Advocacy and dissemination.

Introduction

The EIH/HA Unit has been collaborating with WHO and coordinating the participation of several countries of the Region in the activities related to the preparation of the ICD-11, particularly the collaborative translation into Spanish and pilot testing in English and Spanish. The years before and after of the launch of a new classification generate considerable of work due to the time of preparation and implementation for use by the health professionals in the countries. Activities should be developed at different levels: global, regional and national to ensure health statistics comparability between ICD-10 and ICD-11.

In 2017, the EIH/HA Unit, in collaboration with WHO, carried out a self-assessment to identify the current needs of ICD and the requirements for the transition from ICD-10 to ICD-11 in the country and a Regional workshop in September, in Bogota, Colombia, whit the participation of 19 Member States. As a result of this meeting, this road map was developed to provide countries with a planning tool to guide activities related to the current needs of ICD-10 and the requirements for the transition and implementation of ICD-11.

Road map activities

Priority area 1: Completion of the ICD-11 version for implementation
Finalize the translation of the Classification, tools and materials developed in the official languages of the Region
Carry out manual coding and transcription tests on computer systems in order to make the necessary adjustments.

Priority area 2: Capacity building
Evaluate the ICD coding capacity in the country
Develop training programs according to different profiles (coders, staff, systems, researchers, etc.)
Train the national team to implement ICD-10 updates up till 2016
Participate in the ICD-11 field testing
Provide training in the use of ICD-11 and its tools. Levels: medical information coding instructors, coders, statisticians, analysts and public health experts
Provide training in the use of computer tools to coders, statisticians and other key personnel
Provide training in the use and implementation of IRIS Automated coding system for causes of death
Provide training for mortality and morbidity data analysis and of the quality of the information
Evaluate the impact of training activities for coders, physicians and other personnel on quality indicators
Develop a coder profile and certification

Road map activities

Priority area 3: Information technology infrastructure
Carry out a technology needs assessment
Promote the priority of having appropriate computer tools (PC and realible internet access)
Integrate IT personnel into the transition team for developing a integral transition plan
Adjust national information systems (and subsystems) for the implementation of ICD-11: revision, updating of catalogs and variables, etc.
Explore the interoperability between the ICD-11 coding application and national health systems
Promote the development of tools and applications for coding and using ICD-11, off-line and for mobile devices
Pilot testing of ICD-11 on-line and off-line versions
Implement IRIS Automated coding system for causes of death
Adapt the current information system to avoid unnecessary changes

Priority area 5: Advocacy and dissemination
Create and strengthen committees, councils or inter-institutional centers (Health, Statistics, Social Security and Civil Registry), health information
Integrate professional associations, colleges, universities, doctors and other sectors into national commissions to implement training and analysis activities
Raise awareness of the importance of the correct use of classifications for different users and environments
Develop a transition and implementation plan for ICD-10 to ICD-11 aligned with the country's health information improvement plan
Make international agreements to the highest level of health authorities (resolution at the World Health Assembly) for the implementation of ICE-11 in the countries
Establish mechanisms with WHO for countries can count on sufficient ICD-11 printed volumes.
Develop appealing materials in different formats and use social networks to disseminate ICD-11 innovations

Conclusions

The Roadmap is envisioned as a living-document to be revised and adjusted according to national needs and resources. In addition, countries in the Americas want to contribute and participate in the global road map for ICD-11 implementation.

ICD-11
Post-Coordination "Acceptable Uses"

22-27 October 2018
Seoul, Republic of Korea

ID: 303

Authors: Denise Cullen, Kristy Mabon, Lisa Burelle
Canadian Institute for Health Information, Canada

Abstract   The Canadian Institute for Health Information (CIHI) has been participating in field trials and development of the ICD-11 Reference Guide. CIHI compared and analysed application of post-coordination and clustering. The results demonstrated that there was a low rate of agreement amongst CIHI classification specialists. Therefore, CIHI refined the ambiguous terms and developed and tested "acceptable uses" for application of post-coordination.

Introduction

CIHI is an independent, not-for-profit organization that provides essential information on Canada's health system and the health of Canadians. CIHI maintains the Canadian modification of ICD-10 (ICD-10-CA) and is part of the North American Collaborating Centre. In an effort to assess the consistency, accuracy and usability of ICD-11 for Mortality and Morbidity Statistics (MMS), the World Health Organization (WHO) invited representatives from many WHO-FIC Collaborating Centres, including CIHI, to participate in ICD-11 Field Trials. One of the new features of ICD-11 is "post-coordination and cluster coding," which can be applied more broadly and is more extensive than Canada's current use of diagnosis clusters. It became apparent during the field trials and while contributing to the development of the reference guide that users were struggling with when to use post-coordination. The WHO definition of post-coordination in the draft version of the reference guide included ambiguous terms, which led to various interpretations. Therefore, CIHI undertook an internal project to determine whether refining the ambiguous terms would increase agreement among CIHI classification specialists.

Methods & Materials

The ambiguous terms were expanded to clarify the intended meaning (see Acceptable uses of post-coordination). 10 CIHI classification specialists were designated to work on the project. The acceptable uses were explained and specific instructions were provided. The 10 CIHI classification specialists used the ICD-11 Mortality and Morbidity Statistics coding tool to code 155 examples and apply the acceptable uses. The examples were clinically relevant cases, selected from various sources (e.g., coding standards, coding questions, ICD-11 Reference Guide).

Results

The post-coordination agreement rate amongst CIHI classification specialists was compared with the results of previous ICD-11 coding field trials. Prior to developing the acceptable uses, the agreement rate was less than 50%; after, the agreement rate was 82% (see the table and Figure 1). Note that an acceptable agreement rate for the purpose of this activity was that at least 8 of 10 CIHI classification specialists agreed to post-coordinate or not post-coordinate (see Figure 2).

Table   Number of examples by percentage in agreement

Percentage in agreement	Number of examples	Percentage of examples	Number >80%	Percentage >80%
100%	76	49.03%		
90%	32	20.65%	127	81.94%
80%	19	12.26%		
70%	11	7.10%		
60%	8	5.16%		
50%	9	5.81%		
Total	155	100.00%		

Figure 1   Number of examples by percentage in agreement
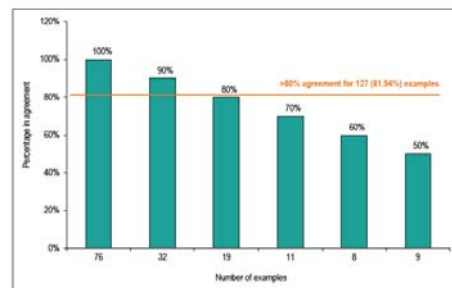
Figure 2   Agreement to post-coordinate versus to not post-coordinate
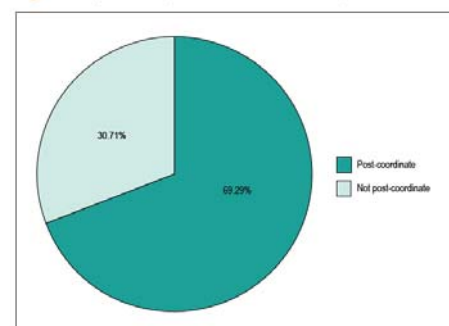
Note
There was greater than 80% agreement for 127 examples (81.94%). Of the 127 examples, there was agreement to post-coordinate 88 (69.29%) and to not post-coordinate 39 (30.71%).

Acceptable uses of post-coordination

1.
 a. Multiple codes to fully describe a **single diagnosis/condition**
    i.e., add additional detail/specificity to stem code using another stem code from a body system chapter (e.g., bleeding duodenal ulcer — stem code/stem code)

 b. Multiple codes to fully describe a **single diagnosis/condition**
    i.e., add additional detail to a stem code using optional extension code
    Note: An extension code cannot stand alone; it always requires post-coordination.

 c. Multiple codes to fully describe an **event**
    i.e., link a single injury of one type to an external cause of injury or multiple injuries of the same type (e.g., all fractures, all contusions, all lacerations) to the same external cause of injury

 d. Multiple codes to fully describe an **event**
    i.e., apply 3-part harm model:
    Harm to patient — What was the main consequence to the patient?
    Cause or source of harm — What caused the harm?
    Mode or mechanism — In what way or how did the source of harm actually produce the harm?

2. Clinical documentation describes 2 or more diagnoses/conditions as having a causal relationship
   e.g., a single diagnostic statement describes a causal relationship using language such as "due to," "secondary to," "caused by," etc.

3. Clinical documentation describes 1 or more diagnoses/conditions as an obvious consequence of the other

4. Specific circumstances to post-coordinate more than one documented diagnosis/condition
   a. Certain manifestations of human immunodeficiency virus (HIV) disease (e.g., HIV disease and Kaposi sarcoma)

Conclusions

Refining the ambiguous terms used in the definition of post-coordination added clarity and led to consistent application of post-coordination. These findings and suggestions to clarify the use of post-coordination were informally shared with WHO, and changes to the definition of post-coordination are reflected in the most recent draft of the ICD-11 Reference Guide.

Acknowledgements or Notes

Thanks is extended to Kristy Mabon who developed the "acceptable uses" definitions and led the team through this project; to the 10 CIHI classification specialists who coded the 155 cases, applying the definitions: Alicia Boxill, Elena Valente, Isabelle Roberge, Josée Migneault, Karen Coghlan, Kristy Mabon, Lisa Burelle, Margaret Penchoff, Natalie Fay and Sanjin Sabljakovic; and, to Margaret Penchoff who created the graphs.

Main Condition Coding Agreement: Comparing ICD-10 and ICD-11 Codes from Inpatient Records

22-27 October 2018
Seoul, Republic of Korea

ID: 304

Authors: Chelsea Doktorchik, Danielle A. Southern, Cathy A. Eastwood, William A. Ghali, Hude Quan

Canadian WHO Collaborating Centre for Classification, Terminology and Standards

Calgary, Canada

Abstract This study is part of a large-scale **ICD-11 field trial** to test the 'goodness of fit' of ICD-11.

Objective: To assess the agreement between two coders in identification of main conditions from full inpatient records. Preliminary results for comparing ICD-10 and ICD-11 codes reveal 79% agreement for *main condition*.

Introduction

- The International Classification of Disease (ICD) is used to classify and categorize health information around the world[1]. It is used to report mortality, incidence and prevalence of diseases, and analyze the health of populations (Figure 1).

- "Main condition" is the primary reason a person presents for a hospital visit. The coding definitions in the International Classification of Disease (ICD) 10th and 11th versions are broadly defined, and coding health data can involve subjective coding specialist interpretation.

- Our study aims to inform ICD-11 development and revisions.

- *We compared main condition coding agreement between ICD-10 and ICD-11, to understand and reduce inconsistencies in coding of health information.*

Methods

- 730 hospital charts were randomly sampled from Foothills Medical Centre in Calgary, Canada.
- These charts were previously coded using ICD-10, and six professional coding specialists recoded them using ICD-11. Coders underwent rigorous training in the new ICD-11 coding practices.
- Frequencies of ICD-10 to ICD-11 codes were compared, using current WHO crosswalk tables to match codes.
- For any missing codes, manual comparison was done by a reviewer with clinical experience.
- In Canada, the "main condition" is the clinically significant reason for the hospital visit.

- **In Canada, if multiple problems were present, "main condition" is the diagnosis using the greatest amount of resources and longest portion of the length of stay ("main resource use").**

Results

- Of the 730 ICD-10 coded charts, 79% (577) had matching main resource coding between ICD-10 and ICD-11, and 21% (153) had mismatching coding (Figure 2).

- *Matching codes were considered:*
1) an exact match between definitions (23.2%, 134), or
2) similar but not identical (often one code has greater detail, 76.8%, 443).

- *Mismatched codes were due to:*
1) different codes for similar conditions (13.1%, 20)
2) different codes for not similar but related conditions (43.8%, 67) or
3) completely different codes for unrelated conditions (43.1%, 66).

Figure 1. Main Condition Coding

730 ICD10 Coded charts

577 with Matching Main Condition in ICD11 (79.0%)

134 (23.2%)
Exact match of main condition

443 (76.8%)
Coders recorded codes for similar but not identical condition, often one coder is more specific than the other
e.g. Acute transmural myocardial infarction of inferior wall vs. Acute ST elevation myocardial infarction & Inferior wall of heart & Left obtuse marginal artery

153 with mismatched Main Condition in ICD11 (21.0%)

20 (13.1%)
Coders recorded obviously different codes for similar conditions.
e.g. Follow-up care involving plastic surgery of breast vs. Prophylactic surgery & Breast & Bilateral

67 (43.8%)
Coders recorded codes for conditions which were not similar but obviously related conditions.
e.g. Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries vs. Other specified disorders of muscles & Lower Extremity & Left/Late effects of cerebral ischemic stroke

66 (43.1%)
Coders recorded completely different conditions.
e.g. Atrial fibrillation and atrial flutter, unspecified vs. Congestive heart failure, unspecified

Conclusions

- The ICD-10 and ICD-11 main resource codes had a high match frequency indicating consistency between coding practices and ICD definitions (577/730, 79%).
- Future research will be conducted to understand underlying causes of mismatched main resource use codes between ICD-10 and ICD-11. This research will help us understand issues in coding and contribute to future ICD-11 revisions.

References, Acknowledgements

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KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

ICD-11's Supplementary section for functioning assessment and its application in hand surgery - Results of the German ICD-11 field testing

22-27 October 2018
Seoul, Republic of Korea

ID: 305

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Abstract   The aim of this poster is to report on a field-test and more specifically a mapping exercise of routine data on functioning in patients with hand injuries and disorders to the *Supplementary section for functioning assessment* (Section V) of the 11th Revision of the International Classification of Diseases (ICD-11). In a single centre study, we collected functioning-related data of 100 patients. Data were documented by physicians and a nurse using their routine documentation. Data collection was guided by the International Classification of Functioning, Disability and Health (ICF) Core Sets for Hand Conditions and the ICF Rehabilitation Set (ICF Generic-30 Set). Data were mapped against the codes provided in ICD-11's Section V. The mapping results as well as descriptive analyses of the collected data are presented.

Introduction

Patients with hand injuries and disorders report problems in functioning covering all ICF functioning domains. The newly released 11th revision of the International Classification of Diseases (ICD-11) with its *Supplementary section for functioning assessment* (Section V) enables the joint use of ICD and ICF. The aim of this study was to field-test ICD-11's Section V using routine data on functioning in patients with hand injuries and disorders.

Methods & Materials

In a single centre study, physicians and a study nurse independently appraised patients' functioning based on clinical routine documentation using a rating sheet containing the 30 categories of the ICF Rehabilitation Set (ICF Generic-30 Set) complemented by eight categories of the Brief ICF Core Set for Hand Conditions (14 Body Functions; 24 Activities and Participation (A&P)). For each ICF category they rated whether a patient had no problem, a mild, moderate or severe problem, or decided whether the extent of the problem was unknown or the available routine information was insufficient for rating a category. These categories were then mapped to ICD-11's Section V codes. Descriptive analyses of the data was conducted.

Results

Table 1 shows the mapping of the ICF categories with the corresponding Section V codes. In figures 1 and 2, we present the physicians' and the nurse's appraisal of patients' functioning for the 10 categories with the highest number of problems reported. For four matches (d710/VC50, d770/VA34, b620/VB90 and b640/VB91) both, physicians and the nurse indicated that for the majority of cases the available routine information was insufficient for rating the categories.
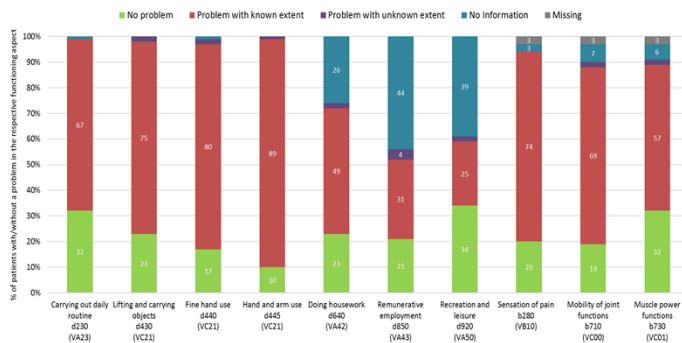
Fig. 1: TOP 10 physicians' appraisal of patients' functioning (n=100).

Results - continued
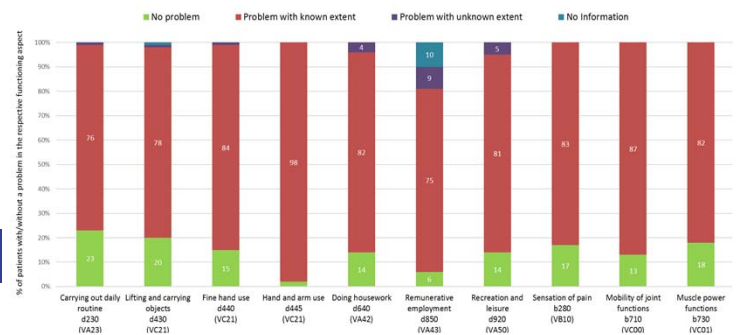
Fig. 2: TOP 10 nurse's appraisal of patients' functioning (n=100).

ICF code	ICF title	ICD-11 code	ICD-11 title
b130	Energy and drive functions	VB00	Energy and drive functions
b134	Sleep functions	VB01	Sleep functions
b152	Emotional functions	VB02	Emotional functions
b265	Touch function*	VB40.Y	Other specified generic functioning domains
b270	Sensory functions related to temperature and other stimuli*	VB40.Y	Other specified generic functioning domains
b280	Sensation of pain	VB10	Sensation of pain
b455	Exercise tolerance functions	VB70	Exercise tolerance functions
b620	Urination functions	VB90	Urination functions
b640	Sexual functions	VB91	Sexual functions
b710	Mobility of joint functions	VC00	Mobility of joint functions
b715	Stability of joint functions*	VB40.Y	Other specified generic functioning domains
b730	Muscle power functions	VC01	Muscle power functions
b760	Control of voluntary movement functions*	VB40.Y	Other specified generic functioning domains
b810	Protective functions of the skin*	VB40.5	Functions of the skin and related structures
d230	Carrying out daily routine	VA23	Carrying out daily routine
d240	Handling stress and other psychological demands	VC10	Handling stress and other psychological demands
d410	Changing basic body position	VA11	Changing body position - standing
d415	Maintaining a body position	VA10	Maintaining a standing position
d420	Transferring oneself	VC20	Transferring oneself
d430	Lifting and carrying objects*	VC21	Carrying, moving and handling objects
d440	Fine hand use*	VC21	Carrying, moving and handling objects
d445	Hand and arm use*	VC21	Carrying, moving and handling objects
d450	Walking	VA14	Walking
d455	Moving around	VA1Y	Other specified mobility
d465	Moving around using equipment	VC22	Moving around using equipment
d470	Using transportation	VC23	Using transportation
d510	Washing oneself	VA20	Washing oneself
d520	Caring for body parts	VC30	Caring for body parts
d530	Toileting	VC31	Toileting
d540	Dressing	VA21	Dressing
d550	Eating	VA22	Eating
d570	Looking after one's health	VC32	Looking after one's health
d640	Doing housework	VA42	Doing housework
d660	Assisting others	VC41	Assisting others
d710	Basic interpersonal interactions	VC50	Basic interpersonal interactions
d770	Intimate relationships	VA34	Intimate relationships
d850	Remunerative employment	VA43	Remunerative employment
d920	Recreation and leisure	VA50	Recreation and leisure

*ICF categories additionally derived from the Brief ICF Core Set for Hand Conditions.

Tab. 1: ICF categories and corresponding ICD-11 codes.

Conclusion

All ICF categories considered could be mapped to ICD-11's Section V. Important limitations and restrictions in A&P and impairments in Body Functions could thus be coded using ICD-11 codes. However, specific codes for "Lifting and carrying objects", "Fine hand use" and "Hand and arm use" are not provided in ICD-11. The majority of our sample had problems in these functioning aspects.

Acknowledgement

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Joint use of WHO's classifications: treatment and reporting standards in persons with fractures of the fingers as a demonstration example

22-27 October 2018
Seoul, Republic of Korea

ID: 306

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on behalf of the Lighthouse Project Hand Consortium

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Abstract   This poster shows the joint use of WHO's family of international classifications – International Classification of Diseases, 11th Revision (ICD-11), International Classification of Functioning, Disability and Health (ICF) and International Classification of Health Interventions (ICHI). In the scope of the Lighthouse Project Hand we developed treatment and reporting standards based on the Brief ICF Core Set for Hand Conditions for six injuries and diseases of the hand. As a demonstration example, we used the treatment and reporting standard for fractures of the fingers and mapped its content to ICD-11, including the *Supplementary section for functioning assessment* (Section V), the ICF and ICHI to show the joint use of these WHO classifications and their application for the standardized reporting and data handling.

Introduction

The World Health Organization released the 11th Revision of the International Classification of Diseases (ICD-11) for Mortality and Morbidity Statistic (MMS) on June 18th 2018. With the implementation of ICD-11, the joint use of ICD and the International Classification of Functioning, Disability and Health (ICF) is further promoted (Selb et al., 2015). In the future, restrictions and limitations in functioning and potential impairments, can be coded using ICD-11's *Supplementary section for functioning assessment* (Section V).

Another WHO classification that can be used jointly with ICD and ICF is the International Classification of Health Interventions (ICHI), a classification for coding health-related interventions. ICHI is structured according to ICF's components and organizes intervention aims according to the domains of the ICF.

Methods & Materials

In the scope of the Lighthouse Project Hand a treatment and reporting standard for fractures of the fingers was developed based on the Brief ICF Core Set for Hand Conditions. The standard provides time points for the assessment of functioning and indicates interventions to be applied for a certain impairment, limitation or restriction of functioning.

We used the treatment and reporting standard for fractures of the fingers and mapped its content to ICD-11 MMS, including Section V, the ICF and ICHI to show the joint use of the classifications and their application for the standardized reporting and data handling; for example:

- **Diagnosis**:
  ICD-11 (e.g. NC59.1&XK9K; traumatic amputation of other single finger, right)
- **Functioning:**
  ICF (e.g. b710 Mobility of joint functions)
  ICD-11 Section V (e.g. VC00 Mobility of joint functions)
- **Intervention:**
  ICHI (e.g. MGJ PB ZZ Mobilization of joint of hand or finger)

ICD-11

ICF International Classification of Functioning, Disability, and Health

ICHI International Classification of Health Interventions
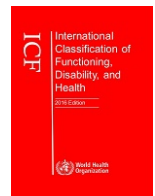
Results

Mapping the content of the treatment and reporting standard for fractures of the fingers to the WHO's classifications ICD-11 including Section V - *Supplementary section for functioning assessment*, ICF and ICHI is possible. Table 1 exemplarily illustrates the standard's content and its mapping to these WHO classifications.

Phases of care	Area	Classification	Content of treatment standard	Code	Description/title
Acute care	Diagnostics - admission	ICHI	X-ray imaging in two planes	MGB.BA.BA	X-ray of hand
	Diagnosis	ICD-11 Section V	Fracture of middle phalanx of little finger, right, with fracture extending into joint	NC53.63&XK9K&XA6HX0&XJ5GS	
				- NC53.63	- Fracture of little finger
				- XK9K	- Right
				- XA6HX0	- Middle phalanx of little finger
				- XJ5GS	- Fracture extends into joint
	Acute treatment	ICHI	Open reduction	MGJ.LD.AA	Open reduction of finger or hand joint
			Plate osteosynthesis	MGJ.LE.AA	Fusion of finger or hand joint
			Intra-operative x-ray imaging	MGB.BA.BA	X-ray of hand
Aftercare	Post treatment		Immobilization with finger splint	MGJ.LC.AH	Application of external immobilization device, finger or hand joint
		ICF / ICD-11 Section V	Swelling	VB40.Y	Other specified generic functioning domains
			Joint mobility	b710 / VC00	Mobility of joint functions
			Pain	b28014 / VB10	Pain in upper limb
			Fine hand use	d440 / VC21	Fine hand use
	Rehabilitative treatment	ICHI	Passive mobilization	MGJ.PB.ZZ	Mobilization of joint of hand or finger
			Pain reduction	AXA.DB.AC	Oral and enteral medication for pain
			ADL-training	SIG.PH.ZZ	Training in fine hand use

Table 1: Content of the treatment and reporting standard for fractures of the fingers and its mapping to the WHOs' classifications.

Conclusion

This poster confirms the feasibility of jointly using ICD-11, ICF and ICHI in a meaningful way. It also shows that using the ICF in addition to ICD-11's Section V is essential to comprehensively reflect a patient's functioning (see Aftercare in table 1). Further demonstration projects can show possible utility of jointly using these classifications in different use cases, e.g. case mix modelling.

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Acknowledgements or Notes

Morbidity coding in ICD-11 (and ICHI): a decision tree to identify the main condition

22-27 October 2018
Seoul, Republic of Korea

ID: 307

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Abstract In the health field, at the scientific and organizational level, the need has emerged to provide a decision tree to support the decision-making process of morbidity coders. The study goal was focused on the organisation of the available WHO rules for morbidity coding of the main condition in computer algorithms.

Introduction

In the health field, the correct detection and coding of morbidity data are essential at the epidemiological, planning, organizational and funding levels.
A decision tree was created to develop a support service for the codification of hospital discharge records in the context of the SISCO-web Project, funded by the Friuli Venezia Giulia Region and coordinated by Gorizia Local Health Autority, and carried out with the collaboration of the Italian National Research Council, the Bruno Kessler Foundation and the University of Udine.

Methods & Materials

We considered:
a) ICD-10 rules and guidelines for morbidity coding, while waiting for other rules;
b) definition of the main condition "as the condition, diagnosed at the end of the episode of health care, primarily responsible for the patient's need for treatment or investigation";
c) grouping of interventions and procedures in three sets:
  • "relevant surgery", i.e. interventions or procedures that typically involve the use of an operating room or a hybrid operating room, or interventions or procedures that, while not normally requiring the use of the operating room, present an estimated level of resources consumption comparable to operating room costs;
  • "selected non-relevant surgical interventions", i.e. interventions or procedures, other than relevant surgery, that require significant absorption of resources, mostly superior to the non-surgical treatment of a condition;
  • "residual non-relevant surgical interventions", i.e. interventions or procedures, other than relevant surgery and selected non-relevant surgical interventions, that require an absorption of resources usually lower than that of the non-surgical treatment of a condition;
d) distinguishing the conditions treated or investigated in a set and a subset:
  • "condition" refers to all conditions: diseases, clinical manifestations or normal physiological changes (e.g. such as "Single spontaneous delivery" or "Maternal care related to multiple gestation");
  • "pathological condition" refers to abnormal anatomy or functioning that configures diseases.
The third group of interventions and procedures is not considered as a possible choice to direct the decision-making process for morbidity identification of the main condition. We developed Health Information Technology rules, partially automatized.

Results

The problem-solving steps concerned the identification of the main condition treated or investigated during the relevant episode of care, taking into account the procedures and interventions. The decision tree (Figure 1) identified the main condition, i.e. a disease or an injury or, if no diagnosis was made, the main symptom, abnormal finding or problem. The diagnostic groupings were made taking into account ICD-9-CM, ICD-10 and ICD-11; the surgical groupings were made taking into account ICD-9-CM and ICHI.

Conclusions

The decision tree can be used whatever the versions of the classification of diseases and interventions.

Acknowledgements

Figure 1 - Decision tree for the identification of the main pathological condition
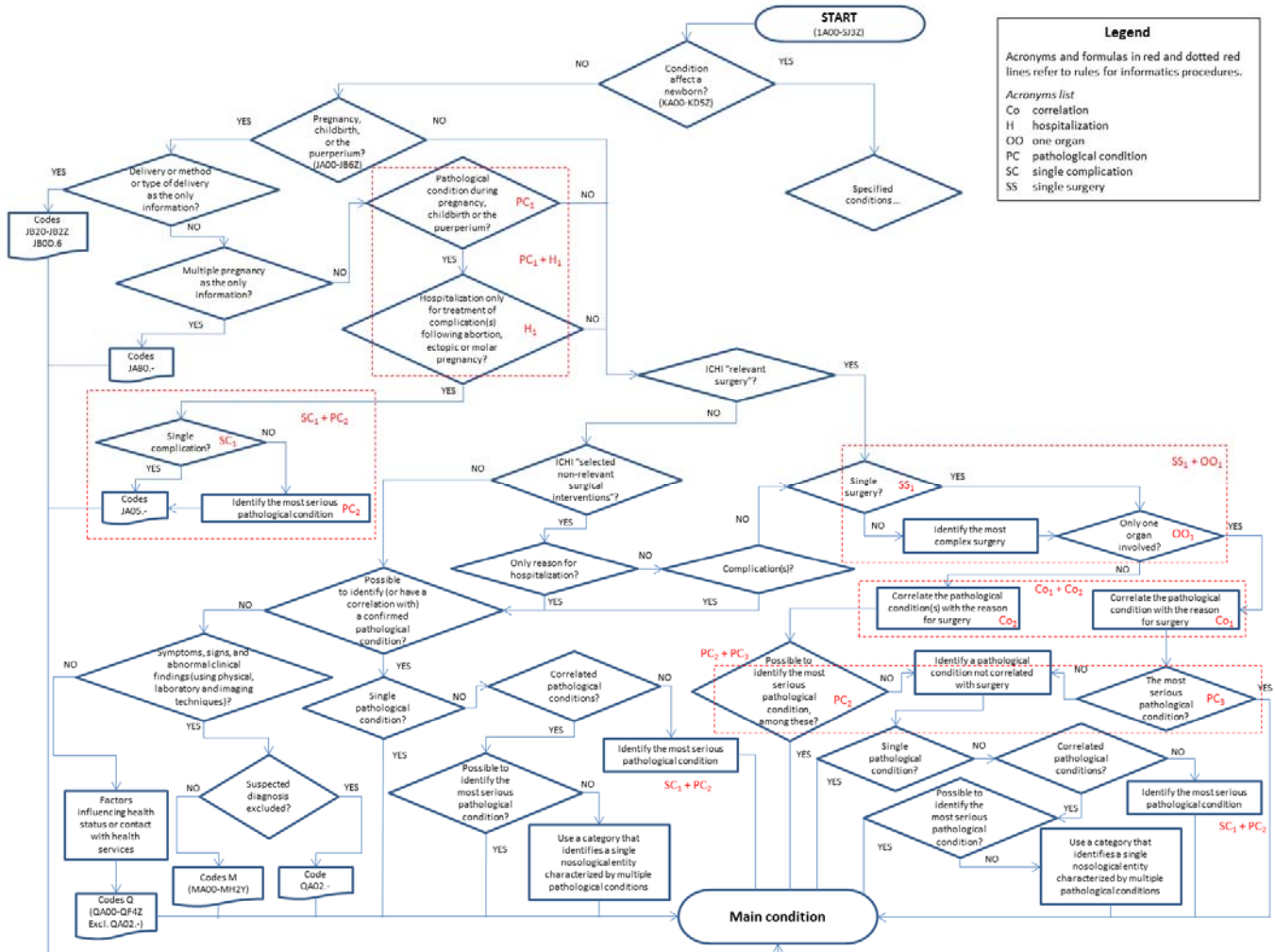
Suggestions on how to update ICD-11 considering morbidity coding: the case of pericarditis, myocarditis, endocarditis and heart valve disorders in diseases classified elsewhere

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ID: 308

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Abstract   An analysis of the ICD-11 post-coordination system - performed before June 1, 2018 - highlighted problems with coding of some manifestations of underlying diseases, represented in ICD-10 by the dagger-asterisk system: a) impossibility of constructing ICD-11 strings for some clinical manifestations of underlying diseases or exuberant number of possibilities; b) association of some additional codes only at the parent code level and not at the leaf code level; c) failure to block post-coordination with incompatible codes; d) dissimilar post-coordination axes compared to maintaining clinical consistency; e) some other gaps. The study presents some results on a specific case.

Introduction

The process of updating ICD-11 will start soon. It will be a different process compared to that of ICD-10 due to the novelties of ICD-11. ICD-10 allows the use of the dagger-asterisk system in several cases, whereas this system is not used in ICD-11. The aim of this study, performed before June 1, 2018, is to verify: a) whether the concepts expressed using the ICD-10 dagger-asterisk system can be found in ICD-11; b) whether ICD-10 dagger-asterisk pairs can be mapped to ICD-11 MMS; c) whether the ICD-11 coding tool allows the transcoding of ICD-10 dagger-asterisk pairs. [1, 2]

Methods & Materials

A previous work carried out by the IT WHO-FIC CC was used that aimed at pre-preparing dagger-asterisk strings (as they appear in Volume 3) with a unique title for each nosological entity to facilitate their use in morbidity coding [3]. More than 3500 dagger-asterisk strings were identified. To verify the representation of their concepts in ICD-11: a) a selected setting was chosen to carry out the analysis; b) ICD-10 dagger-asterisk strings were transcoded in ICD-11 MMS codes and in ICD-11 post-coordination strings; c) a mapping analysis was made. The variables considered were: a) ICD-10 string; b) ICD-10 label (unique title for each nosological entity, constructed out by the IT WHO-FIC CC according to Volumes 1 and 3); c) ICD-11 MMS code; d) ICD-11 MMS code title; e) ICD-11 MMS description/inclusions; f) ICD-11 Coding tool - code inclusions; g) ICD-11 MMS code description/ inclusions and ICD-11 Coding tool code inclusions by approximation; h) corresponding transcoding; i) exact mapping for MMS description/inclusions; k) exact mapping for Coding tool inclusions; j) ICD-11 post-coordination code; l) ICD-11 post-coordination title/manifestation; m) gap.

Results

Two hundred ICD-10 strings were selected that codified "pericarditis, myocarditis, endocarditis and heart valve disorders in diseases classified elsewhere". ICD-11 MMS allowed to

directly map only 36 ICD-10 strings. Of these mappings, 8 were exact if considering ICD-11 MMS code inclusions (or description) and 28 were approximate if considering ICD-11 coding tool narrower terms (or inclusions).
The analysis - performed before June 1, 2018 – highlighted various ICD-11 post-coordination problems:
a) antithetical cases with respect to the possibility of constructing ICD-11 strings (e.g. hundreds of strings for valve disorders in late syphilis, no strings for valve disorders in rheumatoid arthritis);
b) association of the infectious agent only at the parent code level and not at the leaf code level (e.g. 1D85 vs 1D85.0-1-2);
c) failure to block post-coordination with incompatible stems codes (e.g. unspecified codes can be added to specified codes and/or to "other specified" codes) (Figure 1);

d) the possible post-coordination axes are not similarly shown if the starting point changes while maintaining clinical consistency;
e) other gaps (Table 1).

Conclusions

Improvements and updates are needed at both MMS and post-coordination level.

References

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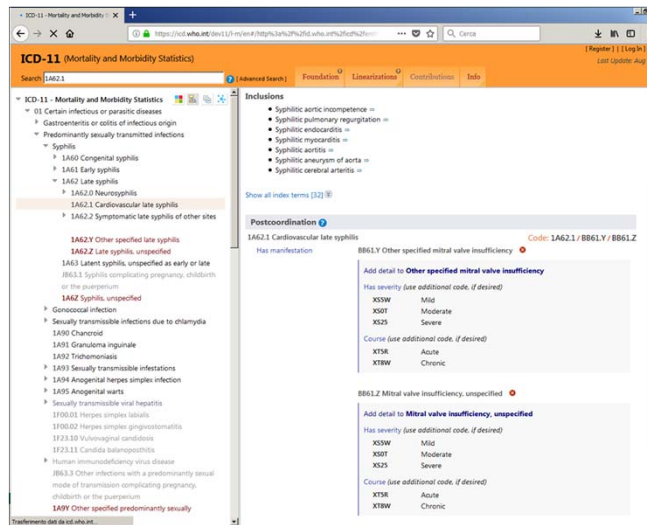
Figure 1 – Example of failure to block post-coordination: an unspecified code can be added to an "other specified" code

Table 1 - Examples of post-coordination problems in cardiovascular late syphilis

ICD-10 string	ICD-10 dagger-asterisk string unique title	ICD-11 MMS code	ICD-11 MMS code title	ICD-11 MMS code description/ inclusions	ICD-11 Coding tool - code inclusions	ICD-11 MMS description/ inclusions and Coding tool code inclusions by approximation	ICD-11 post-coordination code	ICD-11 post-coordination title/manifestation	Gap
A52.0† I39.0*	Mitral valve disorders in syphilis	1A62.1	Cardiovascular late syphilis	Syphilitic mitral valve stenosis	Syphilitic mitral valve stenosis	Syphilitic valvulitis, Syphilitic endocarditis, Syphilitic heart disease	1A62.1/BB40	Cardiovascular late syphilis/Acute or subacute infectious endocarditis	
							1A62.1/BB40&X N030	Cardiovascular late syphilis/Acute or subacute infectious endocarditis&Treponema pallidum pallidum	Compared to ICD-10 dagger-asterisk unique title, ICD-11 post-coordination system does not give the possibility to add the type of valve or the site. However, in ICD-11 MMS, the BB6Y code "Other specified mitral valve disease" is indicated as an equivalent to ICD-10 code I39.0 "Mitral valve disorders in diseases classified elsewhere", but ICD-11 post-coordination system does not give the possibility to create strings concerning infections and, to confirm ICD-11 different concept, the inclusions of BB6Y (Mitral valve thrombosis; Mitral valve obstruction by tumor) are not consistent with infectious diseases.
							1A62.1/BB41	Cardiovascular late syphilis/Myoendocarditis	
							1A62.1/BB41&X N030	Cardiovascular late syphilis/Myoendocarditis&Treponema pallidum pallidum	Post-coordination system allows to indicate the infectious agent (Treponema) for myoendocarditis, but not for periendocarditis: error in the informatics procedure?
							1A62.1/BB42	Cardiovascular late syphilis/Periendocarditis	

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

ICD-11 MMS Field Testing for Morbidity
Phase 3 Preliminary Findings from Australia

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ID: 309

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Abstract   In January 2018, the Australian Institute of Health and Welfare (AIHW), in its role as the Australian Collaborating Centre, was invited to coordinate a third phase of morbidity field testing of ICD-11 for Mortality and Morbidity Statistics (ICD-11 MMS). Participants showing a demonstrated understanding from the Phase 2 field testing were chosen to participate in an all-day education and coding workshop. The feedback and outcomes of this phase of field testing will be used to assist the Australian Government and other stakeholders to inform decisions around potential adoption and implementation of ICD-11 MMS in Australia.

Introduction

The AIHW has coordinated three phases of the Australian field testing of ICD-11 MMS for morbidity purposes between 2016-2018. Phase 3 was the final phase of field testing by the WHO and was conducted in March 2018.

Outcomes of the testing were used to assess changes in the tooling environment. This was also an opportunity to assess participants understanding of ICD-11.

Materials

Participants

All participants in Phase 3 had taken part in Phase 2 and were working in government, hospitals or the private sector. Phase 3 had a total of 20 participants. In addition to the field test, participants were asked to complete a survey before and after the workshop.

Education Materials

Participants attended a one-day workshop. The workshop was split between an education presentation on changes to the tooling environment (Fig 1), followed by time to code diagnostic statements.
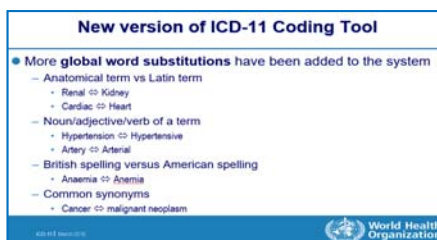
Figure 1. Education slide on the Coding Tool "global word substitutions" enhancement.

Diagnostic Statements

Statements from the Phase 2 field testing that had low agreement for code assignment were repeated in Phase 3. Keeping these statements the same allowed for differences in the tooling environment to be highlighted in the results.

Phase 3 had 80 diagnostic statements.

Acknowledgements

The AIHW thanks all of the clinical coding experts who participated across Phase 2 and 3. We are also incredibly grateful for the time and expertise provided by WHO's Linda Best.

ICD-11 Tooling Environment

The field tests used a tooling environment which enabled participants to access (via the index) and review (via the tabular) the classification to turn diagnostic statements into ICD-11 MMS codes. These codes were entered into a system called ICD-FiT which is also how the diagnostic statements were accessed. The frozen version of these tools used in Phase 3 field testing can be seen in Figure 2.
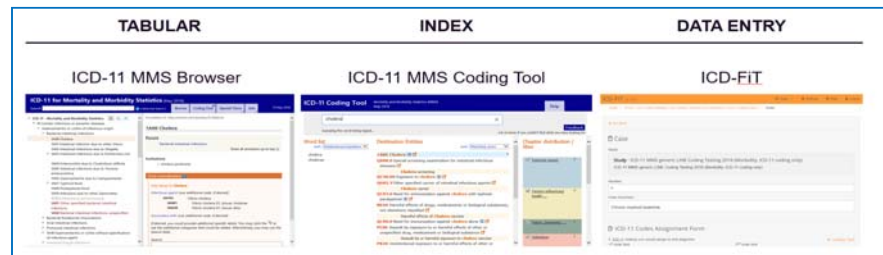
Figure 2. 15 Feb 2018 frozen version of the tooling environment used in Phase 3.

The index for ICD-11 is accessed through the Coding Tool and significant improvements had been made to help participants navigate the classification. Some of these improvements include: global word substitutions, flexible searching options (less strict searching rules) and post-coordination combinations added to search results for laterality, acute/chronic and specific anatomy (see Example 1).

ICD-11 MMS Coding Tool search for "*frontal glioblastoma*":

Result before enhancement:	2A00.00	**Glioblastoma** of brain
Result after enhancement:	2A00.00&XA2NT0	**Glioblastoma** of brain [**Frontal** Lobe]

Example 1. Demonstration of the "post-coordination combination" enhancement.

Preliminary Results

For comparison, a subset of the Phase 2 results was created which contained the same diagnostic statements as those tested in Phase 3. Participant ratings, along with the time it took to submit the codes, are shown in Table 1.

Table 1. Changes in the rating of different aspects of code assignment

CATEGORY OF RATING	PHASE 2	PHASE 3	CHANGE
Cases rated as difficult	23%	26%	More difficult
Cases rated as ambiguous	36%	22%	Less ambiguous
ICD-11 had correct level of specificity	73%	84%	More specificity
Average time taken to rate cases	176 s	109 s	Shorter coding time

Table 2. Comparison of errors in coding

CATEGORY OF ERROR	PHASE 2	PHASE 3	CHANGE
Incorrect separators used	63 cases	20 cases	62% reduction in overall errors
Transcription errors	7 cases	2 cases	
Extension codes reported alone	15 cases	10 cases	

After analysis, a summary of key errors made by participants is provided in Table 2. Overall, there was a 62% reduction in errors when comparing phase 2 and phase 3 coded results.

From the survey, results also indicated that participants felt more confident in using the coding tool (81% before, 100% after) and using the post-coordination/clustering mechanism (56% before, 94% after) after the training session. Participants also expressed preference for the education to be provided as a face-to-face workshop rather than a webinar (88%).

Conclusion

Enhancements made to the ICD-11 tooling environment has helped users navigate the classification and reduced errors. Further work is needed to look at the accuracy and consistency in code assignment in field testing ICD-11 MMS.

ICD-11 Field trial in Japan
- An evaluation of a line coding -

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

22-27 October 2018
Seoul, Republic of Korea

ID: 310

Authors: Yoko Sato[1,2], Hiroshi Mizushima[2], Hiromitsu Ogata[3,2], Kei Mori[4]
1National Defense Medical College, Saitama, Japan, 2National Institute of Public Health, Saitama, Japan, 3Kagawa Education Institute of Nutrition, Saitama, Japan, 4Ministry of Health, Labour and Welfare of Japan, Tokyo, Japan

Abstract ICD-11 Field trial in Japan was performed in 2017, and 378 health information managers participated. In evaluation of a line coding, which is a coding of diagnostic terms with ICD-10 and ICD-11, we found that there were differences among chapters in the difficulty of coding, the level of detail of the code, and the level of ambiguity of the code. More detailed applicability assessment of ICD-11 by cross-sectional analysis among chapters will be needed.

Introduction

In the ICD-11 (International Disease Classification 11th Edition) Field Trial (FT), two types of evaluations were performed: a line coding (LC) that is a coding of diagnostic terms and a case coding that is a coding of case scenarios. Following a guideline and platform for ICD-11 FT (ICD-11 Fit) offered by WHO, ICD-11 FT in Japan was performed from Aug to Sept 2017. The present study showed an evaluation of LC.

Methods & Materials

With the cooperation of the Japan Health Information Manager Association and Japan Hospital Association, 378 health information managers were registered in ICD-11 Fit.

In LC, 298 diagnostic terms were provided. These were divided into 22 chapters (Table 1).The raters coded each term with both ICD-10 and ICD-11, then the difficulty of coding, the level of detail of the code, and the level of ambiguity of the code were evaluated as an individual evaluation. A coding time was measured automatically. The raters who completed all diagnostic terms went an overall evaluation. We compared the results of individual evaluations among chapters, then summarized overall evaluations.

Table1. A chapter breakdown of 298 diagnostic terms in a line coding

No	Name of chapter	n(%)
01	Certain infectious or parasitic diseases	15(5.03)
02	Neoplasms	26(8.72)
03	Diseases of the blood or blood-forming organs	7(2.35)
04	Diseases of the immune system	3(1.01)
05	Endocrine, nutritional or metabolic diseases	33(11.07)
06	Mental, behavioural or neurodevelopmental disorders	11(3.69)
07	Sleep-wake disorders	6(2.01)
08	Diseases of the nervous system	14(4.70)
09	Diseases of the visual system	5(1.68)
11	Diseases of the circulatory system	24(8.05)
12	Diseases of the respiratory system	12(4.03)
13	Diseases of the digestive system	32(10.74)
14	Diseases of the skin	6(2.01)
15	Diseases of the musculoskeletal system or connective tissue	14(4.70)
16	Diseases of the genitourinary system	19(6.38)
18	Pregnancy, childbirth or the puerperium	5(1.68)
19	Certain conditions originating in the perinatal period	7(2.35)
20	Developmental anomalies	2(0.67)
21	Symptoms, signs or clinical findings, not elsewhere classified	6(2.01)
22	Injury, poisoning or certain other consequences of external causes	44(14.77)
23	External causes of morbidity or mortality	2(0.67)
24	Factors influencing health status or contact with health services	5(1.68)
Overall		298

Results

22.0% (n=83) of participants completed coding of all diagnostic terms, 56.9% (n=215) cancelled in the middle, and 21.2% (n=80) did not started. (Figure 1)

Figure 1. Answer situation in line coding

- All completed: 22.0%
- Partial: 56.9%
- Not started: 21.2%
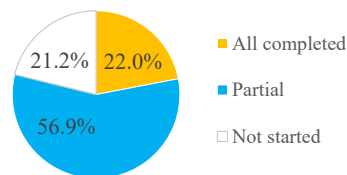
We compared LC individual evaluation between ICD-10 and ICD-11 of each chapter (Table 2). The percentage of respondents who said they felt difficulties in ICD-11 coding was higher in 19 chapters including chapter 1 (infectious disease), 2 (neoplasms), and 3 (blood disease) than those of in ICD-10 coding (all p < 0.035). There were no difference in chapter 4 (immune disease), 9 (visual disease), and 20 (developmental anomalies) between ICD-10 and ICD-11. In comparison of the percentage of respondents who answered "just right" in the evaluation of the level of details and the percentage of respondents who answered "not ambiguous" in the evaluation of the level of ambiguity, the percentage of ICD-11 was higher in chapter 4 (immune disease) (both p <0.001). A coding time of ICD-11 was longer in all chapters than one of ICD-10 (all p <0.05).

Table2. Comparison of individual evaluations of a line coding in ICD-10 and ICD-11

* p<0.05 in McNemar test, ** p<0.001 in McNemar test, + p<0.05 in wilcoxon signed-rank test, and ++ p<0.001 in wilcoxon signed-rank test.

Chapter No	Q1. Difficulty % of "YES" ICD-11	ICD-10		Q2. Detail % of "Just right" ICD-11	ICD-10		Q3. Ambiguity % of "NO" ICD-11	ICD-10		Coding time Median sec ICD-11	ICD-10	
01	11.0	4.7	**	69.2	71.7	**	65.3	70.2	**	139	54	++
02	7.6	3.1	**	71.3	74.3	**	68.1	74.9	**	71	22	++
03	7.1	1.8	**	72.1	78.2	**	69.2	76.9	**	56	22	++
04	9.2	7.4		69.0	59.0	**	65.7	58.3	*	87	36	++
05	5.7	2.4	**	73.6	76.0	**	70.8	75.2	**	51	19	++
06	5.1	2.0	**	72.2	74.1	*	69.6	71.7	*	44	16	++
07	4.1	2.6	*	72.8	70.3	*	69.0	69.6		44	13	++
08	9.2	1.4	**	67.0	74.2	**	61.5	72.0	**	54	14	++
09	2.8	1.9		75.4	74.7		73.0	72.1		33	16	++
11	5.3	2.5	**	72.0	73.1		69.0	71.7	**	38	13	++
12	5.5	2.5	**	72.2	73.6		70.0	73.5	**	47	14	++
13	3.8	2.2	**	73.2	73.1		71.9	72.9		37	12	++
14	11.2	3.8	**	56.8	64.2	**	52.0	63.7	**	88	18	++
15	9.7	3.3	**	58.4	66.1	**	53.3	65.8	**	63	19	++
16	8.2	2.7	**	64.4	68.6	**	58.3	66.9	**	53	18	++
18	9.6	3.9	**	61.6	69.0	**	54.5	67.3	**	87.5	24	++
19	5.6	2.4	**	73.9	76.1	*	68.7	74.1	**	44	19	++
20	2.7	0.4		77.1	78.9		76.7	76.2		39	14	++
21	8.6	3.7	**	67.3	69.9		61.8	69.9	**	63	23.5	++
22	12.0	4.2	**	59.8	65.6	**	52.1	65.4	**	81	19	++
23	18.1	6.8	**	53.8	66.5	**	50.7	67.0	**	110	19	++
24	15.9	10.3	**	59.2	61.8		53.9	58.9	*	107	27	++

75 raters went an overall evaluation (Table 3). 45.3% said the rate of the coverage of ICD-11 was good and very good, and 73.3 % said the level of detail in ICD-11 was just right. Free comments showed the level of detail was different among chapters. 46.7% said that they felt difficulty to use ICD-11. The reasons were raised that this FT was implemented in English and not given adequate educations about ICD-11 and its tools. 37.3% said the electronic tools were good, however, they needed more accurate fuzzy string searching.

Table3. Overall evaluation of a line coding.

• Rate the coverage of ICD-11	n(%)
Good (very good, good)	34(45.3)
Moderate	37(49.3)
Poor (very poor, poor)	4(5.3)
• Rate the level of detail in ICD-11	n(%)
Just right	55(73.3)
Too detail	9(12.0)
Not enough	11(14.7)
• Rate the ease of using ICD-11	n(%)
Easy to use (very easy, easy)	3(4.0)
Usual	37(49.3)
Hard to use (very hard, hard)	35(46.7)
• Rate the electronic tools (ICD-11 Coding tool, ICD-11 Browser)	n(%)
Good (very good, good)	28(37.3)
Moderate	33(44.0)
Poor (very poor, poor)	4(5.3)
Not answer	10(13.3)
• Rate the coding guidance and instructions contained in the ICD-11 Reference guide	n(%)
Good (very good, good)	21(28.0)
Moderate	42(56.0)
Poor (very poor, poor)	10(13.3)
Not answer	2(2.7)

Conclusions

The difficulty, detail and ambiguity evaluation of ICD-11 showed differences in each chapter. In ICD-11, a large-scale code system revision was carried out to enhance applicability in clinical practice, and more detailed applicability assessment is possible by cross-sectional analysis among chapters. In addition, the evaluation of the degree of application and detail of ICD-11 in the overall evaluation was good. Supports for understanding of the coding system and acquisition of electronic tools will lead more accurate and prompt coding.

Acknowledgements or Notes

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Conceptual Model for Quality and Patient Safety Coding using ICD-11

22-27 October 2018
Seoul, Republic of Korea

Authors: Cathy A Eastwood, Danielle A Southern, Hude Quan, Harold Pincus, William A Ghali

Canadian WHO Collaborating Centre for Classification, Terminology and Standards
Calgary, Canada

ID: 311

Abstract ICD-11 includes a greater capacity to classify and describe patient safety events. Extensive discussion, development, and testing by members of the Quality & Safety Topic Advisory Group has shaped the conceptual model that guides coding of healthcare related injuries or conditions. The Reference Guide for ICD-11 coding includes detailed definitions and concepts to help identify and code harms and related causal factors.

Introduction

- Exposure to health care events sometimes has unintended and undesired consequences.
- The conceptual model in ICD-11 has 3 components:

1. **Harm** to the patient: What was the main consequence for the patient's health?
2. **Cause** or source of harm: What caused the harm?
3. **Mode** or mechanism: In what way? How did the source of harm actually produce harm?

- A key feature of the quality and patient safety code-set in ICD–11 is that a cluster of codes is required to represent a case.

Description

- **Harm**, is usually represented by a standard ICD–11 diagnosis code, from [almost] any chapter of the classification.
- **Causes** (sources of harm) fall into four types of causes at the top level that capture events caused by:
  - substances (drugs and medicaments, etc.),
  - procedures,
  - devices, and
  - a mix of other types of causes (e.g. problems associated with transfusions, or problems associated with diagnosis, including missed diagnosis, incorrect diagnosis, etc.).
- **Mode** or **Mechanism** (the main way in which the **Cause** leads to the **Harm)** are specific to the types of **Cause**.

Cause or Source of Harm	Mode or Mechanism
Substance	Overdose, under-dose, wrong substance
Procedure	Accidental perforation of an organ during a procedure
Device	Dislodgement, malfunction
Other causes	Mismatched blood; Patient dropped during transfer from OR table

- There are nuances of language in documentation that will indicate whether there is a causal link between a cause and harm.

Connecting terms implying a causal relationship
- as (a) complication of, complicated by, complicating, complication(s) of
- as a cause of, cause of, caused, caused by, causing
- as a result of, resulted in, resulting in, with resultant, with resulting
- because of
- due to, from
- induced, induced by
- related to, secondary to
- precipitated by
- producing
- likely* related to
- possibly* secondary to, probably* secondary to
- may be the reason for*

*Coding judgment call. However, the clinician is making a causal inference with this term

Connecting terms where the causal relationship is unclear
- Associated with
- Accompanied by
- Incident to

Connecting terms NOT implying a causal relationship
- After
- Also
- And
- During
- With
- Arising in or during
- Consistent with
- Followed by, following
- incurred after/during/in/when
- occurred after/during/in/when/while
- Post-operatively, postoperative, occurred post-op

- If connecting terms appear in clinical documentation without any of the causal connectors discussed above, *best to avoid* using the three-part quality and safety model
- 'postoperative', 'post-op', 'post-procedural', etc., are special, historically been considered, in some coding systems to be indicative of a causal link
- Conditions such as urinary tract infection, pneumonia, and atrial fibrillation may temporally arise after surgery, without necessarily being caused by surgery.
- Coders are instructed to look for explicit causal connections
- Such postoperative conditions can still be coded with informative extension codes that speak to timing – i.e. 'arising during hospital stay' and/or 'postoperative

Other specific situations where the clinical context implies a causal relationship
- Failed device
- Infected device
- Loose screws
- Post-procedural bleeding
- Post-op wound infection
- Dehiscence
- Wound hematoma

Adverse events and circumstances in healthcare that do not cause actual injury or harm

- Many instances where things happen to patients, and where problems arise, but where there is *no* actual adverse consequence to the patient as a recorded medical condition

- In these circumstances, codes should be chosen from Chapter 24 Factors influencing health status or contact with health services in the section of codes entitled 'Health care related circumstances influencing the episode of care, without documented injury or harm'.

- These codes are organized using the four categories of healthcare related harm that appear in Chapter 23 External causes of morbidity or mortality (drugs, devices, procedures and other health care related causes), but with the important distinction that the circumstances being described through coding did *NOT* cause actual harm to the patient.
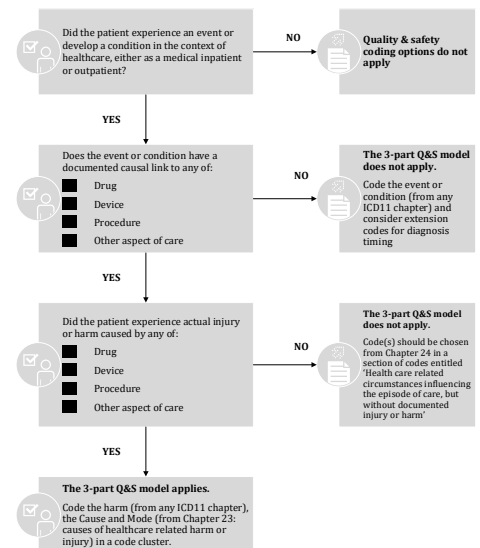
Developed by Bill Ghali, Danielle Southern, Cathy Eastwood at University of Calgary, and Lori Moskal at WHO, March 2018

Acknowledgements or Notes

Training & Coding Experience Using the WHO's Beta Version of ICD-11

22-27 October 2018
Seoul, Republic of Korea

ID: 312

Authors: Cathy A. Eastwood, Danielle A. Southern, William A. Ghali, Hude Quan

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Abstract We developed a systematic training process and set of materials for the **Calgary ICD-11 Field Trial,** to test goodness of fit' of ICD-11, involving over 3000 inpatient records. Coding specialists achieved satisfactory inter-rater reliability for main condition codes, harm codes, and coding time per chart. Quiz scores were high for remembering, understanding, and applying ICD-11 coding concepts. Coding specialists provided qualitative and survey feedback to the WHO Morbidity Reference Group and Quality & Safety Topic Advisory Group for Browser updates and Reference Guide development.

Introduction

As one of three WHO Collaborating Centers, we trained 6 coding professionals for testing ICD-11 codes and identified improvements before full adoption of the new classification system.

Training content:
- New chapters, codes
- Code clustering
- Diagnosis timing
- Post-coordination with related and extension codes
- Coding healthcare acquired conditions with codes for harm, cause, and mode

Methods & Materials

Training Process:
- 10, 2-hr training sessions
- 40 hours of practice coding
- Coded with usual speed
- Coded mandatory conditions based on Alberta, Canada standards
- Trained July to September 2018

Training Materials:
- 3 presentations
- 4 sets of scenarios
- Test bank with answer key
- Guidelines /rules
- Decision trees for Harms
- Reference Guide

Figure 1. Training Evaluation: Remember, Understand, Apply

BLOOM'S TAXONOMY

Results

Study Status:
- 3074 charts reviewed by nurses
- 2828/3094 charts completed
- Data collection ends June 15, 2018

Inter-rater reliability for Main Condition Codes
60 full charts coded by 2 coders
- First 40 – 50% agreement on main condition parent
- Trained again - discussed differences; expert opinion
- Next 20 – 88% agreement

Inter-rater reliability for Harm codes
- 730 records reviewed and coded using ICD-11
- 50% were female, average age 66
- 80 (11%) had a harm /healthcare acquired condition

Chart reviewers and coding specialists accurately identified 100% of the same 80 cases with documented healthcare harms.

Table 1. Time in Minutes to Code Full Inpatient Records with ICD-11
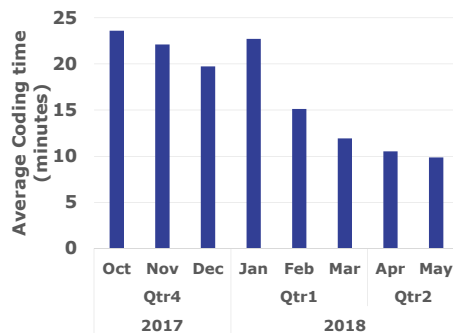
Results

Table 2. Sample Survey Response
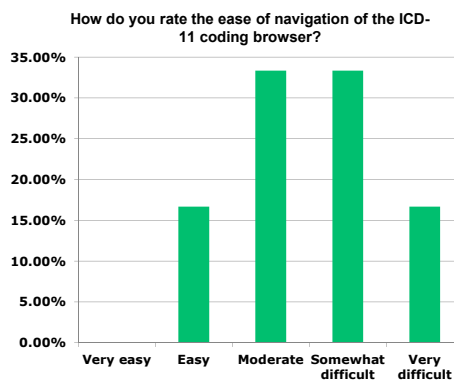
Sample Qualitative Responses
"ICD-11 has enhanced our ability to capture details with cardiac conditions"

"being able to discuss with other coding specialists is invaluable"

"having detailed guidelines on how to use the 3-part model"

What worked?
- Group discussions
- Scenarios to practice
- Expert consultations and answer keys

What didn't work?
- Lack of coding rules and guidelines
- Not enough simple line coding/ cases
- Lack of hands-on group practice and comparison
- Dealing with changing codes and browser content
- Analytics for inter-rater reliability is complex

Acknowledgements or Notes

Update on the translation of ICD-11 implementation version into Spanish: a successful collaborative work.

22-27 October 2018
Seoul, Republic of Korea

ID: 313

Authors: PAHO/WHO (1); WHO-FIC Collaborating Center in Mexico (CEMECE) (2); PAHO/WHO-FIC Collaborating Center in Argentina (CACE) (3); PAHO/WHO-FIC Collaborating Center in Venezuela (CEVECE) (4), Cuban Center for the Classification of Diseases (CECUCE) (5); National Reference Center in Chile (6); Barcelona Collaborating Centre (CC-BCN, Spain) (7); Ministy of Public Health and Social Protection Colombia (8); Ministry of Public Health Dominican Republic (9); World Health Organization (10)

(1)Vilma Gawryszewski; Julya Aymerich; Fernanda Lozano. (2) Manuel Yañez Hernandez; Luis Manuel Torres Palacios; Bertha Vázquez; Amanda G. Navarro Robles; Rodolfo Alanis Fuenres; Carlos Andrade López. (3) Martha Mazás; Adriana Orellano; Karina Revirol; Élida Marconi; Maria Laura Martínez. (4) Fatima Garrido; Cruz Cordero. (5) Miguel Ángel Martínez Morales; Sonia Bess Constantén. (6) Daily Piedra;Eugenia Guerra Marchant. (7) Maria-Dolors Estrada Sabadell; Adelaida González Gómez; Maria José López Cabanas; Mireia Miquel; Purificación Molina Puyo; Anna Puigdefàbregas Serra. (8) Victor Hugo Alvarez Castaño; Luz Helena Gutierrez (8). (9) Karla Yadira Martinez Rodriguez; Emiliana Peña. (10) Nenad Kostanjsek.

Abstract To develop a reliable and sustainable plan for ICD-11 implementation in the Spanish speaking countries is crucial to have available a Spanish version of the new Classification. This poster aims to update the experience of the collaborative translation carried out by the Collaborating Centers (CC) and National Reference Centers (NRC) for the WHO-FIC in the Americas and in Spain, under the coordination of PAHO/WHO. Around 77% of the full content of the classification was translated and a work plan to complete the translation was developed.

Introduction

For the first time, countries of the Region of the Americas were able to contribute their experience at an early stage in the revision of the International Statistical Classification of Diseases and Related Health Problems (ICD).

Since 2015, the CCs, NRCs and Ministries of Health in Argentina (CACE), Chile, Colombia, Cuba (CECUCE), Dominican Republic, Mexico (CEMECE), Spain and Venezuela have started the **collaborative translation of ICD-11 into Spanish** (*ad honorem*), under the coordination of PAHO/WHO.

In 2017, to complete the translation was the first activity agreed by countries in the Road map for ICD current needs and ICD-11 implementation.

Taking into consideration the above mentioned, PAHO/WHO focus their activities in making available to Member States the Spanish version of ICD-11 implementation package.

Methods & Materials

- **Translation** is performed **directly on the platform** by experienced professionals designated by CCs, CNRs and Ministries of Health. They work in different countries simultaneously.

- **Coordination** by PAO/WHO through **regular virtual meetings** to follow up the progress of the activities, exchange experiences, discuss technical documents and be update with the global advances and plan.

- **Completion of translation**. Considering the advances in the translation, a work plan to complete the translation by the end of 2018 was developed during a meeting in Bogota, Colombia, 28-30 August 2018. The PAHO translation service will review and approve the final version.

Results

The collaborative translation of the ICD-11 into Spanish allowed countries to participate in the global process of ICD-11 revision. Among main results of this process are:

a) Collaborate to improve the Beta draft, platform and electronic tools;
b) Translate rate of the full content of ICD-11 is 77% (quality adjusted completion rate).
c) Perform the first pilot tests in a language other than English in seven countries;
d) Train professionals capable of being tutors in future activities;
e) Develop of training materials to be used by other Spanish speaking countries;
f) Document with agreements to standardize translation of common terms .

Among main challenges:

a) Translation of difficult terms.
b) Translation of the Chapter on External Causes due to marked differences compared to ICD-11
c) Translation of the Chapter on Traditional Medicine. It is a new Chapter.
d) Include all variations among countries regarding the use

Translations ICD-11

Búsqueda

Translation Home
- 90% 86% Ciertas infecciones o enfermedades parasitarias
- 90% 82% Neoplasias
- 90% 83% Enfermedades de la sangre o de los órganos formadores de la sangre
- 90% 87% Enfermedades del sistema inmunitario
- 75% 79% Enfermedades endocrinas, nutricionales o metabólicas
- 87% 68% Trastornos mentales, del comportamiento o del neurodesarrollo
- 100% 75% Trastornos del sueño- vigilia
- 90% 85% Enfermedades del sistema nervioso
- 90% 75% Enfermedades del sistema visual
- 74% 71% Enfermedades del oído o de la apófisis mastoide
- 83% 75% Enfermedades del sistema circulatorio
- 67% 77% Enfermedades del sistema respiratorio
- 92% 70% Enfermedades del sistema digestivo
- 84% 71% Enfermedades de la piel
- 90% 82% Enfermedades del sistema musculoesquelético o del tejido conectivo
- 78% 70% Enfermedades del sistema genitourinario
- 70% 82% Condiciones relacionadas con la salud sexual
- 65% 74% Embarazo, parto o el puerperio
- 84% 75% Ciertas condiciones originadas en el período perinatal
- 90% 67% Anomalías del desarrollo
- 70% 68% Síntomas, signos o hallazgos clínicos, no clasificados en otra parte
- 90% 74% Lesiones, envenenamientos o algunas otras consecuencias de causas externas
- 92% 75% Causas externas de morbilidad o mortalidad
- 72% 82% Factores que influyen en el estado de salud o contacto con los servicios de salud
- 90% 90% Códigos para propósitos especiales
- 90% 90% Condiciones de la Medicina Tradicional Módulo I
- 90% 90% Sección suplementaria para evaluación de funcionamiento
- 90% 68% Códigos de Extensión
- 90% 87% Vistas especiales

Completion Rates

Quality adjusted completion rates

Raw completion rates

Meeting in Bogota, Colombia, 28-30 August 2018

Conclusions

- The collaborative translation was very successful. Some difficulties were found because it was a innovative and pioneer activity. This experience can be shared to facilitate the translation of ICD-11 in other languages.

ICD-11 Quality & Safety work

Authors: Danielle A Southern, Hude Quan,
Harold A Pincus, William A Ghali *for the Quality & Safety TAG*

Abstract   The ICD-11 Quality and Patient Safety Working Group is reviewing ICD-10, ICD-10CM and progressive drafts of ICD-11 to inform the development of the ICD-11, focusing on identifying practical modifications for ICD 11 drafts that would enable better measurement of quality and safety. Ultimately, an enhanced classification system will permit expanded use of coded health data for large-scale quality and safety surveillance in health care systems internationally.

TASKS

- Horizontally crossing all ICD-11 chapters to advise on optimizing entire classification's content, structure & coding rules for enhanced application in both existing.

- Developing an inventory of existing quality of care & patient safety indicators and potentially novel quality and safety indicators.

- Assessing potential uses of ICD-11 for health services, quality & patient-centered outcomes research.

- Reviewing and critiquing the ICD-11 beta draft from the perspective of the quality and safety use case.

- Reviewing & critiquing Reference Guide work from the perspective of quality and safety use case.

- Designing field trials for the beta version of ICD-11.

- Producing knowledge translation around ICD-11

2018 MEETING ATTENDEES

Australia: James Harrison, Vijaya Sundararajan
US: Harold Pincus, Patrick Romano, Brigitta Spaeth-Rublee, Marilyn Allen, Jeff Brady, Chris Chute, Geoffrey Reed, Kathy Pike, Noel Eldridge
Canada: Alan Forster, William Ghali, Yana Gurevich, Hude Quan, Danielle Southern, Keith Denny (via phone), Catherine Eastwood, Lori Moskal, Susan Brien, Denise Cullen
France: Cyrille Collin
Germany: Saskia Drösler
Switzerland: Bernard Burnand
WHO: Nenad Kostanjsek (via skype), Maki Kajiwara

ACTIVITIES

Meeting(s)

We held a meeting in New York, NY, USA
- Continued to review chapter 19&20 content and associated clustering mechanisms.

- Refined coding recommendations based on results from field trial

- Work on reference guide review

- Discussion of collaborative work with AHRQ comparing ICD-11 quality and safety framework to QSRS

- Update on development of field studies for ICD-11 Mental & Behavioral Disorders

- Update from WHO Global Patient Safety Alliance
- Update from Ottawa hospital reporting system using ICD-11

- Update from CIHI

- Calgary Field Trial Update

Field Trials

Calgary ICD-11 Field Trial

- Chart review completed

- Coder training ongoing – coding of charts almost complete!

- Refinements to coder training materials ongoing

- Early numbers looking at Q&S PSI codes were 43% sensitive and 91% specific

ACTIVITIES

Future implementation testing

- Early development of proposal for AHRQ collaboration comparing QSRS (Quality Safety Reporting System) to ICD-11

- Coding event descriptions with both systems

CONCLUSIONS

The ICD-11 Quality & Safety Working Group has applied for funding from various sources for future meetings

Implementation testing with ICD-11 is ongoing and will be used to recommend reference guide edits as well as training materials.

Acknowledgements or Notes

CHANGING THE HISTORY OF ANAPHYLAXIS MORTALITY STATISTICS THROUGH THE INTERNATIONAL CLASSIFICATION OF DISEASES (ICD)-11

KOREA
WHO-FIC
NETWORK ANNUAL MEETING
2018

ID: 315

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WHO Collaborating Centre on Scientific Classification Support (FRA 133)

22-27 October 2018
Seoul, Republic of Korea

Abstract Evidence-based data is provided to outline the changes of anaphylaxis mortality statistics and mortality coding rules though the ICD-11 revision and implementation.

Introduction

HISTORIC-PROSPECTIVE ACTIONS TO IMPROVE ANAPHYLAXIS MORTALITY STATISTICS

- **Anaphylaxis**: severe, life-threatening systemic hypersensitivity reaction characterized by rapid onset and the potential to endanger life.
- **Anaphylaxis has never been considered underlying cause of deaths** in deaths certificates, in part due to deficiencies of coding under the ICD framework.
- Research in Brazil proved the resulting in **under-notification of anaphylaxis deaths** (*Allergy 2012*) and triggered actions to have a better representation of allergic and hypersensitive conditions in ICD-11 – the *ALLERGY in ICD-11 initiative*
- All the actions of the ALLERGY in ICD-11 initiative have been documented by peer-review publications (30 manuscripts) and acknowledged by the WHO ICD Team
- 2015: **first "Allergic and hypersensitivity conditions" section in the ICD-11** Beta draft, parented by the "Diseases of the Immune System" chapter
- 2016-2017: Field-testing mortality (Allergy 2016) and morbidity (Allergy 2017) statistics
- 2018: - **Agreement of adding allergy and hypersensitivity conditions as underlying cause of death in death certificates**
  - CHU Montpellier designated as WHO Collaborating Centre on Scientific Classification Support
- 2018-2019: Implementation process
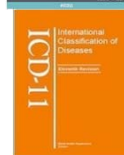
2019 Presentation of the ICD-11 to the World Health Assembly

Methods & Materials

Review published anaphylaxis mortality data (*Allergy 2012*) from ICD-11 perspective.

Anaphylaxis ICD-10 codes (2015 version)	Anaphylaxis ICD-11 codes (frozen May 2015 version)
Chapter XIX Injury, poisoning and certain other consequences of external causes (S00-T98)	**Chapter 04 Disorders of the immune system**
Other and unspecified effects of external causes (T66-T78)	**Section Allergic and hypersensitivity conditions**
T78 Adverse effects, not elsewhere classified	**Subsection Anaphylaxis**
Note: This category is to be used as the primary code to identify the effects, not elsewhere classifiable, of unknown, undetermined or ill-defined causes. For multiple coding purposes this category may be used as an additional code to identify the effects of conditions classified elsewhere.	**4B50 Anaphylaxis due to allergic reaction to food**
4B51 Drug-induced anaphylaxis
4B52 Anaphylaxis due to insect venom
4B53 Anaphylaxis provoked by physical factors
T78.0 Anaphylactic shock due to adverse food reaction
T78.1 Other adverse food reactions, not elsewhere classified
T78.2 Anaphylactic shock, unspecified	4B53.1 Exercise-induced anaphylaxis
4B53.2 Cold-induced anaphylaxis
Allergic shock
Anaphylactic reaction NOS
Anaphylaxis	4B53.Y Anaphylaxis provoked by other specified physical factors
4B53.Z Anaphylaxis provoked by unspecified physical factors
T78.3 Angioneurotic oedema
Giant urticaria
Quincke oedema	**4B54 Anaphylaxis due to inhaled allergens**
T78.4 Allergy, unspecified
Allergic reaction NOS	**4B55 Anaphylaxis due to contact with allergens**

Results

Brazilian Mortality Information System (SIM), data extracted May 2011

Total 3,296,247 records, from 2008 to 2010

3,638 deaths had any ICD-10 code related to anaphylaxis listed as the underlying or as contributing causes of death

2012 analysis (*Allergy, 2012*), based on ICD-10 (2010 version)

2016 analysis, based on ICD-11 Beta Draft (March 2016 version)

"Possible anaphylaxis deaths" (Manual review of all codes recorded on any lines parts 1 of the death certificates)

"Definitive anaphylaxis deaths" (Specific anaphylaxis codes – T780, T782, T805 and T886 as contributing cause of death)

"Possible anaphylaxis deaths" (Manual review of each description in death certificates: isolated description of allergic or hypersensitivity clinical presentations described as contributing cause of death)

"Definitive anaphylaxis deaths" (Specific anaphylaxis codes as contributing cause of death + Manual review of each description in death certificates)

"Possible anaphylaxis deaths" N = 128

"Definitive anaphylaxis deaths" N = 370

"Possible anaphylaxis deaths" N = 33

"Definitive anaphylaxis deaths" N = 606

- **Total 498 anaphylaxis deaths**
- **Average anaphylaxis death rate: 0.87/million/year**

- **Total 639 anaphylaxis deaths**
- **Average anaphylaxis death rate: 1.12/million/year**

Bar chart: Possible anaphylaxis deaths — 2012 (ICD-10) 128, 2016 (ICD-11) 33; Definitive anaphylaxis deaths — 2012 (ICD-10) 370, 2016 (ICD-11) 606.
Legend: ■ 2012 (ICD-10) ■ 2016 (ICD-11)
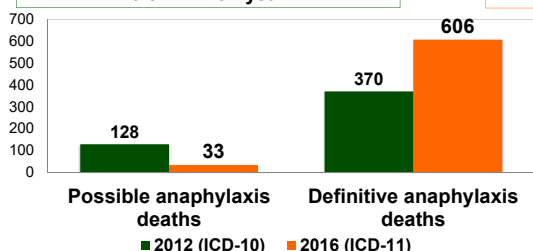
↑ **Sensitivity**: identification of cases 25% higher

↑ **Accuracy**: reaching 95% for definitive anaphylaxis deaths

	2012 ANALYSIS	2016 ANALYSIS
	Total: 489 (%)	**Total: 639 (%)**
Gender		
Men	288 (58)	376 (59)
Women	210 (42)	264 (41)
Age (years)		
Chidren (0-15)	43 (9)	51 (8)
Young adults (15-40)	102 (20)	148 (23)
Adults (40-60)	138 (28)	177 (28)
Elderly (>60)	212 (43)	263 (41)
External stimulus		
Drugs	208 (42)	324 (51)
Insect bite	172 (35)	179 (28)
Food	12 (2)	12 (2)
Unespecified	106 (21)	124 (19)

❖ Anaphylaxis morbidity statistics (WHO Montpellier hospitalization database): 89 cases/year, improvement of accuracy reaching 71.5% of agreement with the ICD-11.

Conclusions

- The use of ICD-11 had a clearer effect on:
  - Accuracy reaching 95% for definite anaphylaxis
  - Increased sensibility: identification of 25% higher

- The ICD-11 "anaphylaxis" section endorsed by the WHO = recognition as a real condition, able to be properly diagnosed and managed

- Immediate consequences of the ICD-11 new classification:
  - ✓ although currently anaphylaxis fatalities are perceived as rare, the reported number of anaphylaxis deaths may increase
  - ✓ cases will be included in official mortality statistics, providing a global standard for comparability and, therefore, for decision-making and prevention.

Structure and roles of V-chapter in ICD-11: A comparison with ICF and its application as effective international statistics

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ID: 316

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Abstract

In ICD-11, a new chapter of a classification of life functions is added, which is V Supplementary section for functioning assessment (hereinafter V-chapter) adopt WHO-DAS 2.0 (WHO Disability Assessment Schedule 2.0) , ICF(International Classification of Functioning, Disability and Health) Rehabilitation set and ICF Annex 9(Suggested ICF Data requirements for ideal and minimal health information systems or surveys). The purpose of this study is to analyze the structure of V-chapter with comparisons to ICF Rehabilitation set and ICF Annex 9 and to examine the mutual use of ICD and ICF.

Introduction

- Although ICF has already been established as an international statistical classification, V-chapter, which assesses vital functions, has been introduced in ICD-11-MMS.
- According to documents by the Committee on Lifestyle Classification of the 18th Social Security Council Statistical Working Group of Japan's Ministry of Health, Labor and Welfare describe "Two possibilities arising from the integration of ICF into ICD-11" by WHO : "a possibility of structured assessment to generate standardized patient profile and overall function scores;" and "a possibility of the choice of functional categories for individual cases or conditional coding."
- However, there are concerns in realizing these possibilities, such as the usage of the ICF code. That is, there are numerous codes in ICF's function classification, and the method of utilizing evaluation points is not yet established. Therefore, statistical analysis and generalization of Functioning associated with disease and trauma (external factors) have never been performed.
- **We analyze the structure of Chapter V of ICD-11 from the ICF perspective and consider the mutual use of the ICD and ICF(Fig.1).**
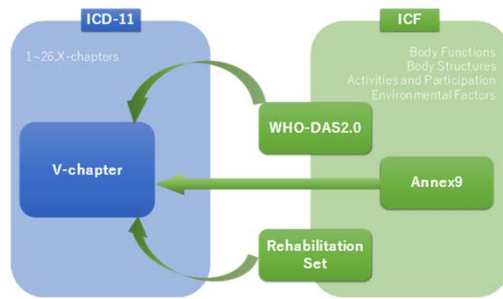
Figure.1 Relationship between V-chapter and ICF

Results

Result1 (Table 1, Fig.2)
WHO-DAS2.0 and V-chapter
The coverage of "body functions" was low (2/16; 12.5%) and the consistency of "activities and participation" was high (21/31 67.7%).
Rehabilitation Set and V-chapter
The coverage of both "body functions" (9/16; 56.3%) and "activities and participation" (21/31; 67.7%) were high.
Annex 9 and V-chapter
The coverage of "body functions" (14/16; 87.5%) was higher than the other two base tools, and the coverage of "activities and participation" was the same coverage rate as Annex 9(17/31; 54.8%) .

Result2 (Fig. 3)
The scale used as one of disease diagnosis (MMSE and GDS) has a high rate of consistency with "physical and mental function", and the scale for evaluating ADL (Barthel Index, Lawton Index) is the ratio of "activity and participation" it was high.

Result3 (Table 1)
It can be seen that Alzheimer's dementia is classified into disease classification in Chapter 6 and living function by Chapter V in 5 chapters and 12 items .
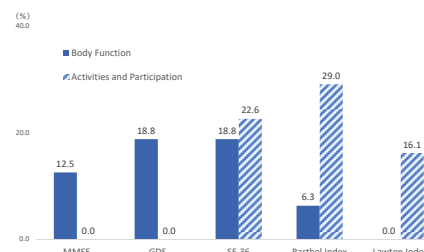
Figure.2 Coverage of V-chapter in the existing scales (%)
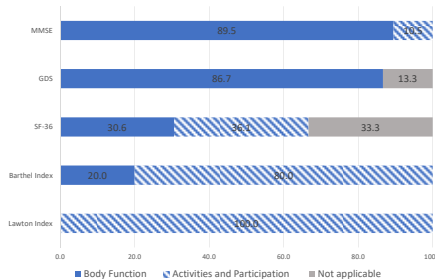
Figure.3 Coverage of ICF in the existing scales (%)

Conclusions

- The V-chapter and the ICF are the tools that can assess the Functioning and can also be used like a compass for performing analysis to understand which part of Functioning is assessed by the existing scales. It can be thought of as a tool that can examine the necessary scale when evaluating living functions as a whole.
- According to the consistency of the V-chapter with the three base tools and the existing scales, the code of the V-chapter is an item which includes an assessment based on "body functions" and "activities," and expresses the Functioning.
- However, for the choice of individual cases or conditional coding, further analyses are needed for considering the practical use of V-chapter.

Acknowledgements

Methods & Materials

1. Perform a comparative analysis of the consistency of the V-chapter code with WHO-DAS2.0, ICF Rehabilitation Set, and ICF Annex 9, which are base tools of the ICD-11-MMS.
2. Using the example of Alzheimer's dementia, perform an analysis of the coverage of generated Functioning classification with the existing scales, and the V-chapter and ICF codes.
3. Analyzed the coverage of the existing scale and the ICF code.

Table 1. Comparisons between V-chapter code and 3 base tools code and functioning of Alzheimer type dementia

Corresp. ICF Code	V-chapter Code	Functioning entity as shown on the ICD-11 Browser (status 26 August 2018)	WHODAS 2.0	Rehab set	Annex9	Dementia due to Alzheimer disease
Body Function						
Mental functions						
b130	VA00	Energy and drive functions		×	×	×
b134	VA01	Sleep functions		×	×	×
b140	VA02	Attention functions	×		×	×
b144	VA03	Memory functions	×		×	×
b152	VA04	Emotional functions		×	×	×
Sensory functions and pain						
b210-220	VA20	Seeing and related functions			×	
b230-240	VA21	Hearing and vestibular functions			×	
b280	VA22	Sensation of pain		×	×	
Voice and speech functions						
b310-b340	VA40	Voice and speech related functions			×	
Functions of the cardiovascular, haematological, immunological and respiratory systems						
b455	VA60	Exercise tolerance functions		×	×	
Functions of the digestive, metabolic and endocrine systems						
b510-535	VA80	Functions of digestive system			×	
Genitourinary and reproductive functions						
b620	VB00	Urination functions		×	×	
b640	VB01	Sexual functions		×	×	
Neuromusculoskeletal and movement-related functions						
b710	VB20	Mobility of joint functions		×		
b730	VB21	Muscle power functions		×		
Functions of the skin and related structures						
b810-830	VB40	Skin and related structures			×	
Activities and Participation						
Learning and applying knowledge						
d159	VB60	Basic learning, other specified_learning a new task	×			×
d175	VB61	Solving problems	×			×
General tasks and demands						
d230	VB80	Carrying out daily routine		×		×
d240	VB81	Handling stress and other psychological demands		×		×
Communication						
d310	VC00	Communicating with - receiving - spoken messages	×			×
d350	VC01	Conversation	×			
Mobility						
d410	VC20	Changing basic body position	×	×		
d415	VC21	Maintaining a body position	×	×		
d420	VC22	Transferring oneself		×		
d430-d445	VC23	Carrying, moving and handling objects			×	
d450	VC24	Walking	×	×	×	
d455	VC25	Moving around	×	×		
d460	VC26	Moving around in different locations	×			
d465	VC27	Moving around using equipment		×	×	
d470	VC28	Using transportation		×		
Self-care						
d510	VC40	Washing oneself	×	×	×	
d520	VC41	Caring for body parts		×	×	
d530	VC42	Toileting		×	×	
d540	VC43	Dressing	×	×	×	
d550	VC44	Eating	×	×	×	
d570	VC45	Looking after one's health	×	×		
Domestic life						
d630	VC60	Preparing meals			×	
d640	VC61	Doing housework	×	×		
d660	VC62	Assisting others		×		
Interpersonal interactions and relationships						
d710	VC80	Basic interpersonal interactions	×	×		
d730	VC81	Relating with strangers	×	×		
d750	VC82	Informal social relationships	×	×		
d770	VC83	Intimate relationships	×	×		
Major life areas						
d850	VD00	Remunerative employment	×	×		
Community, social and civic life						
d920	VD20	Recreation and leisure	×	×	×	
d940	VD21	Human rights	×			

KOREA
WHO-FIC
NETWORK ANNUAL MEETING
2018

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401	ICD-10 Updates implementation – the Mexican Experience	Jimenez, A.; Yañez, M.; Alanis, R.; et al.
402	Relevance of ICD-10 selection rules in determining the underlying cause of death	Navarra S., Simeoni S., Grippo F.
403	Bridge coding analysis on the adoption of ICD-10 2016 and Iris for mortality statistics in Italy	Navarra S., Frova L., Grande E., Marchetti S., Pappagallo M., Grippo F.
404	IRIS Automatic System for Coding in Mexico	Yañez, M.; Pérez, M.; Andrade, C., et al.
405	Development of a virtual assistant for coding with ICD-10-CM/PCS	H. Shafruddin, M. Tran, R. Smith, et.al.
406	Rule based mapping between ICD-10 and ICD10-AM	H. Shafruddin, M. Tran, R. Smith, A. O'Donnell, et.al.
407	International Classification of Diseases (ICD): Coding Personnel Training Worldwide	Lucía Varela, Cathy Eastwood, et.al.
408	Implementing ICD-10 in adult mental health services in Emilia Romagna Region	Frattura L., Zavaroni C., Bruno L., Saponaro A.
409	Apps for The Startup Index	Ming Yu, Erjiang E, Xindi Lu

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2018

ID	Title	Authors
410	A Study of the Burden of Disease in the Caribbean using the DALY Health Measure	A Hinds, O. Cyrus, E. Bissessarsingh
411	Demographic and clinical factors associated with having ischemic heart disease as a multiple contributing cause of death among diabetes deaths	Maaya Kita Sugai, Shuhei Nomura, et.al.

ICD-10 UPDATES IMPLEMENTATION THE MEXICAN EXPERIENCE

ID: 401

Authors: Jimenez, A.; Yañez, M.; Alanis, R.; Pérez, M.; Andrade, C. et al.

Mexican WHO-FIC-CC, MoH

Abstract   In recent years, the Mexican WHO-FIC CC has made constant efforts to translate these updates and, with the support of PAHO through RELACSIS, make them available to the countries of the Region of Latin America. This work shows the national experience in the recent implementation of the 2016-2018 updates of the ICD-10. Success stories and lessons learned, with the objective of supporting the countries of the region that are about to embark on this difficult, but necessary task.

Introduction

During the more than 20 years since its launch in 1995, the International Statistical Classification of Diseases, Tenth Revision (ICD-10), has had multiple updates, derived mainly from advances in medicine in general and the accuracy of medical diagnoses.

Each year after careful review processes, these modifications are authorized by the WHO-FIC Network and subsequently published in English for implementation in the Countries.

In Latin America, the adoption of these updates generally presents a certain delay, among other aspects, due to the limitation of the language and the lack of National Reference Centers in the matter.

While the availability of local language updates is essential, unfortunately this is only the first step; The list of activities to be done so that a country can implement them successfully is not short-far from simple.

Methods & Materials

Since the publication of the ICD-10 updates on the WHO website, the Mexican Center consults them and values the opportunity for implementation within the country. For this, several factors must be considered, among them, the necessary training for health information coders and managers for both mortality and morbidity.

After this, the translation of all the updates with recommendations for implementation in 2016 and 2018 was started. changes were entered in each volume.

When they were validated from the technical perspective, with the support and under the authorization of PAHO, the necessary changes were entered in each volume.

Within Mexico, the decision to officially implement the ICD-10 updates is not carried out unilaterally, that is, it is not a situation that only falls to the Ministry of Health, but all the institutions that generate Health information is consulted to determine the feasibility of this task and to define the activities to be carried out.

Fortunately, within each institution there are experienced coders who act as instructors to replicate the training on these updates and put special emphasis on the changes that may arise and how the national statistics could be affected.

The training tasks were developed, in the first instance at the central level, later the trainers trained the coders that are within each zone of Mexico and in each health information generation center.

Chart 2: outline of the steps for the selection of underlying cause of death, developed by MEX-CC

Results

After these activities, the catalogs of the Health Information Systems were adjusted, so that the information was compatible, considering that with the major changes new codes were created (A97.- dengue, for example). And the information began to register officially with those changes as of January 1, 2018.

VOLUME 1
Adequacy, new codes, eliminated, change in the title of the rubrics, sections (morphology of the tumors)

VOLUME 2
General, section of the selection rules of the underlying cause of death, appendices (international format)

VOLUME 3
Insert the changes in the terms and eliminate those that no longer exist.

Acknowledgements or Notes

Once Mexico has developed some experience in this activity, the material has been shared through RELACISIS with colleagues from Chile and Ecuador. In addition, Webinars have been carried out for the other countries of the Latin America Region with the purpose of advising them so that they can do the same work. This activity is still in development. Up to the moment of the elaboration of this poster, we are working on determining the impact of health statistics with the updates of the ICD-10, 2018. It is expected to extend this work with the historical trend and results with evidence.

Chart 1: Process to ICD-10 updates implementation in Mexico

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Relevance of ICD-10 selection rules determining the underlying cause of death

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ID:402

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Abstract The purpose of this work is to quantitatively evaluate the impact of each rule for the selection of the underlying cause of death (UCD) in determining a good quality UCD. A set of death certificates were automatically coded by applying the entire selection algorithm or by suppressing a single step per run. The results show that some steps have a strong effect on the selected UCD and that any modification to the rules should be based on the evaluation of its statistical impact.

Introduction

In 2016 WHO released the fifth edition of ICD-10. Concerning the instruction guidance (Volume 2), this edition is characterized by some changes in the structure and terminology of the coding rules for UCD selection. The rules represent a standard reliable tool to ensure comparability of cause of death (CoD) statistics, nevertheless their complexity could impair their correct application. A possible simplification could be explored, taking in mind that the rules are designed to guarantee the selection of relevant and specific causes of death. The present investigation aims to analyzes the effect of each selection rule (step) in determining good quality CoD statistics.

Methods & Materials

A sample of 27,636 death certificates was automatically coded using Iris V5.5 software with decision tables applying all ICD-10 2016 steps[1] and the standard UCD was determined. Iris coding log was analyzed in order to measure, for each step, the occurrence in the selection process as well as the frequency of modification of the tentative underlying cause (TUC) after application. Successively, in order to evaluate the impact of each step in determining the final UCD, certificates were processed by using a set of modified decision tables produced by suppressing the application of a specific step each time. The UCD obtained was compared with the standard one. The agreement rate (AR) at chapter, three and four digit level was calculated as the percentage of certificates having the same UCD. Comparability ratios (CR) with 95% confidence interval were calculated at chapter level as the number of deaths classified in an ICD-10 chapter in test (modified tables) divided by deaths classified in the same chapter in standard processing. Transition matrices were also produced in order to show the direction of changes.

Results

The analysis of Iris coding log is shown in Figure 1. SP3 is the most frequently applied step. For SP6-M3 an evaluation of the changes in UCD was performed. SP8 modifies the TUC every time it is applied but it is barely used.

Conversely, M3 applies in 10% of cases but it modifies the TUC in 1,4% of the times it is applied. Nevertheless, the analysis of individual records shows that the same effect of M3 could be achieved with changes in decision tables that will be fixed in later editions.
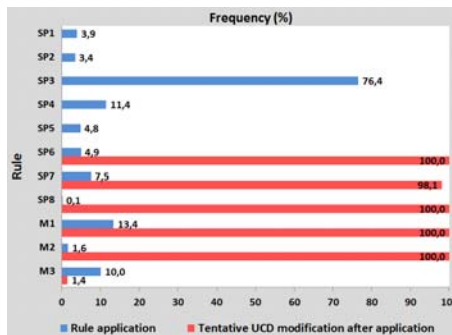
Figure 1 – Analysis of Iris coding log. Application of ICD steps and modification of the TUC. SP1-SP5 are not supposed to produce modifications.

AR (Table 1) and CR analysis (Figure 2) show that step M2 and even more M1 have an impact on the final UCD at 3 and 4 digit level while this is not visible at chapter level. SP8 seems to have no visible effect on data.
Suppression of "Rejected sequences" instructions (ICD-10 2016 Vol. 2, § 4.2.3 B.) as shown in Figure 2 would also impact on data leading to a decrease of blood, nervous, and respiratory diseases.
Steps SP6 and SP7 have a strong impact at chapter level. This is particularly visible on CR analysis. Suppression of SP6 causes a great increase in some conditions (infectious, respiratory, skin diseases) and a decrease in some other (nervous and mental diseases). A significant increase in symptoms and signs and a decrease in all other conditions is observed when SP7 is not applied.
Excluding SP3-SP5 from the selection algorithm (all causal relationships accepted) causes the first mentioned condition in the lowest used line to be selected as the TUC.

	UCD agreement rate (%)		
	chapter level	3 digit level	4 digit level
SP3-SP5	93,0	91,4	91,2
Rejected sequences	96,5	95,6	95,5
SP6	96,6	95,9	95,8
SP7	92,7	92,0	92,0
SP8	99,9	99,9	99,9
M1	99,3	91,3	88,2
M2	100,0	98,9	98,3

Table 1 – AR on UCD between standard and modified tables.
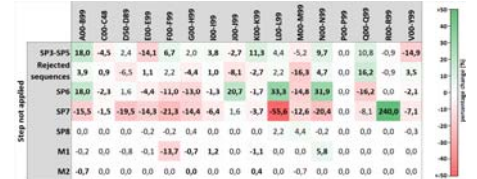
Figure 2 – CR at chapter level between standard and modified tables (on vertical axis). Significant values are in bold font.

This has a marked impact on data as found in AR and CR analysis. This is evident, as shown in Figure 3, especially for infectious diseases, selected over neoplasms, and circulatory conditions which are preferred over external causes, neoplasms, respiratory and metabolic diseases.
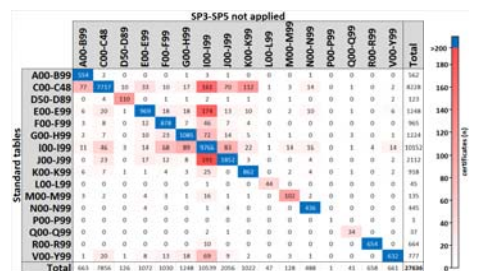
Figure 3 – UCD transition matrix at chapter level from standard to "all-due-to-all" coding (SP3-SP5 not applied).

Conclusions

This study was carried out on Italian data which might not be representative of data in countries with different certification practices. Nevertheless, the study shows a useful approach for measuring the effect of rules for UCD selection on mortality statistics. These measures could be the evidence base for evaluating the impact of every revision or simplification of the coding algorithm.

Notes

1. *Steps for the identification of the starting point:* SP1 - Single cause on certificate; SP2 - Only one line used in Part 1; SP3 - More than one line used in Part 1, first cause on lowest line explains all entries above; SP4 - First cause on lowest used line does not explain all entries above, but a sequence ends with the terminal condition; SP5 - No sequence in Part 1; SP6 - Obvious cause; SP7 - Ill-defined conditions; SP8 - Conditions unlikely to cause death.
Steps for the modification of the starting point: M1 - Special instructions; M2 – Specificity; M3 - Recheck Steps SP6, M1 and M2.
From ICD-10 2016 Vol. 2, § 4.2.

Bridge coding analysis on the adoption of ICD-10 2016 and Iris for mortality statistics in Italy

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Seoul, Republic of Korea

ID: 403

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Abstract In 2016 Italian National Institute of Statistics (Istat) adopted ICD-10 fifth edition (2016) and the new coding system Iris for official mortality statistics. The poster presents the results of the bridge coding analysis carried out in order to evaluate the impact of the transition from ICD-10 2008/MMDS to ICD-10 2016/Iris. Underlying cause of death (UCD) as well as multiple causes (MC) were analyzed. High agreement was observed between the two coding systems. Some changes, especially in UCD, could be attributed to the ICD-10 updates rather than to the new software Iris.

Introduction

Official mortality statistics are produced in Italy by Istat. Until reference year 2015 Istat used the International Classification of Diseases 10th Revision (ICD-10) 2008 edition supported by MMDS (Mortality Medical Data System) software for causes of death (CoD) coding and for the selection of the UCD. In reference year 2016 Istat adopted ICD-10 fifth edition (2016) and the new coding software Iris (version 5). Compared to the ICD-10 2008, the fifth edition presents several changes in the classification of some diseases and in the guidelines for the selection of the UCD. Here, a bridge coding study is presented for documenting the impact of the transition from ICD-10 2008/MMDS to ICD-10 2016/Iris on Italian official mortality data.

Methods & Materials

About 63,000 deaths certificates above 1 year of age, representing a 10% sample of certificates collected in Italy in 2015, were processed using both coding systems: ICD-10 2008/MMDS and ICD-10 2016/Iris. About 80% of the sample was automatically coded and the remainder was manually processed. The resulting UCD as well as the MC were compared. The agreement rate (AR) at chapter, three and four digit level was calculated as the percentage of certificates having the same UCD. In order to estimate the effect of the transition, comparability ratios (CR) with 95% confidence interval were calculated on both UCD and MC for ICD chapters, groups of causes from the European short list (with some additional details), category and subcategory, as the number of deaths classified in a group in Iris divided by the number of deaths classified in the same group in MMDS processing. A transition matrix with UCD frequencies by chapter was constructed as well.

Results

Overall, an AR of about 95% was observed between the two coding systems at ICD chapter level. The percentage decreased to about 90% and 80% at three and four digit level respectively (Table 1).

	UCD agreement rate (%)
chapter level	95,3
3 digit level	89,5
4 digit level	80,2

Table 1 – AR on UCD between ICD-10 2008/MMDS and ICD-10 2016/Iris processing.

As shown in Table 2, the most significant changes on UCD were observed at chapter level for: infectious diseases (-18% in ICD-10 2016/Iris), diseases of the genitourinary system (-17%), diseases of the respiratory system (+7%), diseases of the nervous system and sense organs (+5%), external causes of mortality (+5%).

Table 2 – CR on UCD and MC between ICD-10 2008/MMDS and ICD-10 2016/Iris processing by group of causes. Significant values are in bold font and color scale.

Among infectious diseases, there was a decrease of HIV disease (-39%) and sepsis (-33%). In other groups there was a decrease of renal failure (-17%), an increase of Parkinson disease (+17%) and chronic lower respiratory diseases (+18%) which, in ICD-10 2016/Iris, were selected over some neoplasms, circulatory and infectious diseases (Table 3). Most of these variations are due to changes in the selection rules on accepted sequences and obvious causes.
Less significant changes were observed in MC.

At chapter level a change was shown by infectious diseases (-19%), external causes of mortality (+29%), symptoms and signs (+7%).
For external causes, changes could be attributed to different factors. Among these, the default indexing of "subdural hemorrhage" to the injury chapter in ICD-10 2016. Moreover, in Iris, fractures are no longer considered as non-traumatic (pathological) when due to other conditions such as senility and cancers. In addition, the increase of external causes is partly an effect of the revision of the Italian Iris dictionary implying the addition and correction of expressions indicating complications of medical and surgical care (Y40-Y84).
The important decrease of sepsis (-31%) is due to the introduction, in the ICD-10 2016, of the codes R57.2 (septic shock) and R65 (SIRS) for conditions previously classified in A41.9.
It is worth noting that code R99 (other ill-defined and unspecified causes of mortality) increases by 22% in UCD and by seven times in MC as a result of Iris processing which, in contrast to MMDS, does not delete the code from MC.

Table 3 – UCD transition matrix at chapter level from ICD-10 2008/MMDS to ICD-10 2016/Iris processing.

Conclusions

The coding with the new system is comparable with the previous one, especially for multiple causes. The major impact on statistics was observed in infectious diseases, especially in sepsis.
Changes observed in the UCD could be attributed to the ICD updates rather than to the adoption of the new automated coding system Iris. The results presented are very useful to support the interpretation of any discontinuity in Italian mortality statistics due to differences in coding procedures between 2015 and 2016.

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

IRIS Automatic System for Coding in Mexico

22-27 October 2018
Seoul, Republic of Korea

ID: 404

Authors: Yañez, M.; Pérez, M.; Andrade, C.; Alanis, R.; Vazquez, B.; et al.

Mexican WHO-FIC-CC, MoH

Abstract Considering that the Mortality Reference Group of WHO-FIC Network promotes and recommends Automated Coding Systems, in Mexico through Mexican WHO-FIC CC are working with IRIS coding system. During eight months the mortality data base have been coding this tool. This poster shows some technical points about the dictionary that we have worked.

Introduction

In August 2016, through the cooperation of PAHO, the CEMECE received the Iris course from European experts working with the Iris Coding System to Mortality.

After receiving this training, the Mexican Center focused on the work in the review and validation of a dictionary (that was donated by National Institute Statistics of Spain). This revision included the medical terms contextualized for the Spanish of Mexico, which was reviewed by a multidisciplinary team (coders, computer scientists and physicians) with which was increasing the effectiveness both for the codification and revision in the process of the steps for the selection of the underlying cause of death.

In addition new terms was added and some of them were changed for a different code and increasing rules of standardization for some words.

Methods & Materials

With this new dictionary (DICC-004) we started to work in January 2018 in Ministry of Health and nowadays we have discovered some areas to improve. We made an analysis between the DICC 004-and the new dictionary (DICC-005) that was uploaded and stored in a server in Ministry of Health to get a better control (the manual coding is keeping for maternal deaths, tumours, accidentally and violent deaths and perinatal deaths).

The next tables show some of the differences.

Conclusions

In addition to this national work, the Mexican WHO-FIC CC has had the opportunity to share this experience through the Latin American and Caribbean Network for the Strengthening of Health Information Systems (RELACSIS by its acronym in Spanish) and with the support of the Ministry of Health of Chile. The Chilean health statistics team (DEIS) has worked and performed tests with the dictionary provided by the Mexican Center. The initial focus of this test is given in developing a dictionary of valid mortality terms for Chile and analyzing the causes of the rejected records of each test.

Results

Comparision UCD between DICC-005 vs DICC-004

Chapter	Cases	Chapter				Categoría				Subcategory				Coded by DICC-005		Coded both DICC-004 and DICC 005	
		same code		different code		same code		different code		same code		different code					
A00 – B99	1,750	666	38.1%	10	0.6%	650	37.1%	26	1.5%	650	37.1%	26	1.5%	1,074	61.4%	676	38.6%
C00 – D48	8,435	5,215	61.8%	2	0.0%	5,215	61.8%	2	0.0%	5,215	61.8%	2	0.0%	3,218	38.2%	5,217	61.8%
D50 – D89	448	305	68.1%	7	1.6%	305	68.1%	7	1.6%	305	68.1%	7	1.6%	136	30.4%	312	69.6%
E00 – E90	12,901	9,934	77.0%	33	0.3%	9,922	76.9%	45	0.3%	9,912	76.8%	55	0.4%	2,934	22.7%	9,967	77.3%
F00 – F99	430	294	68.4%	1	0.2%	294	68.4%	1	0.2%	294	68.4%	1	0.2%	135	31.4%	295	68.6%
G00 – G99	1,022	624	61.1%	8	0.8%	622	60.9%	10	1.0%	622	60.9%	10	1.0%	390	38.2%	632	61.8%
H00 – H59	3	2	66.7%	0	0.0%	2	66.7%	0	0.0%	2	66.7%	0	0.0%	1	33.3%	2	66.7%
H60 – H95	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
I00 – I99	22,806	18,340	80.4%	89	0.4%	18,214	79.9%	215	0.9%	18,178	79.7%	251	1.1%	4,377	19.2%	18,429	80.8%
J00 – J99	8,070	4,922	61.0%	46	0.6%	4,914	60.9%	54	0.7%	4,880	60.5%	88	1.1%	3,102	38.4%	4,968	61.6%
K00 – K93	5,764	3,590	62.3%	13	0.2%	3,571	62.0%	32	0.6%	3,505	60.8%	98	1.7%	2,161	37.5%	3,603	62.5%
L00 – L99	411	75	18.2%	1	0.2%	75	18.2%	1	0.2%	75	18.2%	1	0.2%	335	81.5%	76	18.5%
M00 – M99	427	219	51.3%	3	0.7%	219	51.3%	3	0.7%	219	51.3%	3	0.7%	205	48.0%	222	52.0%
N00 – N99	2,587	1,302	50.3%	13	0.5%	1,302	60.9%	13	0.5%	1,302	50.3%	13	0.5%	1,272	49.2%	1,315	50.8%
O00 – O99	12	6	50.0%	0	0.0%	6	50.0%	0	0.0%	6	50.0%	0	0.0%	6	50.0%	6	50.0%
P00 – P96	727	289	39.8%	6	0.8%	286	39.3%	9	1.2%	286	39.3%	9	1.2%	432	59.4%	295	40.6%
Q00 – Q99	640	372	58.1%	2	0.3%	371	58.0%	3	0.5%	357	55.8%	17	2.7%	266	41.6%	374	58.4%
R00 – R99	1,078	914	84.8%	4	0.4%	905	84.0%	13	1.2%	905	84.0%	13	1.2%	160	14.8%	918	85.2%
S00 – T98	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
U00 – U99	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
V01 – Y98	4,551	3,690	81.1%	1	0.0%	3,690	81.1%	1	0.0%	3,690	81.1%	1	0.0%	860	18.9%	3,691	81.1%
Total	72,066	50,759	50.8%	239	0.2%	50,563	50.6%	435	0.4%	50,403	50.4%	595	0.4%	21,068	29.2%	50,998	70.8%

Comparison AcmeCodes between DIC-005 vs DICC-004

Chapter	Cases	Chapter				Categoría				Subcategory				Coded by DICC-005		Coded both DICC-004 and DICC 005	
		same code		different code		same code		different code		same code		different code					
A00 – B99	3,177	1,326	41.7%	3	0.1%	1,325	41.7%	4	0.1%	1,325	41.7%	4	0.1%	1,848	58.2%	1,329	41.8%
C00 – D48	9,524	5,797	60.9%	1	0.0%	5,793	60.8%	5	0.1%	5,793	60.8%	5	0.1%	3,726	39.1%	5,798	60.9%
D50 – D89	1,579	1,081	68.5%	1	0.1%	1,081	68.5%	1	0.1%	1,081	68.5%	1	0.1%	497	31.5%	1,082	68.5%
E00 – E90	20,069	14,520	72.4%	8	0.0%	14,518	72.3%	10	0.0%	14,517	72.3%	11	0.1%	5,541	27.6%	14,528	72.4%
F00 – F99	1,657	1,233	74.4%	4	0.2%	1,232	74.4%	5	0.3%	1,232	74.4%	5	0.3%	420	25.3%	1,237	74.7%
G00 – G99	2,247	1,238	55.1%	2	0.1%	1,238	55.1%	2	0.1%	1,238	55.1%	2	0.1%	1,007	44.8%	1,240	55.2%
H00 – H59	10	6	60.0%	0	0.0%	6	60.0%	0	0.0%	6	60.0%	0	0.0%	4	40.0%	6	60.0%
H60 – H95	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%	0	0.0%
I00 – I99	55,204	43,131	78.1%	80	0.1%	42,745	77.4%	466	0.8%	42,723	77.4%	488	0.9%	11,993	21.7%	43,211	78.3%
J00 – J99	21,761	13,553	62.3%	22	0.1%	13,553	62.3%	22	0.1%	13,495	62.0%	80	0.4%	8,186	37.6%	13,575	62.4%
K00 – K93	10,467	6,417	61.3%	10	0.1%	6,413	61.3%	14	0.1%	6,164	58.9%	263	2.5%	4,040	38.6%	6,427	61.4%
L00 – L99	878	176	20.0%	1	0.1%	176	20.0%	1	0.1%	176	20.0%	1	0.1%	701	79.8%	177	20.2%
M00 – M99	542	286	52.8%	0	0.0%	286	52.8%	0	0.0%	286	52.8%	0	0.0%	256	47.2%	286	52.8%
N00 – N99	13,079	8,876	67.9%	13	0.1%	8,876	67.9%	13	0.1%	8,876	67.9%	13	0.1%	4,190	32.0%	8,889	68.0%
O00 – O99	17	9	52.9%	0	0.0%	9	52.9%	0	0.0%	9	52.9%	0	0.0%	8	47.1%	9	52.9%
P00 – P96	1,479	491	33.2%	6	0.4%	490	33.1%	7	0.5%	490	33.1%	7	0.5%	982	66.4%	497	33.6%
Q00 – Q99	733	426	58.1%	1	0.1%	426	58.1%	1	0.1%	411	56.1%	16	2.2%	306	41.7%	427	58.3%
R00 – R99	17,708	7,834	44.2%	47	0.3%	7,766	43.9%	115	0.6%	7,728	43.6%	153	0.9%	9,827	55.5%	7,881	44.5%
S00 – T98	5,840	4,547	77.9%	0	0.0%	4,547	77.9%	0	0.0%	4,547	77.9%	0	0.0%	1,293	22.1%	4,547	77.9%
U00 – U99	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
V01 – Y98	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	165,977	110,947	66.8%	199	0.1%	110,480	66.6%	666	0.4%	110,097	66.3%	1,049	0.6%	54,831	33.0%	111,146	67.0%

Comparison MedCod between DICC-005 vs DICC-004

Chapter	Cases	1 character				3 characters				4 characters				Coded by DICC-005		Coded both DICC-004 and DICC 005	
		same code		different code		same code		different code		same code		different code					
A00 – B99	4,513	2,976	65.9%	0	0.0%	2,976	65.9%	0	0.0%	2,908	64.4%	68	1.5%	1,537	34.1%	2,976	65.9%
C00 – D48	11,569	8,259	71.4%	0	0.0%	8,259	71.4%	0	0.0%	8,229	71.1%	30	0.3%	3,310	28.6%	8,259	71.4%
D50 – D89	2,374	2,119	89.3%	0	0.0%	2,119	89.3%	0	0.0%	2,025	85.3%	94	4.0%	255	10.7%	2,119	89.3%
E00 – E90	24,337	22,192	91.2%	0	0.0%	22,192	91.2%	0	0.0%	21,872	89.9%	320	1.3%	2,145	8.8%	22,192	91.2%
F00 – F99	2,258	2,133	94.5%	0	0.0%	2,133	94.5%	0	0.0%	2,128	94.2%	5	0.2%	125	5.5%	2,133	94.5%
G00 – G99	3,321	2,198	66.2%	0	0.0%	2,198	66.2%	0	0.0%	2,052	61.8%	146	4.4%	1,123	33.8%	2,198	66.2%
H00 – H59	16	14	87.5%	0	0.0%	14	87.5%	0	0.0%	14	87.5%	0	0.0%	2	12.5%	14	87.5%
H60 – H95	10	4	40.0%	0	0.0%	4	40.0%	0	0.0%	4	40.0%	0	0.0%	6	60.0%	4	40.0%
I00 – I99	65,189	59,250	90.9%	102	0.2%	58,793	90.2%	559	0.9%	56,478	86.6%	2,874	4.4%	5,837	9.0%	59,352	91.0%
J00 – J99	27,231	23,916	87.8%	41	0.2%	23,916	87.8%	41	0.2%	22,773	83.6%	1,184	4.3%	3,274	12.0%	23,957	88.0%
K00 – K93	14,648	12,895	88.0%	10	0.1%	12,895	88.0%	10	0.1%	12,834	87.6%	71	0.5%	1,743	11.9%	12,905	88.1%
L00 – L99	1,164	815	70.0%	0	0.0%	815	70.0%	0	0.0%	815	70.0%	0	0.0%	349	30.0%	815	70.0%
M00 – M99	691	568	82.2%	0	0.0%	568	82.2%	0	0.0%	568	82.2%	0	0.0%	123	17.8%	568	82.2%
N00 – N99	16,088	14,110	87.7%	0	0.0%	14,110	87.7%	0	0.0%	12,643	78.6%	1,467	9.1%	1,978	12.3%	14,110	87.7%
O00 – O99	63	42	66.7%	0	0.0%	41	65.1%	1	1.6%	41	65.1%	1	1.6%	21	33.3%	42	66.7%
P00 – P96	1,665	1,264	75.9%	0	0.0%	1,264	75.9%	0	0.0%	1,264	75.9%	0	0.0%	401	24.1%	1,264	75.9%
Q00 – Q99	924	752	81.4%	0	0.0%	752	81.4%	0	0.0%	723	78.2%	29	3.1%	172	18.6%	752	81.4%
R00 – R99	26,381	16,007	60.7%	32	0.1%	15,759	59.7%	280	1.1%	15,252	57.8%	787	3.0%	10,342	39.2%	16,039	60.8%
S00 – T98	9,068	7,201	79.4%	0	0.0%	7,196	79.4%	5	0.1%	7,189	79.3%	12	0.1%	1,867	20.6%	7,201	79.4%
U00 – U99	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
V01 – Y98	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%
Total	211,513	176,715	83.5%	185	0.1%	176,004	83.2%	896	0.4%	169,812	80.3%	7,088	3.4%	34,613	16.4%	176,900	83.6%

Results between both dictionaries in underlying cause od death multiple causes

To carry out the test, the Chilean team used the 2016 death database, with a total of 104,026 records, excluding tumors, external causes, maternal causes and children under one year, corresponding to 16,676 records (16%) of the total deaths.

After analyzing the four tests, they obtained results from the rejected records, decreasing by 29.4% of the total processed initially. Therefore, they decide to continue with the tests to reduce the percentage of rejected, which they maintain in their work plan.

With the incorporation of terms that can be used in Chile and their correct standardization, they conclude that they are close to having a first version of a dictionary for Chile, which will be refined to the extent that the terms of the country that are not incorporated are identified in the dictionary provided by Mexico with which they began to work.

Acknowledgements

Development of a virtual assistant for coding with ICD-10-CM/PCS

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ID: 405

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Abstract   Since 2010, we have been successfully using automatic diagnostic coding system over our Emergency discharge reports, a supervised machine learning system, based on Natural Language Processing (NLP) technology, that coded with ICD-9-CM the expressions proposed by doctors, achieving a 95% of success. In 2017 it was established that the new official standard for coding in Catalonia was going to be ICD-10-CM/PCS, and we decided to upgrade the automatic coding system we were using to diagnoses and medical procedures included in the descriptive contents of all discharge reports. The objectives of applying this technology to a new scope were: To make coding easier, with this more complex and exhaustive Classification, to develop a virtual assistant to get a supervised automatic encoding, and to establish the bases for having a multipurpose tool of NLP in clinical documents that could be applied in other healthcare areas and with other medical terminologies. Nowadays, e-coding tools are helpful tool for coding and it's learning in an slow but secure and supervised way, thanks to the customizable confidence threshold for coding proposals and the monitoring module to extract scores in the validation process.

Introduction

On January 2018 the International Classification of Diseases, 10th edition, Clinical Modification/Procedures Coding System (ICD-10-CM/SCP) has become the standard for coding diagnoses and medical procedures in Catalonia in all hospital settings, replacing IDC-9-CM after more than 25 years. ICD-10-CM/PCS presents very important differences in relation to the previous one, such as the change in the structure and the number of characters of the codes, and many more entries (from 17,000 to 140,000), as well as a completely new language for coding procedures. To face this challenge we have decided to upgrade the automatic coding system that we were using in the Emergency Department since 2010 (showed previously in Barcelona 2014 and Tokyo 2016 WHO-FIC Annual Meetings) to the textual contents in discharge reports, developing a virtual assistant to get a supervised automatic encoding from these clinical documents that makes coding easier with this more specific, complex and exhaustive Classification.

Methods & Materials

1. Identification and representation by templates of the document structure of the discharge reports.
2. Web services development between the medical record (SAP™) and CodingSuiteEnterprise™ (cSE)
3. Initial detection of medical trigger words (2,340) to mark discharge reports.
4. Identification and selection by expert coders of semantic expressions in discharge reports from clinical terms previously marked.
5. Coding of semantic expressions with ICD-10-CM/PCS and mapping to ICD-9-CM codes to make a comparative historical analysis.
6. Continuous on line addition to cSE of new semantic expressions previously coded.
7. Validation and refinement of coding.

Results

The development of templates from structured documents started in July 2017 and was completed in November.
An initial test of coding was performed between December 2017 and January 2018.
The 1st of February we started coding templates of all types of hospitalization discharge reports produced in January. Nowadays, we have completed successfully the coding with ICD-10-CM/PCS of diagnoses and procedures of more than 24.000 episodes.
In July, 147,749 semantic expressions identifying diagnoses and medical procedures in textual sections of discharge reports and their correspondent ICD-10-CM/PCS codes (9,090 different codes) were available.
In August, we activated the virtual coding assistant and at this moment we have consolidated 127,940 pairs of semantic expressions + codes for diagnoses and 30,523 pairs for procedures.
The results in table 1 show the departure situation and the modulation capability on the supervision task of coders by tuning the confidence rate threshold in the success of the automatic coding proposal.

Confidence rate in success		Diagnosis		Procedures	
		True +	True -	True +	True -
90%	Predicted as +	40,4%	1,3%	34,6%	0,8%
	Predicted as -	28,5%	29,7%	29,8%	34,8%
75%	Predicted as +	52,1%	3,6%	44,7%	3,5%
	Predicted as -	16,8%	27,4%	19,8%	32,1%

Table 1.- Initial validation of cSE.
Color code has a functional meaning:

Full success. Doesn't need action.

Fatal error. It's predicted with confidence by cSE but it's not true. Needs periodic active review plan.

Near-success. It's well predicted by cSE but without enough trust. Requires confirmation by coders.

Mistake. The prediction is under the confidence threshold alerting coders to make the correction.

In table 2, the scores show a light increase in their values after 4 weeks of virtual coding activity with a confidence threshold of 75% to force supervision (*Reference: http://en.wikipedia.org/wiki/precision_and_recall*)

Confidence Threshold 75%	Diagnosis		Procedures	
	Departure	New training after 4 wks	Departure	New training after 4 wks
Accuracy	0,788	0,795	0,749	0,767
Recall	0.758	0.756	0,689	0,693
Precision	0,909	0,935	0,839	0,928
F1 score	0, 827	0, 836	0,756	0,793

Table 2

Discussion

- The impact in productivity during the learning phase has been high, due to the new interface, the lack of experience in the use of ICD-10-CM/PCS and the need of an important refinement effort to achieve a precise matching.
- When we have considered reliable the cSE learning process done by coders over semantic expressions identifying diagnoses and procedures, we have been able to activate the virtual coding assistant for daily work.
- The experience during this phase has led to improve with our provider the interface usability, adding some tools in order to guarantee the quality of coding.
- We are developing a multipurpose tool of NLP able to identify expressions of interest in clinical documents useful also in other fields like medical research or data analytics, applying or not medical terminologies.

Conclusions

- E-coding tools proofed helpful and confidence threshold can be tuned according the requirements of coding.
- Since the beginning of the implementation, fatal error (0,8-3,6%) is lower than accepted human error for standard tasks like coding (5%).
- E-coding tools are learning in an slow but secure and supervised way.

Acknowledgements or Notes

RULE-BASED MAPPING BETWEEN ICD-10 and ICD10-AM

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Abstract Previously, mapping between classification standards were done manually. An algorithmic approach is explored to find if rule-based mapping aided with a customised search engine can be achieved with high sensitivity with zero false positive. The principal technique used is by description matching of codes of two classification systems, which are ICD-10 to ICD-10-AM. Various refining techniques including removal of stop words, use of synonyms, language localisation, link retrieval and n-grams are used to find the correct mapping. The result is a 99.96% sensitivity, 100% specificity and 99.96% accuracy.

Motivation

There are 12,187 codes in ICD-10 and 16,953 ICD-10-am codes. Manually mapping of these terms require a huge amount of resources. This poster presents an algorithmic approach tested to create maps between two classification systems. In this approach statistical techniques are used to calculate the accuracy of such mappings. For the statistical analysis of the algorithm, the system generated mappings are compared with already mapped 'ground-truth' data and based on the accuracy metric defined below.

Table 1: Confusion Matrix

		Ground Truth	
		POSITIVE	NEGATIVE
Predicted	POSITIVE	True Positive (*TP*)	False Positive (*FP*)
	NEGATIVE	False Negative (*FN*)	True Negative (*TN*)

Source: Manning, Rhagavan and Schütze, 2008

$$Accuracy = \frac{TP + TN}{TP + FP + FN + TN}$$

Accuracy defines the ratio of correctly predicted mappings to the total mappings in the dataset.

List of Techniques

- To do algorithmic mapping a customised search engine that uses the Elastic Search with optimisations are used. This search engine is based on the Vector Space Model technique; using term frequency and inverted document index to find its vector. Similarity index is calculated by comparing resulting vector and search term vector.
- Various data pre-processing techniques are applied before indexing. All indices and search terms are converted to lowercase.
- Apostrophes, dashes, and stop words are removed.
- Synonyms and language localisation normalisation are applied and are essential to give the same clinical meaning to the terms, which is especially important because of differences in spelling between ICD-10-AM and the International version.
- Lastly, an n-grams technique is used to get a more fine-grained text similarity search.

Material

List of ICD10 10th edition and ICD10-AM 10th edition are used. A list of 4635 human-mapped file were used to verify the computer program output.

Methods

Both ICD-10-AM parent and child codes and their descriptions are indexed into the custom search engine. Search terms are obtained from ICD-10 parent descriptions which are already pre-processed. Searching is then performed for each ICD-10 code against ICD-10-AM. The top result is checked if it has the same code. A code match with very similar description match has a high confidence of mapping correctly. If it is a different code, a series of passes are used to find the correct mapping. An exact description match from the top 100 search result are used to find possible maps. If none are found, the correct mapping may have a slight difference in its description. Thus, we used a combination of parent descriptions to give context to the child code. There are a few codes where an exact description match is found, but it is in a different block. Thus, code matching is used to strengthen the confidence. Remaining differences are checked using a three-letter n-grams technique to find the closest description match. Any remaining unmatched mappings are provided with a list of ten possible results where expert clinical coders can manually choose the most accurate code if any.

Once this first stage of mapping is complete, additional logic is used to check if a parent code of the ICD10 maps to an equivalent ICD-10-AM parent. If this matches, all children of ICD-10-AM are automatically mapped according to the parent code mapping. In some instances ICD-10 codes map directly to child codes of ICD-10-AM, where no further child mapping is needed.

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Manning, C. D., Raghavan, P., & Schütze, H. (2008). Introduction to information retrieval. New York, NY, USA: Cambridge University Press.

Results

Out of a total of 12,187 ICD-10 codes, 12,121 mappings were found by this algorithm. Sixty-one codes are cases where no ICD-10-AM exists for the given ICD-10 code. The remaining false negatives include entries with vastly different descriptions and sentence structure which makes text similarity approach challenging to find.

Table 2: Result matrix

		Ground Truth		
		POSITIVE	NEGATIVE	Total
Predicted	POSITIVE	*12,121*	*0*	12,121
	NEGATIVE	*5*	*61*	66
	Total	12,126	61	12,187

Upon verification, no inaccuracies were found in the generated maps when compared with the 4635 human created maps. In fact, eleven mistakes were found in the human-created file. The remaining 7552 maps are direct code matches that do not require human intervention.

A sensitivity of 99.96%, 100% specificity and accuracy of 99.96% are obtained from this approach.

Conclusion

Rule-based mapping from ICD-10 to ICD-10-AM using computer-aided algorithm proves useful in mapping. The remaining unsolved mapping is small enough for human intervention to achieve 100% mapping.

Moving forward, reverse mapping (ICD-10-am to ICD-10) can be achieved by applying the same method. Also the algorithmic rule-based mapping approach used could be utilized to map totally different classification systems such as ICHI and ACHI.

Acknowledgements

International Classification of Diseases (ICD): Coding Personnel Training Worldwide

22-27 October 2018
Seoul, Republic of Korea

ID: 407

Lucía Otero Varela, Cathy Eastwood, Pallavi Mathur, Hude Quan.
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Abstract ICD use and the training provided to coding specialists varies greatly across countries. Through an online survey, we collected information on coders' training characteristics globally. Results from this ongoing project provide a better understanding of ICD-coded data features worldwide and could set the starting point for future research or initiatives focused on improving ICD coding and training.

Introduction

ICD (International Classification of Diseases) is globally used for coding morbidity statistics.

ICD use (version 9th or 10th, and the different modifications), and the training provided to coding professionals varies greatly across countries.

Objectives:
1) To characterize ICD-coded data collection
2) To understand the quality of coder training internationally.

Figure 1. Flow chart of DAD (Discharge Abstract Database) generation

Patient Encounter → Medical Chart → ICD-coded Data → Morbidity Statistics
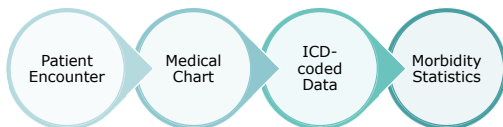
Figure 2. Factors impacting DAD quality

Guidelines, System Resources, Personnel, Documentation → DAD Quality
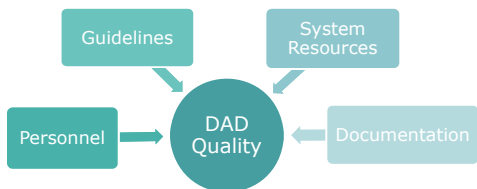
Methods & Materials

Grey and academic literature review

Online survey created to poll information on hospital data collection systems and the training of coding professionals.

Organizations specialized in the topic, such as WHO-FIC and IFHIMA, were contacted.

Using snowball sampling technique, the survey was distributed to potential participants that meet the specific criteria.

Results

Preliminary results from the literature review show the use of ICD in reporting morbidity data around the world (Figure 3).

Data from 48 respondents from 24 different countries has been collected.

Figure 3

Table 1a-b. a) Legend for table 2, explaining the questions (A – E) and the possible answers, as well as the color code. b) Number of country responses per question (N=24 countries)

1a

	Questions	Answers			1b
A	Do you currently use ICD for coding hospital morbidity data?	Yes		No	24
B	Who assigns ICD codes to the hospital morbidity data?	Coder	Physician	Anyone	21 / 3
C	Is ICD coding training available for the person coding?	Yes		No	22 / 2
D	What is the minimum training requirement for a coding specialist?	≥ 2 years	1 - 2 years	≤ 1 year or No requirement	8 / 6 / 10
E	How many certification(s) are available to the person coding?	≥ 2	1	No	11 / 6 / 7
F	Are there continuing education opportunities available?	Yes		No	19 / 5
G	How many ICD resources are available for the coding professional?	≥ 6	3 - 5	≤ 2	5 / 14 / 5

Table 2. Results from the survey. Detailed description of country answers, ordered by best performance (more green results and yellow).

	Country	Responses	A	B	C	D	E	F	G
1	United States of America	5	Yes	Coder	Yes	≥ 2 years	5	Yes	6
2	Australia	2	Yes	Coder	Yes	≥ 2 years	2	Yes	5
3	Canada	1	Yes	Coder	Yes	≥ 2 years	5	Yes	4
4	United Kingdom	4	Yes	Coder	Yes	1 - 2 years	4	Yes	6
5	New Zealand	1	Yes	Coder	Yes	≤ 1 year	2	Yes	6
6	Saudi Arabia	1	Yes	Coder	Yes	1 - 2 years	3	Yes	7
7	Spain	1	Yes	Coder	Yes	1 - 2 years	3	Yes	4
8	Jamaica	2	Yes	Coder	Yes	≥ 2 years	1	Yes	4
9	India	1	Yes	Coder	Yes	≥ 2 years	No	Yes	4
10	Nigeria	3	Yes	Coder	Yes	≥ 2 years	4	No	3
11	Sweden	3	Yes	Coder	Yes	≤ 1 year	2	Yes	4
12	Barbados	2	Yes	Coder	Yes	≥ 2 years	No	Yes	2
13	Netherlands	2	Yes	Coder	Yes	≤ 1 year	No	Yes	7
14	Botswana	2	Yes	Coder	Yes	1 - 2 years	1	Yes	4
15	Republic of Korea	2	Yes	Coder	Yes	1 - 2 years	1	Yes	5
16	Indonesia	3	Yes	Coder	Yes	≥ 2 years	1	No	4
17	Thailand	1	Yes	Coder	Yes	≤ 1 year	1	Yes	4
18	Mauritius	1	Yes	Coder	Yes	≤ 1 year	No	Yes	3
19	Uruguay	1	Yes	Coder	Yes	≤ 1 year	1	Yes	1
20	Germany	1	Yes	Physician	Yes	≤ 1 year	2	No	3
21	United Republic of Tanzania	3	Yes	Coder	Yes	1 - 2 years	No	No	2
22	Chile	2	Yes	Coder	Yes	≤ 1 year	No	No	2
23	Guatemala	3	Yes	Coder	No	≤ 1 year	No	Yes	2
24	Italy	1	Yes	Physician	No	≤ 1 year	No	Yes	2
	Total	48							

Coder Training in Canada

All programs are college-level, accredited by the CCHIM[1] and involve the successful completion of a national certification exam.

Continuing education is required to maintain certification, as well as registering with CHIMA[2,] the professional association.

Conclusions

These survey data will establish the current state of ICD use and coding training internationally for:
- Promotion of ICD, rollout of ICD-11
- Better international comparison of data
- Future research on how improving ICD coding

Footnotes

1 Canadian College of Health Information Management
2. Canadian Health Information Management Association

Implementing ICD-10 in adult mental health services in Emilia Romagna Region

22-27 October 2018
Seoul, Republic of Korea

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(2) Bologna Local Health Authority, Emilia Romagna Region
(3) Health and Welfare Directorate, Emilia Romagna Region

ID: 408

Abstract Emilia-Romagna Region planned a training programme in order to provide basic skills in ICD-10 use in order to code history (using Z codes), medical examination (using R codes), medical diagnosis. Different kinds of exercises were submitted aimed at adopting the main morbidity coding rules, coding clinical diagnosis using ICD-9-CM (current coding system) and ICD-10 (future coding system), and distinguishing between making a diagnosis and coding a condition.

Introduction

Although ICD-10 is not mandatory for morbidity coding in Italy, Emilia-Romagna Region decided to introduce ICD-10 in community mental health services to fill the individual personal record. A regional training programme divided into two steps was planned (Fig. 1) in order to provide basic skills in ICD-10 use (1) , taking into account that ICD-9-CM was the current coding system ((2).

Methods & Materials

The Italian WHOFIC provide expertise in the scientific coordination and in training activities (Fig.2).
The aims of the programme are shown in Figure 3.
The ICD-10 training activities (Figure 1) were carried out from May to June 2018. The programme was organized in 13 training days (duration 7 hours for each day; total 91 hours).
The first step, 2 editions in 4 days in Bologna, aimed at training a selected group of trainees; the second step, 9 editions of one day each, aimed at training a large group of professionals (psychiatrists, psychologists, nursing coordinators and psychiatric rehabilitators), was carried out in 6 different locations of Emilia Romagna Region (Bologna 2 editions, Forlì 2 editions, Modena, Reggio Emilia, Parma, Piacenza, Ferrara). During each training session different methods were used: frontal lessons, small group discussions, case studies (Table 1).

Figure 2 – Coordination and trainers of the regional training programme
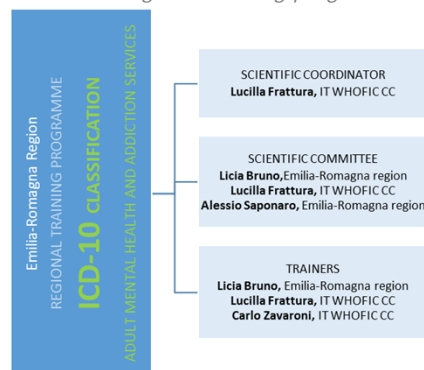
Results

About 250 professionals in different venues participated in the training programme.

Figure 1 – Training programme steps

1st step: training trainees (nearly 50)
- Bologna, 3, 15 May 2018
- Bologna, 4, 16 May 2018

2nd step: training professionals (nearly 350)
- Bologna, 24-25 May 2018
- Forlì, 5-6 June 2018
- Modena, 12 June 2018
- Reggio Emilia, 13 June 2018
- Parma, 19 June 2018
- Piacenza, 20 June 2018
- Ferrara, 26 June 2018

Topics discussed:
- ICD-10 classification tree
- ICD-10 rules for using inclusions, exclusions and notes
- Use of ICD-10 ".8" codes ("other specified")
- Use of ICD-10 ".9" codes ("unspecified")
- Simple basic rules for using ICD-10 dagger-asterisk system
- Use of ICD-10 "F codes" for coding mental health, addiction, and child and adolescent neuro-psychiatric diagnostic statement
- Use of ICD-10 "Z codes" to code medical and social history
- Use of ICD-10 "R codes" to code objective clinical examination
- Coding issues
- Differences between full ICD-10 and "Pocket Guide to the ICD-10 Classification of Mental and Behavioural Disorders"
- Differences between full ICD-10 and Multiaxial classification of psychiatric disorders in children • ICD-10 classification tree differences between full ICD-10 and ICD-10-CM used in "DSM-IV-TR Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision"
- ICD-10 classification tree differences between full ICD-10 and ICD-10-CM used in "Diagnostic and Statistical Manual of Mental Disorders - DSM5"
- Distinction between making a diagnosis and coding health conditions using a standard coding system
- Differences between using a reference diagnostic system for making a diagnosis and using ICD-10 for coding health conditions

according to the WHO coding rules
- How to browse ICD-10 online through the Italian Portal of Health Classifications and to print the three volumes in pdf format using the Portal
- Problems in different Italian translations of the same ICD-10 parts (in particular Chapter V), realized by different translators
- The new ICD-11 hierarchy and the new Chapters of Mental and Behavioural Problem
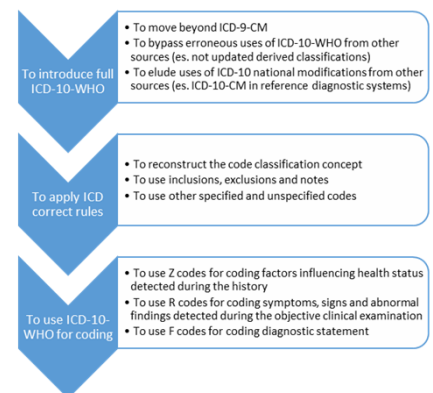

Figure 3 – Training aims

Table 1 - Examples of post-coordination problems in cardiovascular late syphilis

Training main goal	Exercises type	Number of exercises	
		for tutor	for professionals
transition from ICD-9-CM to ICD-10-WHO	mini clinical cases for bridge-coding exercises using both ICD-9-CM and ICD-10-WHO versions	10	6
medical and social history coding in ICD-10	exercises in ICD-10 coding of factors influencing health status detected during the history	-	4
objective clinical examination coding in ICD-10	exercises in ICD-10 coding of symptoms, signs and abnormal clinical findings detected during the objective clinical examination	-	2
mental health, addiction, and child and adolescent neuro-psychiatric clinical cases coding in ICD-10	clinical cases for ICD-10 coding of history, objective clinical examination and diagnostic formulation	4	5

Conclusions

An appropriate and complete use of ICD-10-WHO allows users to fully code conditions and reasons for people encountering health services.

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Apps for The Startup Index

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Abstract The Startup Index (Stl) is a set of simplified ICD-10 code for morbidity and mortality. In order to support the implementation of the system, specially in developing countries and regions, an easy-use tool is required. As required from APN, HOOLLAB designs and develops several Apps for Stl. Here is the introduction to these Apps.

Introduction

To support the grouping of morbidity and mortality statistics in countries where medical resources are too poor to afford fully implementation of complete ICD-10 version, the Startup Index(StL), an easier-use version of ICD-10 with reduction of coding processes, has been agreed by the working committee of WHO-FIC in 2016.

Even with this simplified version, however, manual code assignment is still time consuming as coders have to search from several long code lists. As a result, accessory instrumental tools are needed. As required by APN, HOOLLAB develops a set of applications for both mobile use and website use to further assist the process of code assignment.
In the following sections, those applications, shorted as CASC (computer-aided Stl coding), will be briefly introduced.

Methods & Materials

At first we will describe the underlying database and functions of the CASC.

Database
The database supporting various functions consists of all four sections of WHO APN ICD-10 Morbidity and Mortality List in 2017 Version, that is, *Diseases and Nature of Injury, Neoplasm Table, Table of Land Transport Accident, External Causes of Injury* and *Table of Drugs and Chemicals*. In addition, corresponding Cause of Death codes are included as well.

Function
The consideration on the function of CASC is based on the general concept of user-centered. Specifically, easy to use and full startup index data display are two essential guiding principals. Table 1 gives a function list and corresponding function description.

Search by keywords is the main requirement. It simplifies the laborious human search process to key words entering and code information will be filtered and presented in an organized way, which facilitates the code assignment process. In addition,

considering different matching needs, two matching modes are available, i.e., forward matching (matching from first letter in the diagnosis description) and fuzzy matching (matching from letter in any position).

Furthermore, to support offline use in our mobile applications, users can choose to download underlying database.

Functions	Description
Code system	APN Stl and COD

System setting: Search and matching mode	To search detailed code information by key word matching, including:
	• Forward matching search
	  Matching from first letter
	• Fuzzy matching search
	  Matching from letters in any position

Database download	To download database for offline use

Table 1: Function list and corresponding description for our applications

Results

Guided by the easy to use and full startup index data display principals, applications for both mobile and website scenarios are designed and developed. Functions for various applications are consistent, with the searching by keywords as the fundamental use case.

Application for Android use

Figure 1: The first application applies to the use in mobile with Android system. Users can download the ".apk" installation package and install it in their mobiles.

Using these applications enable the coder to find an ICD-10 code within 4 steps, i.e.
1. Identify the type of statement to be coded and refer to the appropriate section of the APN ICD-10 Simplified version. (If the statement is a disease or injury or other condition classifiable to Chapters I-XIX or XXI, consult

Section I. If the statement is the external cause of an injury or other event classifiable to Chapter XX, consult Section II.)
2. Locate the diagnosis term. (Forward & Fuzzy matching mode)
3. Select the ICD-10 code according to the patient context.
4. Assign the code.

Application for website use
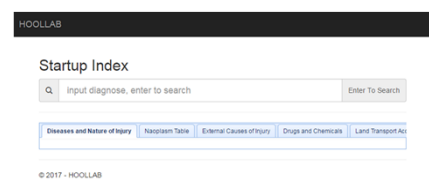
Figure 2: the homepage of startup index app for web

This application is web-based, which can be accessed by clicking its url link.

The function and using instructions are consistent with that for mobiles. Compared with mobile application, web application avoids the need for installation and is available as long as network is connected, which is very flexible.

Conclusions

CASC, the set of Startup index applications provide the fundamental function for searching ICD-10 code and the same searching steps which follows strictly with WHO APN ICD-10 Simplified Morbidity and Mortality List official instruction. So it could be used as a startup tool for grouping of morbidity and mortality statistics in low resource countries.

Besides, CASC provider users for both mobile and website, which can satisfy different requirements in different using contexts.

Considering the data completeness and easy-use characteristics of CASC, they will further aid the grouping of morbidity and mortality statistics in low resources countries.

Acknowledgements or Notes

Thanks for the collaboration, guide and support from APN, CC Thailand and CC China.

A Study of the Burden of Disease in the Caribbean using the DALY Health Measure

22-27 October 2018
Seoul, Republic of Korea

ID: 410

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Abstract Analysis of mortality data for CARPHA Member States (CMS) routinely includes mortality rates and Potential Years Loss of Life (PYLL). This study sought to generate other indicators such as Disability Adjusted Life Years (DALYs) estimates for CMS, to augment mortality analyses. Ranking of deaths, using DALYs resulted in different leading causes of death than those traditionally seen; leading causes of death by DALYs differed between the CMS and those of the Americas, suggesting sub-region specific DALY analyses be produced; and the need for region specific YLDs (Year Lost due to Disability) for more accurate calculation of the DALYs was identified.

Introduction

Regional analysis of mortality data routinely includes statistics such as mortality rates and PYLLs. While these are useful, they do not consider the effects of being ill for many years before death, an important aspect of assessing the health of a population. The DALY as a measure of the burden of disease (BOD) includes time lived with disability and time lost to premature deaths.

Existing BOD studies[1] using DALYs, group Latin America with select small Caribbean islands which is not reflective of the Caribbean. The CMS populations range between 5,000 and 2.7 million with different economic and social development to that of Latin America. No one study has examined all the islands and addressed the Caribbean as a separate region.

This study sought to generate DALY estimates for select countries in the English and Dutch-speaking Caribbean to augment mortality analyses.

Methods & Materials

For the purpose of this study, Jamaica, Trinidad & Tobago, Guyana, Suriname, Barbados, Belize, St. Lucia and St. Vincent & the Grenadines were selected as they represented 97% of the deaths for the region. The period 2000-2011 was selected as it reflected the most complete set of data for the countries at the time of the study

The mortality and population data for the period 2000-2011 were sourced from the CARPHA database and analysed using SEER*Stat along with Microsoft Excel. Mortality rates and DALYs were generated for all causes of death and ranked. DALYs for diseases were calculated as the sum of the Years of Life Lost (YLL) due to premature mortality and the Years Lived with Disability (YLD) for people living with the health condition or its consequences. In generating the YLLs, the WHO 1999 Life Tables for 191 Countries[2] were used. As the datasets for YLDs were unavailable for the region, YLD statistics for all causes were taken from Mathers, Stein et al, "Burden of Disease 2000: Version 2 Methods and Results.

A note on CARPHA
The Caribbean Public Health Agency (CARPHA) serves 24 member states, including all English- and Dutch-speaking Caribbean countries and Haiti.

Results

The top 3 leading causes of death by numbers of deaths were Diseases of the heart; Cerebrovascular; and Diabetes, which accounted for almost 40% of the deaths during the study period. When comparing the leading causes of death in 2000 to that of 2011, the top 10 causes of death, remained the same, with the order of the top 3 conditions also unchanged (*see Table 1*).

Ranking using the DALYs, showed a different top three conditions to that of the ranking by number of deaths. Accidents and adverse effects; conditions arising from prenatal period; and digestive systems emerged as the top three conditions for the study group even though they attributed to fewer numbers of deaths *(see Table 2)*.

The analysis also revealed that when the region is analysed separately from that of Latin America, the results differ. In the 2010 World Bank Burden of Disease study for the WHO-defined Region of the Americas[3], diseases of the heart; forces of nature; and interpersonal violence are the top three DALY-ranked causes of death, while accidents and adverse effects; conditions arising from prenatal period; and digestive systems emerge as the top three for CMS (*see Table 3*).

Limitations

YLDs for the English-speaking Caribbean were not available and a proxy was taken from the 2000 WHO study. YLDs were also not available for all the causes of deaths. For specific age categories, YLDs were not available from the proxy which would have allowed for identifying age groups most at risk.

Table 1: Top 10 causes of death in 2011 (by number of deaths) with the percentage change, 2010-2011

Causes of death	2000 Rank		2011 Rank	% change 2000-2011
Disease of the heart	1		1	8%
Diabetes mellitus	2		2	21%
Cerebrovascular Disease	3		3	29%
HIV	4		4	-55%
Digestive System Disease	5		5	-6%
Prostate Cancer	6		6	20%
Conditions arising from perinatal period	7		7	22%
Pneumonia and influenza	8		8	36%
Respiratory system disease	9		9	0%
Accident and adverse effects	10		10	88%
Communicable				
Non communicable				
Injuries				

Conclusions

The study showed that DALYs provided a different view of the leading causes of death and suggests that DALYs be considered as another health measure when analysing mortality data for the Caribbean Region. The differences in the DALY estimates between the Americas and sub-region, also highlighted the need for sub-regional analyses.

To calculate more accurate estimates of DALYs, it is recommended that the next step be a quality of life study to develop Caribbean YLDs. With more accurate regional YLDs and DALYs, the economic burden of the top diseases could be more accurately determined.

Table 2: Top leading causes of DALYs with YLDs, YLLs and Deaths for Study CMS

Daly Rank	Causes of death	DALYs	%	YLD	%	YLL	%	Deaths	%
1	Accidents and adverse effects	3,890	6.8	3,210	7.5	680	4.7	19	3.0
2	Conditions arising from prenatal period	2,353	4.1	1,135	2.6	1,218	8.5	17	2.6
3	Digestive Conditions	2,305	4.0	1,899	4.4	406	2.8	24	3.7
4	Disease of the Heart	2,105	3.7	267	0.6	1,838	12.8	116	18.0
5	Diabetes Mellitus	1,601	2.8	563	1.3	1,038	7.2	64	10.0
6	Cerebrovascular Disease	1,525	2.7	495	1.2	1,030	7.2	72	11.2
7	HIV	1,249	2.2	289	0.7	960	6.7	25	3.9
8	Chronic obstructive pulmonary disease	1,020	1.8	838	2.0	182	1.3	12	1.9
9	Pneumonia and Influenza	832	1.5	498	1.2	334	2.3	17	2.6
10	Prostate Cancer	190	0.3	10	0.0	180	1.3	17	2.6
Total from Top Causes		17,070	29.8	9,204	21.4	7,866	54.8	383	59.6
Total from ALL Causes		57,313	100	42,964	100	14,350	100	643	100

Table 3: Top causes of death by DALY rankings

	Present 2011 Study	World Bank GBD 2010 [3]
1	Accidents and adverse effects	Disease of the Heart
2	Conditions arising from prenatal period	Forces of Nature
3	Digestive Conditions	Interpersonal Violence
4	Disease of the Heart	Road Injury
5	Diabetes Mellitus	Major Depressive Disorder
6	Cerebrovascular Disease	Low Back Pain
7	HIV	Stroke
8	Chronic Obstructive Pulmonary Disease	Lower Respiratory Infections
9	Pneumonia and Influenza	Diabetes
10	Prostate Cancer	Preterm Birth Complications

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Acknowledgements or Notes

Demographic and clinical factors associated with having ischemic heart disease as a multiple contributing cause of death among diabetes deaths

22-27 October 2018
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ID: 411

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Abstract   Multiple causes of death data were used to analyse demographic and clinical factors associated with having ischemic heart disease (IHD) as a multiple contributing cause of death (MCD) among deaths with diabetes mellitus (hereafter DM) as the underlying cause of death. Information on MCD contributes largely to characterizing DM mortality estimates, and factors identified in this study could be used to reduce DM and IHD comprehensively.

Introduction

Between-country comparability of mortality statistics is a global public health challenge, especially for cause-of-death assignment of diabetes mellitus (hereafter DM) in relation to cardiovascular disease including ischemic heart disease (IHD). DM increases risk of IHD. The multiple contributing causes of death (MCD) representing comorbidity are not used to classify mortality cause. The underlying cause of death (UCD) becomes the cause of death.

To prevent DM and IHD comprehensively, this study has determined demographic and clinical factors for IHD as an MCD among deaths with DM as the UCD (DM-UCD).

UCD=DM

MCD=IHD

Cause of death=DM

Table 1: Frequencies of major contributing factors for IHD and DM

	United States			Brazil		
	Frequency	**% out of all DM-UCD with IHD as MCD**	**% out of all deaths (n=305,885)**	**Frequency**	**% out of all DM-UCD with IHD as MCD**	**% out of all deaths (n=367,717)**
At least one of the contributing factors	61,304	52.8	16.7	31,748	53.3	8.6
Hypertension	45,549	39.2	14.9	30,406	51.1	57.2
Obesity	5,501	4.7	1.8	1,308	2.2	2.5
Smoking	17,557	15.1	5.7	1,142	1.9	2.2
High cholesterol	15,237	13.1	5.0	1,365	2.3	2.6
None of the contributing factors	54,821	47.2	17.9	27,798	46.7	9.1
Total	116,125		38.0	59,546		16.2

Results

- IHD appeared as an MCD in 38.0% and 16.2% of 305,885 deaths in the US, and 367,717 deaths in Brazil among DM-UCD, respectively (table 1).

- Factors significantly associated with having IHD as an MCD were different by country and sex (table 2).

- The odds ratio of having IHD as the MCD increased among all sexes and both countries for smoking and having high cholesterol, whereas country and sex differences were observed only for hypertension and obesity (p-values <0.05) (table 3).

Materials & Methods

Death records including cause of death were obtained through the Department of Information, Evidence and Research, World Health Organization, which were originally from the sources below:
- Centers for Disease Control and Prevention (CDC) in the US for years 2012-2015
- Sistema de Informação sobre Mortalidade in Brazil for years 2006-2009 and 2011-2013

A logistic regression analysis was conducted to identify factors associated with having IHD as an MCD among DM-UCD.

Table 2: Significant factors that influence having IHD as the MCD among DM-UCD

Sex	**Significant factors in common**	**Significant uniquely in the United States**	**Significant uniquely in Brazil**
Both sexes	- Age↑↓ - Race↑↓ - Marital status↑↓ - Place of death↑↓ - Having CKD↓ - Having other CVD↓ - Having stroke↓ - Smoking↑ - High cholesterol↑	- Year↓ - Autopsy performed↓	- No assistance of medical staff ↓ - Autopsy performed↑ - Education level↑↓ - Having hypertension↑ - Being obese↑
Unique in men		- Being obese↑	
Unique in women		- No residency↑ - Having hypertension↓	

Table 3: Odds ratio of having IHD as the MCD among DM-UCD

	United States		Brazil	
	Men	**Women**	**Men**	**Women**
Contributing factors	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**
Smoking as MCD				
No	1.00	1.00	1.00	1.00
Yes	1.74 (1.69–1.80)	1.80 (1.73–1.88)	1.56 (1.35–1.80)	1.69 (1.40–2.05)
Hypertension as MCD				
No	—	1.00	1.00	1.00
Yes	—	0.96 (0.94–0.99)	1.57 (1.50–1.65)	1.66 (1.59–1.73)
Obesity as MCD				
No	1.00	—	1.00	1.00
Yes	1.08 (1.03–1.14)	—	1.61 (1.34–1.94)	1.28 (1.13–1.45)
Cholesterol as MCD				
No	1.00	1.00	1.00	1.00
Yes	1.65 (1.59–1.71)	1.71 (1.64–1.78)	4.89 (3.95–6.05)	3.87 (3.27–4.59)

Conclusions

In better characterizing DM mortality estimates, MCD could play an important role. Differences in patterns of IHD as comorbidity of DM deaths were observed between the US and Brazil.
Factors identified in this study could help detect population subgroups with masked IHD among DM deaths. Representation of IHD comorbidity among DM deaths is needed for adequate public health measures to be taken, leading to lower mortality through a more target-specific intervention for non-communicable disease.

Acknowledgements or Notes

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506	Development of Korean Version of a Standard General Population Survey Questionnaire of ICF Generic Set and Instructional Guideline: An Initial Study	Jun-Ah Song, Wanho Kim, Gwihyun Kim, Min Kim, Soonok Bae, Soonkoo Myoung
507	A Review on the possibility of Joint Use of the Reference Classifications Using ICF Field Test Case Studies	Lee Yeojin, Choi Won, and Yi Nari
508	Using two classifications in community-based health care to describe patients' functioning, goals, needs, interventions, and results in EHR	Ann-Helene Almborg, Ulrika Eriksson

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509	Laying the foundation for a core set of the ICF for community-dwelling adults aged 75 years and above in general practice	J. Tomandl, S. Gotthardt, S. Book, et.al.
510	Increasing accessibility of ICF for Flemish users	Huib Ten Napel, Dominique Van de Velde, et.al.
511	Which are contextual factors that are important to predict return to work – Results of a mapping exercise using evidence from scientific literature and experts' opinion	Michaela Coenen, Arlette Baxmann, Eva Esteban, et.al.
512	Support and relationships as environmental factors: proposals to improve the ICF	Lucilla Frattura
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514	Assessment of rehabilitation outcomes : from patient to state	A.Shoshmin, Y. Besstrashnova, et.al.
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516	Changing the perspective of functioning / disability: efforts in Mexico for the implementation of the ICF	Yañez, M.; Avendaño, D., Alanis, R; Andrade, C. et al.
517	Effects of a short course on motivation, attitude and knowledge regarding the ICF	Zaqueline Guerra, Eduardo Cordeiro, Giancarlo Lucchett

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518	Impact of ICF in improving Knowledge, Attitudes and Behaviour regarding Interprofessional Practice among Health Professionals in Rwanda	Sagahutu JB, Kagwiza J, Cillliers F, Jelsma J.
519	ICF Reporting Criteria: Guidelines for quality reporting on use of ICF	Rikke Daugaard, Catherine Sykes, et.al.
520	Using ICF on report codification	Paulo Eugênio Silva, Bruno Metre Fernandes, et.al.
521	Narrative research and medicine in neurology and neurosurgery: the biopsychosocial methodological approach based on the ICF Classification of WHO	Covelli V., Schiavolin S., Guastafierro E., et al.
522	Suggestions for updating WHODAS 2.0	Lucilla Frattura, Paula Tonel, et.al.
523	WHODAS 2.0 defined predictors of disability in patients with idiopathic intracranial hypertension	Alberto Raggi, Matilde Leonardi, et.al.
524	The applicability of the World Health Organization Disability Assessment Schedule (WHO-DAS 2.0) in Japan	Masaaki Otaga
525	The IDAGIT Study on ageing in Italian population: preliminary results	Davide Sattin, Erika Guastafierro, et.al.

ID	Title	Authors
526	The Promotion of cooperation among pediatric rehabilitation experts in Japan-using Ability for Basic Physical Activity Scale for Children (ABPS-C)	Satoshi Tamai, Keiji Hashimoto, et.al.
527	Employment and Disability: Assessing working capacities with WHO-DAS 2.0 and ICF Checklist dedicated to labor policies	Guastafierro, E.; Covelli, V.;et al.

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Updates on the ICF e-learning Tool

22-27 October 2018
Seoul, Republic of Korea

ID: 501

Katharina Ricci [1,2], Sandra Kus [1,2], Melissa Selb [1,3], Michaela Coenen [1,2]

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Abstract This poster provides information on the current state of the ICF e-learning Tool (www.icf-elearning.com), a web-based, self-teaching tool that has been developed under the auspices of EIC with valuable support from FDRG. The English-language version of this e-learning tool was field-tested in the Fall 2017 and modified according to the field-testing results. The link to the final version is now on the WHO website. The ICF e-learning Tool is currently being translated into several languages. Results of the field-testing and work in progress are presented in this poster.

Introduction

The ICF e-learning is a web-based, self-teaching tool that has been developed under the auspices of the Education and Implementation Committee (EIC) with valuable support from the Functioning and Disability Reference Group (FDRG). The aim of the ICF e-learning Tool is to present the framework and conceptualization, as well as possible application areas of the International Classification of Functioning, Disability and Health (ICF) to potential users.

This poster aims to report on the results of the international field-testing and to introduce the translation process being conducted by members of the WHO-FIC Network.

Update on Activities

From October 2017 to September 2018 we performed the following tasks:

- An international field-testing of the English-language pilot version was performed using a web platform.
- The pilot version was revised based on feedback and recommendations from the field-testing participants.
- The layout of the ICF e-learning Tool was changed according to WHO's recommendations.
- A short report on the field-testing was provided to WHO, as well as EIC and FDRG.
- To facilitate the translation process, an Excel sheet containing the content (text) of the ICF e-learning Tool was distributed to members of the WHO-FIC Network who have agreed with WHO to translate the tool.
- The translation process has started. Translations are expected to be available in Danish, Dutch, Finnish, French, German, Italian, Japanese, Korean, Polish, Portuguese, Spanish, Swedish and Russian.
- A first draft of the Danish version fully implemented in the software Articulate Storyline® has been developed.
- Layout changes as well as Privacy Policy issues in accordance with the latest data protection law have been addressed on the current homepage.

Results

From September 2017 to January 2018 we field-tested the English-language pilot version of the ICF e-learning Tool. In total, 82 persons from different countries around the world participated in this exercise (see Fig. 1).
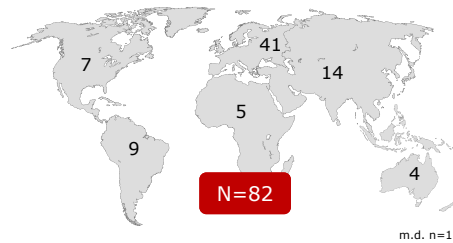
Fig. 1: Geographical distribution of participants of the international field-testing.

The participants were asked, among other things, to provide information on:

- Comprehensiveness
- Understandability
- Feasibility
- User-friendliness

of the ICF e-learning Tool. The overall results were positive.

In the beginning of 2018 members of the WHO-FIC Network initiated the translation process to other languages using the Excel sheet containing the English-language pilot version as a template. The current status of the translation process is displayed in Tab 1.

ICF e-learning Tool: translation process		
Language	**Status**	**Finalization of translation**
Danish	Translation finished, first draft of tool in Articulate Storyline completed	08/2018
Dutch	In progress: cross-checking the parts on consistency	Expected for 12/2018
Finnish	version 2014 translation finished; check with current translation	Expected for 10/2018
French	translation of the 2018 content finished	Expected for 09/2018
German	In progress	Expected for 10/2018
Japanese	In progress	
Korean	In progress	Expected for 12/2018
Italian	Planned; request for translation has to be submitted	
Polish	Request for translation has been made	
Portuguese (Portugal)	In progress	
Portuguese (Brazil)	Translation checked with version 2014; translation of content and glossary completed	08/2018
Russian	In progress; check with version translated in 2014	Expected for 10/2018
Spanish	In progress	Expected for 10/2018
Swedish	Ongoing translation; checking earlier translated version	Expected for 10/2018

Table 1: Current status of translation process per language (August 29, 2018).

A first software-based draft of the Danish version integrated country-specific pictures and additional content (see Fig. 2). Necessary layout adjustments were also made.

Fig. 2: Screenshot of a sample page of the Danish ICF e-learning Tool.

The ICF e-learning homepage now indicates the translated versions that will be available in the future (Fig. 3).

Fig. 3: Screenshot of the welcome page of the ICF e-learning Tool.

Next steps

After completion of the translation process the next steps will be taken:

- Selected sections from every language version will be back translated to English to validate the translation.
- A paper on the development of the ICF e-learning Tool will be submitted to a peer-reviewed journal.

The launch of the Danish and German versions of the ICF e-learning Tool is planned by the end of 2018.

Acknowledgements

3rd INTERNATIONAL SYMPOSIUM ON ICF EDUCATION 2018

22-27 October 2018
Seoul, Republic of Korea

ID: 502

Liane Simon[1,2], Melissa Selb[1,3], Matilde Leonardi[4], Andrea Martinuzzi[5], Huib Ten Napel[6], Stefanus Snyman[7], Catherine Sykes[8], Yukiko Yokobori[9], Michaela Coenen[1,10]

[1] ICF Research Branch, a cooperation partner within the WHO Collaborating Centre for the Family of International Classifications in Germany (at DIMDI); [2] MSH Medical School Hamburg, University of Applied Sciences and Medical University; [3] Swiss Paraplegic Research; [4] Fondazione IRCCS Istituto Neurologico Carlo Besta; [5] "E. Medea" Scientific Institute Conegliano-Pieve di Soligo Research Centre; [6] WHO-FIC Collaborating Centre in the Netherlands, National Institute for Public Health and the Environment; [7] Nelson Mandela University; [8] University of Sydney; [9] Japan Hospital Association; [10] Chair for Public Health and Health Services Research - IBE, Ludwig-Maximilians-Universität München

Abstract   On 13 April 2018, the 3rd International Symposium on ICF education took place in Hamburg, Germany. A multidisciplinary group of 96 persons from 32 nations in all 6 WHO world regions attended the symposium. This unexpectedly large and diverse turn-out underscores the growing interest in the ICF and its implementation all around the world. This poster presents some of the discussion topics, impressions and take-aways from the symposium.

Introduction

The *3rd International Symposium ICF Education* took place on 13 April 2018 in Hamburg, Germany, building on the first one held in 2015 in Finland and the second one in 2017 in South Africa. In line with the symposium's mission to bring together people from around the world who are using the International Classification of Functioning, Disability and Health (ICF) in clinical practice, research and teaching, 96 persons from all six WHO world regions attended the conference.

The symposium concluded a week of independent but interconnected ICF meetings that commenced with the mid-year meetings of the Functioning and Disability Reference Group (FDRG) and the Education and Implementation Committee (EIC), and continued with the German National ICF Users Conference. A pre-symposium joint session with the German National ICF Users Conference encompassed three presentations that addressed the use of the ICF in Germany.

Methods & Materials

The symposium officially started with talks about functioning and ICF education given by the EIC and FDRG co-chairs. Short oral presentations of selected posters (from 43 displayed posters) followed in **two poster sessions,** each covering the main topics of the symposium – teaching the ICF and use of the ICF. These themes were also reflected in the discussions held in **five work-shops:**

1. Teaching ICF in an interprofessional context
2. Teaching others to teach about the ICF (Train the Trainer)
3. Teaching health administrators and decision makers about the ICF
4. Joint use of the ICF with other WHO classifications
5. ICF to monitor health and health-related outcomes

Results

The *3rd International Symposium* enabled its participants to share their experiences and learn from each other. The active participation from all delegates was very helpful to address and discuss various topics on ICF education, taking into account the perspectives from all six WHO world regions. Podcasts of the talks given by the co-chairs of EIC and FDRG and oral poster sessions can be downloaded here:

The following posters were presented at the **oral poster session**:

Mihai Berteanu	Is the ICF capable of scientific quantifications of moral damages in malpractice trials?
Volodymyr Golyk	ICF Implementation in Ukraine: System-wide approach
Merete Tonnesen	The use of ICF as a framework for an analysis of rehabilitation goals of patients with rheumatic diseases
Anabela Martins	Diagnosis process based on movement and functioning: A study among musculoskeletal physical therapists from English-speaking countries
Sven Kottysch	Implementing ICF in early childhood intervention centers in Germany (ICF mapping, phase 2)
Hanan Demyati	Impact of learning the ICF for children/youth framework as a clinical reasoning tool for pediatric physiotherapists working with children with cerebral palsy
Kirsi Niittymaki	The Spiral – ICF-based board game
Beatrix Alguren	The development of high quality person centered care through integration of ICF into health records – An innovation project
Eduardo Santana Cordeiro	ICF multifunctional portal: A project for inter-professional and trainer education
Melissa Selb	Training trainers to train others on the ICF – An approach that doesn't have to be a tongue twister
Jean Baptiste Sagahutu	Impact of ICF in improving behavior regarding interprofessional practice among heath professionals in Rwanda

The workshops:

Teaching ICF in an interprofessional context

During this interactive workshop participants practiced how to innovatively teach the ICF with the aim of facilitating interprofessional collaboration, both in undergraduate and professional settings.

Teaching others to teach about the ICF (Train the Trainer)

The attendees discussed on their own requirements for a trainers course for different audiences based on the content and structure of the Dutch Trainer the Trainer® Course.

Results   continued

Teaching health administrators and decision-makers about the ICF

Conducted as an interactive mini ICF training, this workshop highlighted content that health administrators and decision-makers would want to know about the ICF.

Joint use of the ICF with other WHO classifications

After the introduction of WHO-FIC, ICD-11, ICF, and ICHI, attendees carried out hands-on mapping exercises using various case studies.

ICF to monitor health and health related outcomes

During the workshop the use of ICF-related instruments in the Czech Republic, France, UK was presented. The issues that emerged were the usefulness of ICF's common language, the difficulty of its integration in systems and services, and the need to have it for planning and sharing data and information. The focus groups with participants from various countries were lively and fruitful for all.

Conclusions

Thanks to the interesting and thought-provoking talks and poster presentations, as well as the active participation from the attendees both onsite and online, **the 3rd International Symposium ICF Education was a great success!**

We are looking forward to the 4th International Symposium ICF Education…

Figure 1 & 2: Pre-symposium joint session

Who speaks ICF?
Implementation of ICF in early childhood intervention centers in Germany

22-27 October 2018
Seoul, Republic of Korea
ID: 503

Authors: Liane Simon[1,2], Sven Kottysch[1], Alexander Mevs[1], Julia Paulsen[1]

1: ICF Research Institute at MSH Medical School Hamburg Germany 2: ICF Research Branch, a cooperation partner within the WHO Collaborating Centre for the Family of International Classifications in Germany (at DIMDI)

Abstract   Within the last year, the International Classification of Functioning, Disability and Health (ICF) has become well-known in early childhood intervention centers (EICs) in Germany. Started in 2016, the "ICF Mapping Project" is a project that aims to systematically review ICF usage in the EICs. We conducted a survey in 2017 and again in July 2018. In this poster, we present the results of the follow-up survey sent to all EICs in Germany (N=1000).

Introduction

Germany passed a new participation law (*Bundesteilhabegesetz*) that declares the use of the ICF as mandatory for rehabilitation and social institutions in Germany starting in 2018. Consequently, there is a push to develop ICF-oriented tools and instruments, and the number of instruments for different purposes is increasing. In 2016 the ICF Research Institute (IRIs) at MSH Medical School Hamburg started a project "ICF Mapping" with the primary objective of exploring the status of ICF use in all EICs in Germany as well as the learning/training needs of the EIC professionals.

Methods & Materials

The results of a first survey (in 2017) was presented at the 2017 WHO-FIC Annual Meeting. A follow-up survey took place online in July 2018 using the same questionnaire as in 2017 with only one additional question addressing the use of newly developed needs assessments. We sent the link to the online survey to the heads of all EICs in Germany (n=1000).

Recap 2017 Results

The EICs across Germany's 16 Federal states are in various stages of ICF implementation. Figure 1 shows the allocation of the 329 returned responses to the 2017 survey (n_{2017}) to federal states, showing regional differences in usage.
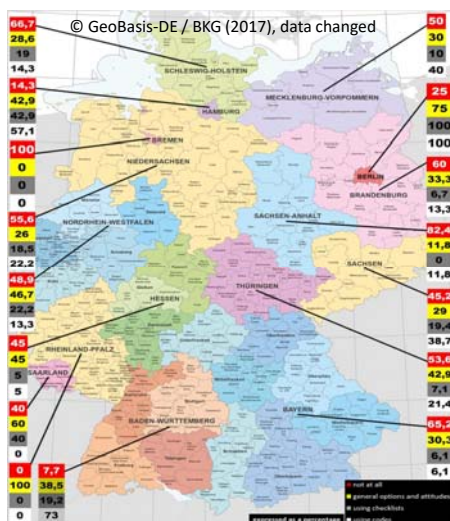
Figure 1: use of ICF in the 16 provinces of Germany in 2017 (multiple answers possible)

Results of the 2018 Survey

Of the 1000 questionnaires sent out to the EICs in 2018 164 were returned (n_{2018}), rendering a §of 16,4% (-16.5 percentage points compared to 2017).

In our sample (n_{2018}=164), 118 EICs indicated that they are using the ICF in different ways (+25.5 percentage points compared to 2017):

- 93 EICs use ICF as a framework/ attitude (+6.7 percentage points)
- 49 EICs use the ICF-checklists (+12.9 percentage points)
- 50 EICs use codes or ICF items for intervention plans (-2.4 percentage points)
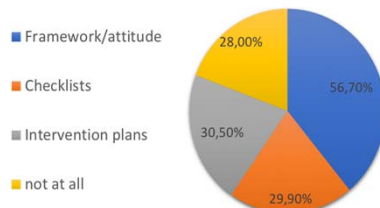
Figure 2: How do you use ICF? Answers of 164 EICs in Germany (multiple answers possible)

In the 2018 sample, 46 EICs indicated that they do not use the ICF in any way (-25.2 percentage points). The majority has not participated in an ICF training nor introduction class (-1.9 percentage points).
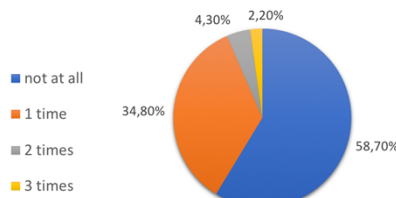
Figure 3: 27 of 46 EICs not using the ICF have indicated that they have not participated in an ICF training nor introduction class.

Bundesministerium für Arbeit und Soziales (2017) Bundesteilhabegesetz. [Internet]. Available at: www.bmas.de/SharedDocs/Downloads/DE/PDF-Meldungen/2016/bundesteilhabegesetz.pdf?__blob=publicationFile&v=7. Accessed 7 August 2018.

Simon, L, Kottysch, S. Irmler, M., Kindervater, A.(2017):Do you speak ICF? Poster 2nd international symposium on ICF education, Cape Town, South Africa.

Kottysch, S., Simon, L., Mevs, A., Paulsen, J. (2018): Implementation of the ICF in early childhood intervention centres in Germany, Poster 3rd International Symposon in ICF Education, Hamburg, Germany

Acknowledgements

The 164 survey responses in 2018 can be allocated to 14 federal states. We did not receive answers from 2 states (see figure 4).
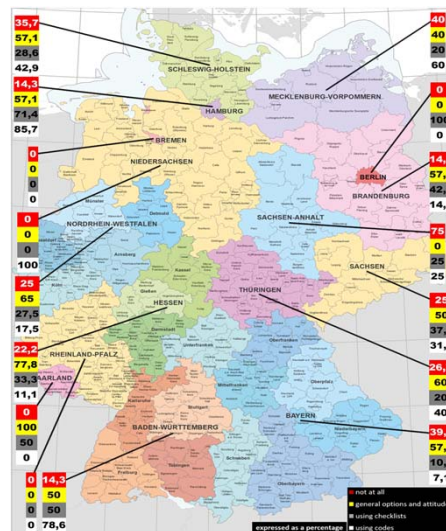
Figure 4: Use of ICF in the 16 German states in 2018 (multiple answers possible)

Discussion /Conclusions

The new German participation law explicitly requires the use of the ICF. A complete reform of the social system over the next few years is planned. Accordingly the use of the ICF in EICs is also increasing.

The results of the 2017 and 2018 surveys show that in 2018 the use of ICF checklists (29.9%) and of ICF codes in intervention plans (30.5%) have increased compared to the 2017 (13.4% and 21% respectively). For the first time, ICF-based needs assessment procedures developed by the responsible authorities were also used by 23 EICs (14%).

The survey results also show that:

- There is a strong need for training classes.
- Also needed are ICF -based instruments that are especially suitable for daily routine practice in EICs and for assessing needs in early childhood in general.
- The increasing variety of ICF-based assessments and instruments requires a more detailed analysis.

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Functioning status and Indemnities in Brazil

Authors: Eduardo Santana Cordeiro
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Abstract ICF can be the best guideline to develop ways for labor indemnities calculation. The codes set shows the functional health status, what can be related to the environmental factor at the workplace. Then, new tools ICF-based must be used to help professionals, workers and layers on indemnities calculations, when appropriate.

Introduction

The table from Superintendence of Private Insurance (SUSEP in Portuguese Language) is frequently used for compensation payments in labor relations without having been created for this purpose. In fact, the origin, the methods and the scientific basis for using that as a table are not known. In a preliminary analysis, it is possible to perceive that the instrument is restricted to the body functions and structures. It intended to establish a fixed percentage, without considering the peculiar conditions of each case of damage arising from the employer's civil liability work in the face of Article 7 and subsection XXVIII of the Brazilian Federal Constitution. Then, the SUSEP table, even if it has some practical applicability, can not be considered as a criterion for disability attribution derived from an accident and illness related to work or to secure labor indemnities. On the other hand, the ICF, as a tool published by the WHO, has the necessary and inherent complexity of the classification process to determine the status of functioning or incapacity for work. Consequently, it is the most appropriate tool for justification and calculation of workers' compensation.

Methods & Materials

Then, a new form is being developed, called ESC (escape) Table. This table establishes intermediate of percentiles. To define an exact percentage, the qualifiers of several categories of the ICF should be considered for description of the case, also considering the median of the average of the qualifiers and adding to the qualifier floor of the main category.
The point is to consider the relationship between body and environment, but looking for the environmental factors as a start point.

Figure 1 – Environmental factors as start point
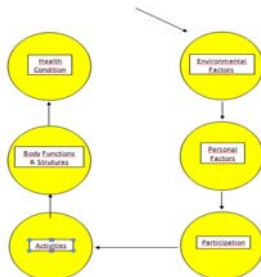
Results

The following related topics linked to the ICF categories must be considered by legal professionals, technical assistants and judicial issues in cases of labor compensation. Environmental factors (part 1): 1. Was the worker subjected to continuous, intermittent noise or impact noise below the recommended levels (category ICF e2500)? 2. Was the worker exposed to heat or cold above the recommended levels (category ICF e2250)? 3. Was the worker exposed to ionizing radiation or invariably unhealthy chemical agents (category ICF e298)? Was the worker exposed to mineral dust (category ICF e2601)? 5. Was it exposed to humidity above the recommended levels (category ICF and 2251)? Environmental factors (part 2) including activities: 1. Does the company have descriptions of the tasks and activities of the claimant? Does it have a description of the degrees of functioning required or possible for each job (ICF categories from d1 to d9)? 2. From the ergonomic point of view, the work must be adapted to the characteristics and vulnerabilities of the worker. Is there a description of these characteristics and vulnerabilities (category ICF from d1 to d9 associated with the categories of e1 and e4)? 3. In case of adaptations, does the company verify that it did so considering the description of the activities and not the tasks (category ICF from d1 to d9 associated with the categories of e1, e2 and e4)? Are there ergonomic reports based on the individual activities that show that there was comfort in the work (ICF category from d1 to d9 associated with the categories of e1, e2 and e4)? Inclusion of body functions and structures: 1. The problem in the body and the alterations of capacity and performance were of accidents of work accidents? Temporary pressure? Hierarchy? Pace of work? Repetitive movements with verifiable kinesiological relationship (ICF categories of components b, s, d, e) How to interpret the results to define the percentage of compensation in case of any positive response to the issues of Part 1 or negative to the issues of Part 2, the percentage of compensation must be 100% once the company had assumed the risk of

disadvantageing the worker's functioning status by not offering the necessary conditions for work with safety and health protection. In the case of verification of the link between work activities and problems in the body (in its functions and structures - b, s), the compensation must be calculated in accordance with the percentage indicated in the main code of the component Activity and Participation (d), which must be the one that represents the most disadvantaged activity among the most frequent work activities. Such percentage is the representation of the capacity ICF qualifier.

Figure 2 – ICF components relationship
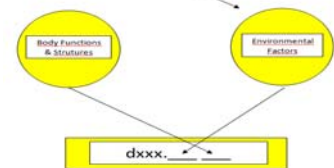
Conclusions

The SUSEP Table can no longer be used as a guideline for compensation. Moreover, such a table is addressed to workers compensation for alterations that are installed progressively, being related to exposure to risks, being false, with respect to a triggering event, more than a progressive process, for lack of adequate maintenance and control. Only a rational based on ICF can turn it into practical. Adding to that, the relationship between the different components must be explained and detailed by the Justice technical assistants. This approach depends on ICF using from the selection process, recruitment description, description of professional activities, description of jobs and environmental conditions, examinations, admissions, periodic examinations and dismissal exams. It is a tool that can help cooperation between entrepreneurs and workers.

Acknowledgements & Notes

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Improvement in functioning at one-year follow-up assessment: the advantage of the Family of Functioning Indicators (FaFI)

22-27 October 2018
Seoul, Republic of Korea

ID: 505

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Italian WHO – FIC CC

Abstract   The aim of this study is to use the Family of Functioning Indicators to compare outcomes described throught individual ICF functioning profiles across years. Data were collected on 32 patients assessed in 2016 and 2017. Improvement in Functioning Ratio was statistically significant (p-value = 0.02) (paired *t*-test).

Introduction

One of the main problems in functioning/disability description using ICF is to compare persons that are described using different code subsets. The Italian WHO-FIC CC has develop a method for operationalizing the ICF functioning/disability constructs and for using them as outcome indicators. The aim of this study is to use the Functioning Ratio (FR) to compare individual functioning profiles cross-sectionally and across years. FR was developed by the Italian WHO-FIC CC as part of the FAFI (1).

Methods & Materials

This was a repeated measure study conducted between January 2016 and December 2017. Psychiatric outpatients were selected by the AAS2 Mental Health Department of the Friuli Venezia Giulia region (Italy). The sample was evaluated twice within 2 years with a web ICF-based assessment tool named VilmaFABER System (1). The FR was used to compare individual functioning profiles cross-sectionally and across years. The FR ranges from 0 to 1. When FR = 1 there is not disability in the individual profile. The cut-off between functioning and disability is FR < 0.55. Four classes of «functioning» and four classes of «disability» were defined by FR value ranges (Table 1 and 2) (2,3). A paired *t*-test was conducted to examine the difference between FR calculated at baseline (year 2016) and at the next assessment (year 2017).

Results

The study enrolled 32 patients who were 18 years of age or older and cared through an individual rehabilitation program for inclusion. Their general characteristics are shown in Table 3. Figure 1 and 2 show the distribution of functioning and disability in the sample in each year according to the classes presented in Tables 1 and 2. When comparing individual functioning profiles, the mean of FR at baseline was 0.74 (SD=0.17) and the mean of FR at the next assessment was 0.8 (SD=0.17). The paired *t*-test statistic was -2.45. From the *t*-distribution with *Df* = 31, we obtained the p-value of 0.02, which showed strong evidence to reject the null hypothesis.

Table 3 – Patients' socio–demographic characteristics.

Sex, no. (%)	
Male	14 (43.7)
Female	18 (56.3)
Health condition, no. (%)	
Schizophrenia and functional psychoses	24 (75)
Other mental disorders	8 (25)
Average age (ys)	
Male	39.8
Female	38.6
Living status, no. (%)	
Living alone	6 (81.2)
Other	26 (18.8)
Employment status, no. (%)	
Employed	6 (18.7)
Unemployed	26 (81.3)
Education, no. (%)	
Primary school	1 (3.1)
Lower secondary school	14 (43.8)
Upper secondary school	17 (53.1)

Conclusions

In this data set there is strong evidence (p-value = 0.02) that FR changed from 2016 to 2017. We observed an improvement in FR in the majority of patients evaluated (Figure 3). In 2017, only 9% of the overall sample showed more "disability" than "functioning" in the functioning profile (Figure 2). This suggests that the rehabilitation methodology chosen to remove barriers to inclusion has worked.

References

1. The infographic Family of Functioning Indicators (FaFI), Frattura L., Simoncello A., Castelpietra G., Bassi G., 2015 WHO-FIC NETWORK annual meeting booklet
2. How to enrich WHODAS 2.0 considering ICF coding and Efs. The Web Activities and Participation Performance Inventory (WAPPIn). Frattura L., Zavaroni C., Bassi G., Simoncello A., 2015 WHO-FIC NETWORK annual meeting booklet
3. Disability/functioning balance and levels of disability: some evidences of a continuum. Frattura L., Bassi G., Castelpietra G., Simoncello A., 2016 WHO-FIC NETWORK annual meeting booklet

Acknowledgements

Figure 1 - Functioning ratio – year 2016
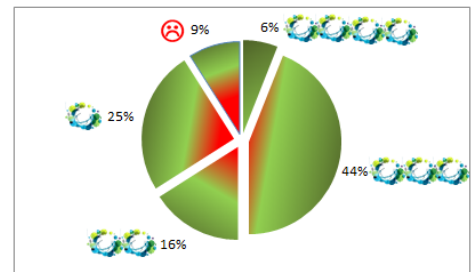
Figure 2 - Functioning ratio – year 2017
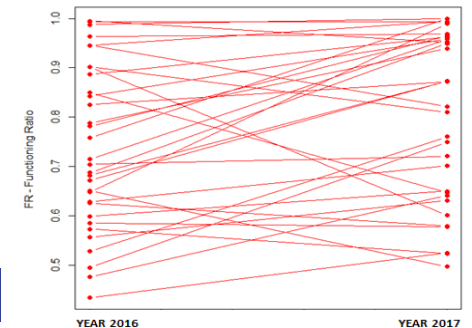
Figure 3 - Functioning ratio - year 2016 VS Functioning ratio - year 2017

Table 1 - Four classes of "functioning"

No. of VilmaFABER System stars	FR values	Meaning
	FR = 1	**excellent interaction** between an individual with a health condition and that individual's environmental factors → needs met → situation to be monitored
	0.86 ≤ FR < 1	**very satisfactory interaction** between an individual with a health condition and that individual's environmental factors → needs almost completely met → situation to be maintained
	0.71 ≤ FR < 0.86	**quite satisfactory interaction** between an individual with a health condition and that individual's environmental factors → needs partially met → situation to be improved
	0.55 ≤ FR < 0.71	**barely satisfactory interaction** between an individual with a health condition and that individual's environmental factors → needs marginally met → situation to be significantly improved

Table 2 - Four classes of "disability"

No. of red emoticons	FR values	Meaning
	0.40 ≤ FR < 0.55	**problematic interaction** between an individual with a health condition and that individual's environmental factors → needs unmet → investments to be reviewed
	0.25 ≤ FR < 0.40	**quite problematic interaction** between an individual with a health condition and that individual's environmental factors → needs unmet → investments to be significantly reviewed
	0.10 ≤ FR < 0.25	**very problematic interaction** between an individual with a health condition and that individual's environmental factors → needs totally unmet → investments to be significantly reviewed
	0 ≤ FR < 0.10	**extremely problematic interaction** between an individual with a health condition and that individual's environmental factors → needs totally unmet → urgent interventions

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Development of Korean Version of a Standard General Population Survey Questionnaire of ICF Generic Set and Instructional Guideline: An Initial Study

22-27 October 2018
Seoul, Republic of Korea

ID: 506

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Abstract

Background. While condition-specific ICF Core Sets are useful, an ICF Generic Set consisting of 7 ICF categories has been developed and found to be most relevant across the general population, clinical population, contexts, and settings. In order to make the ICF Generic Set well suited to a certain culture and be consistently used for standardized reporting of function as a health outcome, it is needed first to develop a standard form of simple questionnaire that should not only retain the original concept and linguistic meaning suggested by WHO, but also reflect specific socio-cultural situation of the country. As one of the research projects for policy purposes by Statistics Korea, the purpose of this study was to develop Korean version of a standard survey questionnaire of ICF Generic Set for general population and instructional guideline.

Methods. Using methodological study design, the following steps were performed: 1) analysis of the concept and qualifiers in each of the seven Generic Set codes by comparing with existing instruments developed to measure functioning and health status, 2) development of initial questionnaire and guideline using consensus conferences among research team members, 3) execution of the Consensus Oriented Decision Making discussion by multidisciplinary professionals (n=8) on the initial questionnaire and guideline, 4) revision of the initial questionnaire and guideline, 5) evaluation of content validity by another group of multidisciplinary professionals (n=8) using Content Validity Index (CVI), 6) evaluation of face validity by field test (n=15, male 53.5%, those with disability 40%, mean age= 47.46), and 7) finalization of the questionnaire and guideline after additional revisions based on the field test results.

Results. The CVI scores for each of the questions and the guideline were over .80 except for the question about remunerative employment (CVI =.75) and the guideline about energy and drive functions. Participants in the field test completed the questionnaire within 272.4 seconds on average (range=60-660) and showed good understanding of questions (mean score=3.57 on 1-4 Likert type scale). Data collectors also showed good understanding of the questions but indicated that more specific descriptions about questions and response choices in the guideline would be necessary.

Conclusion. Using a larger sample, further studies to establish reliability and validity of the developed questionnaire are needed. Refinement of the instructional guideline is also needed to ensure consistency in applying the questionnaire in regular population-based survey. **Correspondence to Jun-Ah Song (jasong@korea.ac.kr)

Introduction

- The International Classification of Functioning, Disability and Health (ICF) is the framework developed by WHO to describe functioning and disability at both the individual and population levels.
- Many international countries including Korea have been participating in various attempts for introduction and implementation of the ICF in clinical care, health policy, and population-based health survey.
- In order to make the ICF Generic Set well suited to a certain culture and be consistently used for standardized reporting of function as a health outcome, it is needed first to develop a standard form of simple questionnaire that should not only retain the original concept and linguistic meaning suggested by WHO, but also reflect specific socio-cultural situation of the country.
- The purpose of this study was to develop Korean version of a standard survey questionnaire of ICF Generic Set for general population and instructional guideline.

Methods & Materials

- Korean version of a questionnaire were developed based on the seven ICF Generic Set Codes, trying to maintain the original concepts and linguistic meaning reflecting the Korean culture complying with WHO's proposal (See Table 1).
- Existing tools to measure similar concepts such as fatigue rating scale, SF-36, SCI-SCS, ISCOS, IMPACT-S, SCIM, USER-Participation, EQ-5D, In-SCI, WHOQOL, WHODAS, etc. were also investigated and analyzed.
- Qualifiers consisted of 5 point scale and were explained by percentages and days of experience per month: not at all (0-4%, < 1 day); sometimes (5-24%, 2-7 days); often (25-49%, 8-14 days); usually (50-95%, 15-28 days); and always (96-100%, 29-30 days).
- Consensus Oriented Decision Making discussions were performed among multidisciplinary professionals (N=8) for issues about conceptual and linguistic appropriateness, cultural reflection, and concreteness of the questionnaire and instructional guideline.

Conclusions

- The ICF generic set questionnaire and instructional guideline, which are outcomes of this study, would be the valuable first step to implement the ICF in population-based health survey.
- It is also meaningful that the questionnaire has been developed by agreement in experts of various field.
- Using a larger sample, further studies to establish reliability and validity of the developed questionnaire are needed.
- Refinement of the instructional guideline is also needed to ensure consistency in applying the questionnaire in regular population-based survey.

Acknowledgement

Results

Table 1. CVI Results for the Survey Questionnaire of ICF Generic Set and Instructional Guideline

Item #	Question (ICF Code)	Questionnaire		Instructional Guideline	
		Mean	CVI	Mean	CVI
1	Have you had difficulty with no energy or motivation for the past month? (b130)	3.50	1.00	3.13	0.75
2	Have you had difficulty with certain emotions or controlling emotions over the past month? (b152)	3.25	0.88	3.50	1.00
3	Have you had any difficulties with physical pain in the past month? (b280)	3.25	1.00	3.38	0.88
4	Have you had any difficulties with your daily life over the past month? (d230)	3.38	1.00	3.63	0.88
5	Do you have difficulty in walking? (d450)	3.38	0.88	3.13	0.88
6	Do you have difficulty in moving yourself except walking? (d455)	3.50	0.88	3.38	0.88
7	Do you have difficulty with doing your paying job? (d850)	3.38	0.75	3.38	0.88

Note. b130= Energy and drive functions, b152=Emotional functions, b280=Sensation of pain, d230=Carrying out daily routine, d450=Walking, d455=Moving around, d850=Remunerative employment

Table 2. The Degree of Understanding Questions

Item # (ICF Code)	Participant Mean (SD)	Data Collector Mean (SD)
1 (b130)	3.47 (0.74)	3.20 (1.10)
2 (b152)	3.60 (0.63)	4.00 (0.63)
3 (b280)	3.87 (0.35)	4.00 (0.35)
4 (d230)	3.40 (0.83)	3.80 (0.45)
5 (d450)	3.73 (0.46)	3.60 (0.90)
6 (d455)	3.60 (0.63)	3.60 (0.55)
7 (d850)	3.33 (0.97)	2.60 (0.90)
Total	3.57 (0.44)	3.54 (0.34)

A Review on the possibility of Joint Use of the Reference Classifications Using ICF Field Test Case Studies

22-27 October 2018
Seoul, Republic of Korea

ID: 507

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Abstract

When ICHI is completed, KOSTAT plans to link and operate the reference classifications(ICD, ICF and ICHI). The inspiration for this study came from ICHI field tests(Phase 1) conducted in 2018. KOSTAT has conducted a number of ICF and ICHI field tests over the last three years to verify the suitability of these classifications for Korea, and this study reviewed the possibility of jointly using the three reference classifications by dividing the results of these tests into three types of records. As a result of this study, it was determined that SOAP, which originated from problem-oriented medical records(POMR), has the highest degree of readability and code application among the three types of records. The ICD, ICF and ICHI codes commonly applied repeatedly for to some health conditions were identified. However, this study mainly reviewed specific ICF field test cases, and additional research such as further collection and review of other cases is needed link the three reference classifications, identify patterns and compile statistics. Nevertheless, this study is meaningful in that it reviewed real cases rather than artificially created cases, identified the type of data source that is most conducive to jointly using the three reference classifications, and confirmed that it will be possible to put forward a proposal for linked analysis of the three reference classifications.

Introduction

KOSTAT has taken part in activities to help develop the WHO's new ICHI, including field tests, and plans to link and operate the three reference classifications once the ICHI is completed.

Accordingly, as part of preliminary research to establish a plan for the link and operate of the three reference classifications, there is a need to review the possibility of jointly using these classifications.

Methods & Materials

An expert on disease classification with 15 years of experience reviewed 55 cases collected for the ICF and ICHI field tests conducted by KOSTAT between 2015 and 2017 to determine the suitability of the international classifications for Korea.
The review was restricted to 20 ICF-related cases out of the 300 ICHI field tests. This decision was made so that the results of this study could be used in developing ICF materials for users, as KCF, the Korean version of ICF, has only been recently published, unlike ICD which has been used for 65 years and is already well-known.
After a review of their content, each case was divided into one of three categories according to record type, and two experts on disease classification attempted to apply the three reference classifications(ICD-10 (2016), ICF(2016), ICHI(Beta 2018(March)) to each type.

The first type A reviewed was progress notes in the medical records. The 30 progress notes written by doctors in hospitals were reviewed to see if the records contained content that the three reference classifications could be easily applied to.

Table 1: Outline of Data Source

Type	Data Provider	Data Sources (Records)	Number of Cases
A	Hospital	Progress notes	30
B	Hospital	Integrated Records[1]	5
C	Health center	Case studies [2]	20
Total			55

1) Integrated records of progress notes, nurse notes, occupational therapist notes and counseling notes
2) Case studies on programs at community health centers

Type B reviewed was integrated records(form of storytelling) of progress notes, nurse notes, occupational therapist notes and counseling notes for five patients. Type C reviewed was 20 files containing case studies on programs at community health centers. In this study, we attempted to apply the three reference classifications to each type.
Due to the limited time available to complete this study, we focused on the degree of readability and ease of applying each code when reviewing the possibility of joint use of the three reference classifications.

Results

Joint use of the three reference classifications was possible for all three types of records, but type A was better than type B and type C in terms of readability and ease of code application. As a result of reviewing type A, which consisted of progress notes written by doctors, it turned out that SOAP note of patients' subjective assessment and doctors' objective assessment on health conditions was the most suitable to the application of all three reference classifications. In addition to this, all three reference classifications could be applied to type A(Figure 1 - Case 9) because of the nature of some health conditions(e.g: patients undergoing rehabilitation after surgery due to a spinal cord injury). This was consistent with the reference classifications written in the online ICD-11 browser(ICD-10 conversion code(March)) and ICHI(Mapping ICF code) at the time.

Type A: SOAP note
(Subject, Object, Assessment and Plan)

A 38 year-old male patient was referred for rehabilitation after surgical treatment due to a cervical spinal cord injury after falling from a ladder.

		Problem list	Code
Case1	S:	I talk less with people	ICF) d350
	O:	Beck Depression Inventory (BDI): 36/63	b1301
		Geriatric Depression Scale (GDS): 20	b1522
	A:	Moderate depression	ICD) F32.1
	P:	Counseling for emotional functions	ICHI) AUD PP ZZ
		Antidepressant for oral administration	PZX DB AC
Case2	S:	It's hard to fall asleep and I wake up easily.	ICF) b1340
	O:	Sleep deprivation	b1341
	A:	Sleep disorder	b1342
	P:	Emotional support	ICD) G47.0
		Education about sleep and rest behaviors	ICHI) AU2 RC ZZ
			VEC PM ZZ

[omit]

Case9	S:	I have a bedsore on my buttocks. (caregiver)	ICF)s8103, e340
	O:	Size 2x2cm	b810
		Secretion (-)	
		Stage 2	
	A:	Bedsore, stage 2	ICD) L89.1
	P:	Wound disinfection and dressing	ICHI) LZZ DK ZZ
		Change of position and proper posture training	ICHI) SH2 PH ZZ

Figure 1: Example of the Three Reference Classifications Jointly used to SOAP
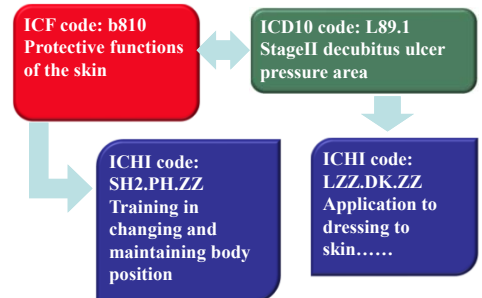

Figure 2: Example of repeated application of the same code

Type B, which consisted of integrated records in narrative form, was no better than type A in terms of readability and code application. However, it was also possible to identify changes in a patient's Diseases(ICD), Health Status(ICF), Health Interventions (ICHI) over time. After applying the three reference classifications type C, which was a file of case studies on community health center programs, it was difficult to distinguish between interrelated ICH and ICHI concepts for the environmental factors and policy parts of ICHI, and it was difficult to apply ICD codes because health center programs are aimed at prevention and management rather than treatment.

Conclusions

As a result of this review on the possibility of jointly using the WHO's three reference classifications as part of preliminary research to link the classifications in operation and support users, the ICD, ICF and ICHI codes commonly applied repeatedly for to some health conditions were identified.
However, this study reviewed only a limited number cases collected for ICF field tests rather than cases collected specifically for this study. Accordingly, for statistical production and the linkage operation of the three reference classifications, further research that collates and analyzes data on a wider range of health conditions is needed. Nevertheless, this study is meaningful because it identified the data source that is most conducive to the application of the three reference classifications, and confirmed that it will be possible to put forward a proposal for linked analysis using the three classifications through broader collection and analysis of such data.

Acknowledgements or Notes

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Using two classifications in community-based health care to describe patients' functioning, goals, needs, interventions, and results in EHR

22-27 October 2018
Seoul, Republic of Korea

ID: 508

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Abstract The National Board of Health and Welfare (NBHW) has developed sub-sets of ICF and the Swedish Classification of Health Care Procedures (KVÅ) for use in community-based health care. ICF can be used to describe functioning, goal, needs and results; KVÅ to describe planned and performed health interventions. From 1 January 2019 it will be mandatory for all municipalities to report individual-based data on performed health interventions by using KVÅ to a national register.

Introduction

The National Board of Health and Welfare (NBHW) is responsible for national registers within health- and social care. The NBHW has approved a regulation that makes it mandatory for all municipalities to report individual-based data on performed health interventions from 1 January 2019 to the national patient-register for community-based health care. The health interventions have to be classified according to the Swedish Classification of Health Care Procedures (KVÅ) and reported for each patient (of all ages) monthly. There are today no regulations that support collection of data concerning an individual's functioning, e.g. by using ICF. Today, about 75% of the 290 municipalities are using ICF and 45% KVÅ in EHR in community-based health care. In Sweden about 392 000 patients receive community-based health care (year 2016).

The NBHW has different projects in order to facilitate for the municipalities to use ICF and KVÅ in EHR. The NBHW 1) has selected subsets of ICF and KVÅ for patients in community-based health care (in collaboration with health care professionals), 2) is attending regional conferences (n=21) nation-wide and 3) will develop education and information material to support the implementation in EHR.

Methods & Materials

The subsets of ICF and KVÅ for use in EHR were developed in two stages. In 2013 about 260 nurses, physiotherapists and occupational therapists participated in a Delphi-study to select subsets for patients 65 years or older. The subsets were then updated in 2017/2018 (two-day workshop with health-care professionals) to also cover patients younger than 65 years. The subset of ICF can be used to describe functioning, goal, needs and results; the subset of KVÅ to describe planned and performed health interventions.

The conferences to support the municipalities in the implementation of ICF and KVÅ in practical work are arranged at the regional level. The region invites the municipalities to one day of information with the NBHW.

Results

The ICF subset consists of 277 ICF categories and the KVÅ subsets consists of 327 interventions (Table 1 and 2).

ICF components	Number
Body functions	105
Body structures	22
Activities and Participation	122
Environmental factors	28

Table 1: Number of ICF-categories in the ICF subsets

KVÅ - sections	Number
Investigative interventions	112
Therapeutic interventions	200
Managing interventions	15

Table 2: Number of interventions in the KVÅ subsets
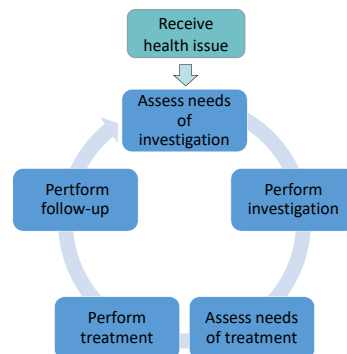
Figure 1: Steps in the care process

The ICF and KVÅ complement each other in the care process (Figure 1):
- *Receive health issue* (ICF)
- *Assess needs of investigation:* planned investigative interventions (KVÅ)
- *Perform investigation:* performed investigative interventions (KVÅ) which result in functioning (ICF) and diagnosis (ICD)
- *Assess needs of treatment:* goal-setting (ICF) and planned therapeutic interventions (KVÅ)
- *Performed treatment:* therapeutic interventions (KVÅ)
- *Perform follow-up:* planned and performed investigative interventions for follow-up (KVÅ), which result in assessed functioning (ICF) and goal achievement (ICF). Evaluate need to continue, change or finish therapeutic interventions (KVÅ) or need of further investigation.

Results

About 850 professionals have attended the 11 regional conferences held between Jan – Jun 2018. There are 12 regional conferences scheduled for the autumn. The conferences consist of information about the Swedish e-health strategy, ICF, KVÅ and how these two classifications can be used together in structured digital documentation at the patient level and for other purposes at local and national level (Figure 2).

There is also information about the national registers and their importance for production of statistics, analyses and research and about the new regulation that makes it mandatory for all municipalities to report KVÅ-data to the NBHW monthly from 1 January 2019.

The NBHW is also developing education and information material to support the implementation in EHR. The material will be directed towards health-care professionals and consist of written information in a format suitable for downloading.
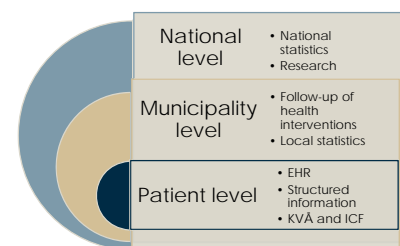

Figure 2: Reusing information (on performed health interventions) in EHR for statistics and research

Conclusions

The subsets will facilitate structured digital information in EHR. These will also support the reuse of the information for local follow-up and work with quality improvement and the reporting of performed interventions (using KVÅ) to the national register. The regional conferences make it possible to inform a lot of professionals in the municipalities.

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KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Laying the foundation for a core set of the ICF for community-dwelling adults aged 75 years and above in general practice

22-27 October 2018
Seoul, Republic of Korea

ID: 509

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Abstract With the medical focus on disease, the problem of overdiagnosis inevitably increases with ageing. Considering the functional health of patients might help to discriminate between necessary and unnecessary medicine. Describing patients in terms of functioning and disability might not only guide appropriate care but research on these patients as well. The ICF is the best tool available to achieve this. However, it is too detailed to be used in primary care practices. Consequently, the aim of this study is to identify relevant codes within the ICF for a core set for geriatric patients in general practice..

Introduction

Describing life instead of disease

Due to the focus on diseases and continuing medical progress, in particular older patients have to undergo unnecessary medical interventions aiming at combating the disease, not necessarily at relieving patients' suffering. The application of the International Classification of Functioning, Disability and Health (ICF) can help to overcome this issue by focusing on the person's every day life instead of the disease.
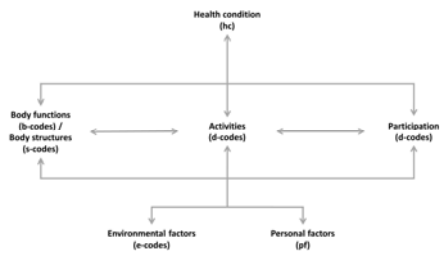
Figure 1. The framework of the ICF [1].

Methods & Materials

In this study, a core set of the ICF will be developed for the very elderly patients (≥ 75 years) following the methodology of the ICF Research Branch [2]. Relevant codes will be identified from different perspectives in four different preparatory studies.

- **Systematic review** to represent the researcher's perspective
- **Qualitative study** (semi-structured interviews and focus groups) to capture the perspective of geriatric patients
- **Expert survey** to capture the perspective of health professionals
- **Empirical multicenter study** to represent the clinical perspective

The results of each study will be linked to the ICF using established linking rules so that each study will end with the development of one preliminary core set.

Results

1. Systematic review:
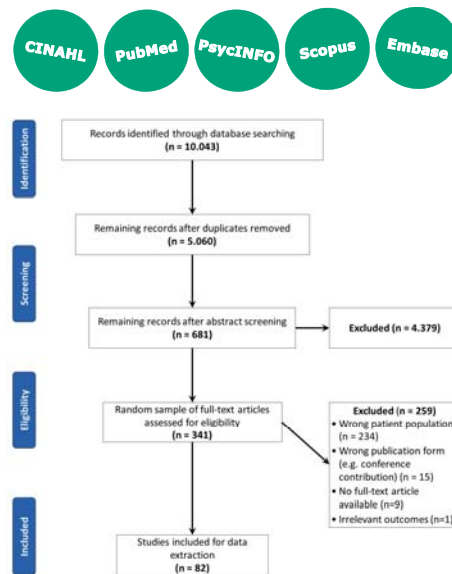
Figure 2. Databases used and flow chart of the systematic review

Across all articles, 2.155 concepts have been identified and linked to 263 different ICF codes (see fig. 3). Further results are pending.
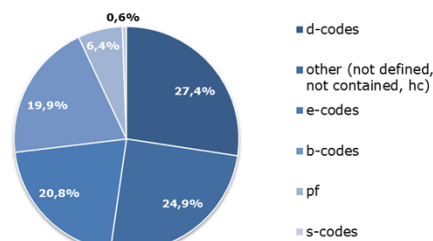
Figure 3. Percentage distribution of identified codes in terms of the ICF components.

2. Qualitative study: Twenty-seven participants were handed out a digital camera to take pictures of their activities of daily living. Based on these pictures, semi-structured interviews and, following these, four focus groups were conducted. These are currently analyzed using the documentary method of interpretation [3].

Results - continued

3. Expert survey: Currently, an online survey containing open ended questions regarding functioning in old age is conducted. A random sample of health professionals working with older adults on a regular basis have been invited to take part in this survey.

4. Empirical multicenter study: A trained study nurse is currently assessing the health status of community-dwelling adults aged 75 years and above using an extended version of the ICF checklist as well as different assessment tools (e.g. GDS-15, SF-12, MoCA).

Conclusions

It is expected that working with this ICF Core Set in a primary care setting can shift the focus from solely combating diseases to supporting the patients and their resources. The underlying hypothesis is that a more patient-centered medicine might contribute to the reduction of overdiagnosis and overtreatment among geriatric patients. The project is embedded in the network PRO PRICARE *(Preventing Overdiagnosis in Primary Care)* which aims at identifying and preventing overdiagnosis.

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Increasing accessibility of ICF for Flemish users

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Abstract To increase the accessibility of the ICF for a broader audience within the Dutch language area, the Dutch WHO-FIC Collaborating Centre invited members from the Flemish ICF-Platform to contribute specific Flemish content to the ICF. Members from the Flemish ICF-Platform undertook action from the end of 2017 up to april 2018. This poster reports on the results and method used.

Introduction

In the Flemish part of Belgium there is an increasing use of ICF within a high range of National institutes, local institutes, and a large variety of clinical practice areas and disciplines, such as in education, rehabilitation, work, research, policy, etc.

To support the implementation of ICF, parties in Flanders have organised themselves within the Flemish ICF-Platform in Collaboration with the Dutch WHO-FIC Collaborating Centre.

In every situation the Dutch language version of the ICF is used, and although in general the Dutch language is similar to Flemish, in a number of cases, specific words lead to confusion or misunderstanding.

E.g. in the Dutch language the word 'college' in d830, is used in a different meaning than in the Flemish context, for 'verbalising' in d1401, the translation into Dutch is almost the same in Dutch as in English, but in Flemish has a completely different meaning, so a synonym is required here. Most interesting and confusing is the word for walking, which in Dutch and Flemish are to be translated differently, because the Dutch word for walking, in Flemish means 'running'.

As a result of this, two of the members from the Platform expressed the wish to start an action on adding Flemish words to the Dutch version of ICF to increase the accessibility of the ICF for Flemish users. After a consultation with the Dutch WHO-FIC CC, the Dutch Centre agreed the action on the wordings to be undertaken.

Methods & Materials

The action started with informing the members from the ICF-Platform about the intention to increase the usability of the ICF for Flemish users. After full support was received from the Platform a panel of 12 ICF-experts was formed with different backgrounds and from a range of health care disciplines,

Methods & Materials cont.

ranging from Nursing, Occupational Therapy, Physiotherapy, Psychology, to General Practitioner.

The members of the expert-panel received the following assignment:
- read carefully a chapter from the Activity and Participation domains from ICF, and
- assess intuitively each separate item, from the Flemish perspective,
  - *if the item can stay the same*, no action needs to be taken
  - *if the item is doubtable*, make suggestions for rewording
- put suggestions in the provided xls format, and give arguments why changes are required
- mark if a suggestion for change is:
  - *Essential*
  - *Useful*
  - *Not essential*

Codes for possible further discussion
Chapter 1: d110, d130, d1370, d1400, d1502, d1551, d1720, d177
Chapter 2: d2301, d2302, d2303, d2400, d250
Chapter 3: no suggestions
Chapter 4: d4106, d455, d4552, d460, d4600, d4601, d4602, d465
Chapter 5: d510, d520, d2501, d530, d5300-d5302, d540, d5402, d5403, d560, d5701
Chapter 6: d1602, d640, d6501
Chapter 7: no suggestions
Chapter 8: d810
Chapter 9: d910, d9102, d9201, d9204, d930, d940, d950

After receiving all contributions from the expert-panel, a consensus meeting was held in which the results from the separate scores were presented and discussed based on a calculation of the Content Validity Ratio (CVR) for the scores as mentioned above.

Consensus was reached in case the CVR for an item was 75%, being scored as *essential*.

If the CVR was 75%, when combining the *essential* and *useful* scores, it was considered as 'interesting' but not as essential to change.

The results from the consensus meeting were processed in two different tables; one for all items discussed, and one for the essential items only.

Results

Overall: from the 9 Domains of Activity and Participation, the panel selected 63 items within codes which are regarded somehow different in Dutch and Flemish, and needed to be discussed. Based on the CVR 16 items were regarded '**essential**' to be included for the Flemish users of ICF, in order to increase disambiguity.

Concerning the 'essential' items
From the start of the action, the intention has been, not to change the Dutch translation as such, but to add synonyms to classes with ambiguous words for the Flemish users.
However, at some classes it proved that leaving out a word, such as 'college' (d830), would not change the concept in the Dutch language, but would improve the concept in Flemish, also some words could be regarded as being more precise, others words are synonyms by definition, and some words may be a little old-fashioned, thus improving the understanding for the Dutch users as well.

Most of the **essential** items have been added to the Dutch version of ICF as 'synonymVL', on the level of the classes *and* in the alphabetical index.
The changes have also been processed for the on-line browser version of ICF on the DUTCH CC website.

Conclusions

It proved to be useful to work on the ICF from another 'Dutch-speaking' country's perspective, not only for the purpose of increasing the accessibility for Flemish users, but also to become aware that this can improve the 'Dutch language' in the ICF as such. We aim to continue the co-operation between the Flemish ICF-Platform and the Dutch WHO-FIC Collaborating Centre.

Which are contextual factors that are important to predict return to work – Results of a mapping exercise using evidence from scientific literature and experts' opinion

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Abstract   A mapping exercise has been carried out in the scope of the project "Predicting the rehabilitation outcome after trauma based on the ICF – icfPROreha", a joint effort of eleven German rehabilitation clinics and departments aiming to establish an ICF-based outcome prognosis to predict return to work (RTW) in patients with musculoskeletal injuries. Aim of this poster is to present the results of the mapping exercise of the evidence retrieved from scientific literature and experts' opinion to contextual factors (environmental and personal factors) of the International Classification of Functioning, Disability and Health (ICF). We used data of (1) a systematic literature review comprising of 36 research articles published between 2007 and 2017 and (2) a national expert survey of 123 health professionals that aimed to identify factors that are important for predicting RTW in persons with musculoskeletal injuries. The mapping exercise was completed using established linking rules. For personal factors we used the proposal of Geyh and colleagues published in 2018.

Introduction

Return to work (RTW) after long-term sick-leave is a complex phenomenon affected by several variables that goes beyond disease- and injury-related factors. Empirical research focusing on the broad range of potential predictors of prolonged RTW is scarce. Thus, the impact of many variables on RTW remains unclear. The project "Predicting the rehabilitation outcome after trauma based on the ICF – icfPROreha", a joint effort of eleven German rehabilitation clinics and departments, aims to develop a prognosis of RTW in patients with musculoskeletal injuries based on the bio-psycho-social model of the International Classification of Functioning, Disability and Health (ICF). In this poster, we present the results of a mapping exercise of the evidence retrieved from scientific literature and experts' opinion to the contextual factors (environmental and personal factors) of the ICF.

Methods & Materials

For the mapping exercise we used data from:

1 a **systematic literature review**: empirical studies focusing on factors associated with RTW of patients with musculoskeletal injuries were searched, selected and data extracted (9 databases, years 2007-2017, English or German)

2 a **national expert survey**: German health professionals with experience in the rehabilitation of patients with musculoskeletal injuries (e.g., physicians, therapists and rehab managers) were asked to identify variables that affect RTW in this patient population.

Methods & Materials - continued

Factors identified as predictors in the literature and by experts were linked to the ICF using the ICF Linking Rules (Cieza et al., 2016)[a]. Personal factors were assigned to the categories proposed by Geyh et al. (2018)[b].

Results

Data from **36 studies** were extracted (Fig. 1) and 426 predictors identified; of these, 40% were mapped to contextual factors (Fig. 2).
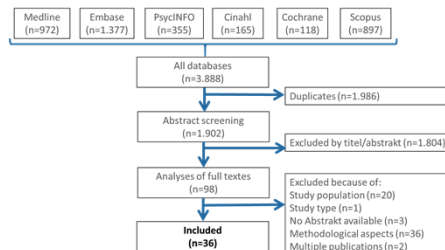

Fig. 1 Prisma flow chart of the systematic review.

In total, **123 experts** participated in the survey (90 male/33 female) and provided 252 factors that are relevant to predicting RTW, of which 48% were mapped to contextual factors (Fig. 2).
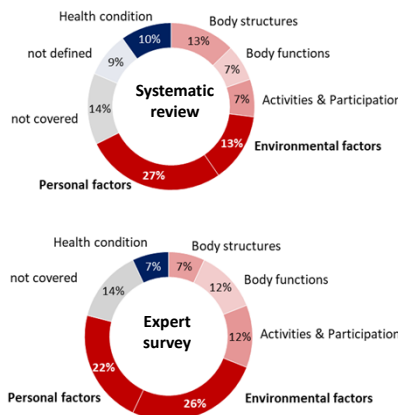

Fig. 2 Relative frequencies of mapped predictors.

Results - continued

Most frequently identified environmental and personal factors are shown in Tables 1 and 2.

SLR	ES		
	X	e1151	Assistive products and technology for personal use in daily living
X	X	e165	Financial assets
	X	e310	Immediate family
X	X	e330	People in positions of authority
	X	e355	Health professionals
X	X	e570	Social security services, systems and policies
X	X		*Type of work*
X	X		*Type of employment contract (full/part time, fixed)*
X			*Job classification*
	X		*Work atmoshere*

SLR: Systematic literature review; ES: Expert survey
Environmental factors presented in italic letters could not be mapped to the ICF.

Tab. 1 Environmental factors retrieved from the systematic literature review and expert survey.

SLR	ES		
X	X	i110	Age
X	X	i120	Gender
	X	i130	Nationality, citizenship and ethnicity
X	X	i150	Educational background
X	X	i160	Occupational bachground
X		i220	Position in partnership and marriage
X	X	i540	Personal beliefs
X		i560	Personal evaluations
X	X	i740	Patterns of behaviors and handling behaviors
	X		*Physical constitution*
	X		*Personality*
	X		*Mental stability*

SLR: Systematic literature review; ES: Expert survey
Personal factors presented in italic letters could not not be mapped to the proposed categories provided by Geyh et al., 2018.

Tab. 2 Personal factors retrieved from the systematic literature review and expert survey.

Conclusions

There are several contextual factors that are relevant to predicting RTW in patients with musculoskeletal injuries. Some of these factors could not be mapped to the ICF and the proposed codes provided by Geyh et al.

Acknowledgements

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KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Support and relationships as environmental factors: proposals to improve the ICF

22-27 October 2018
Seoul, Republic of Korea

ID: 512

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Abstract   The poster aims to present the analysis made to reduce ambiguity in the ICF Environmental Factors classified in the Chapter 3, facilitating the understanding of these environmental factors as "support provided by", instead as various types of persons as ICF classifies now. The importance of these factors as health predictors was also discussed

Introduction

The ICF EF chapter 3 "Support and relationships" is about "people or animals that provide practical physical or emotional support, nurturing, protection, assistance and relationships to other persons, in their home, place of work, school or at play or in other aspects of their daily activities. The chapter does not encompass the attitudes of the person or people that are providing the support. The environmental factor being described is not the person or animal, but the amount of physical and emotional support the person or animal provides". In this explanation we find two indications to keep in mind: the EF is about "support provided by", and the evaluation is about the "amount of physical and emotional support".
Nevertheless a real definition of support is not present, but a "dimension" (amount of support) to evaluate the facilitator or barrier role of the support provided by different persons and animals is suggested. The described EFs are not persons or animals, but the amount of physical and emotional support the person or animal provides".

Methods & Materials

Taking into account the above indications, the e3 code descriptions were analysed, and a definition of "support" was proponed. The e3 code descriptions that did not result coherent with the clarification at the beginning of the chapter were changed and submitted as update proposals on the ICF update platform. These proposals aim to reduce ambiguity in the e3 code description, facilitating the understanding of these EFs in order to assess the facilitator or barrier role of the "support provided by", instead of that of the persons per se.

Results

The analysis and subsequent proposals affected all EF codes of the ICF Chapter 3.
ICF does not define "support" but seems to refer to "social support" addressing different needs.

What does support mean?

Some synonyms of support are help, protection, comfort, friendship, aid, benefits, relief. Support may be "material" (financial support to provide someone with money, or to provide someone with things he/she needs). If you support someone or their ideas or aims, you agree with them, and perhaps help them because you want them to succeed.
"Social support" can be categorized and measured in several different ways.
Melissa K. Andrew writes that " Social support refers to the various sources of help and resources obtained through social relationships with family, friends, and other care providers. Types of social support include emotional instrumental (help with activities of daily living, provided through labor or financial support), appraisal (help with decision making), and informational (provision of information or advice). Other authors distinguish among:

- *Emotional support* is the offering of empathy, concern, affection, love, trust, acceptance, intimacy, encouragement, or caring.
- *Tangible (or instrumental) support* is the provision of financial assistance, material goods, or services.
- *Informational support* is the provision of advice, guidance, suggestions, or useful information to someone.
- *Companionship support* is the type of support that gives someone a sense of social belonging (and is also called belonging).

What about relashionships?

- The ICF EFs of Chapter 3 are also about relationships. A fully comprehensive description could address relationships (with someone).
- Originally the update proposals implemented this second concept in the e3 factors description.

Nevertheless, the discussion made during the 2018 mid-year meeting in Hamburg was about the criticism in using a concept that is classified in chapter 7 Activities and Participation. The concept "relationships" would also need a definition. In any case, the addition of a verb for distinguishing d7 activities from environmental factors would be very welcome.

Conclusions

The changes proposed for updating ICF clarified that EF chapter 3 is about persons and animals as "potential supporters or helpers" in different support dimensions: emotional, tangible (or instrumental), informational and companionship. Their supporting ability has to be evaluated by persons who receives support, if they receive any. The term support remains positive, and, for this reason, could be considered always as a facilitator. Researchers also commonly make a distinction between perceived and received support. As the facilitator and barrier effects of the EFs have to be seen from the person perspective, the evaluation would be about the perceived and the received support provided by someone.
We also need to clarify whether e355 and e360 classify assistance as "tangible support" or if these codes classify "humanity" and emphatic abilities of the professionals too. The term "support" also refers to the term "need". The relationship between needs and support is implicit, but relevant for the clarity of the classification and the assessment of the "quality" of the received/perceived support. Therefore, if we clarify that a person has to evaluate if the perceived and received support provided by different potential supporters are facilitator or barriers, we will have the indirect possibility to describe if his/her "perceived/actual needs" are quantitatively and qualitatively supported or not.

References

A useful contribution is available at: https://doi.org/10.1016/B978-012372574-5.50019-3
A selection of many scientific references on social support are available at: https://www.sciencedirect.com/topics/medicine-and-dentistry/social-support.
Melissa K.. Andrew, in Brocklehurst's Textbook of Geriatric Medicine and Gerontology (Seventh Edition)

Personal Factors: a response to the call for action

KOREA
WHO-FIC
NETWORK ANNUAL MEETING
2018

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WHO FIC CC of Italy[1], The Netherlands[2], North America[3], Japan[4], Australia[5], South Africa[6], the Nordic Countries[7], South Korea[8]

Abstract

At the 2015 WHO-FIC Network meeting, a call for action was launched (poster C523) to address the topic of Personal Factors (PF). PFs have been acknowledged as being relevant within the ICF, but they defy the necessary qualities of a classifiable concept. PFs consist of a list of concepts, classified in some classifications, including partly within the ICF, but not in many other systems. New lists of PFs keep emerging, underlining the importance of the need for the subject and the necessity of coordination and elaboration. The common assumed quality that characterizes a PF (as an Environmental Factor (EF)) is in relation to the person's functioning modulating it.

Taking up the call, a group of experts from three WHO-FIC Network groups/Committees responds now and proposes a process. This poster explains the intended method and also advocates that the proposed endeavor should be taken up by the FDC in conjunction with FDRG for the specific ICF expertise, and by the ITC for the ontological work.

Introduction

Personal factors (PF) are part of the biopsychosocial model on which the ICF is based, as one of the components of the contextual factors. As Environmental Factors (EF) describe the external influences on functioning and disability, they should also describe the internal influences on functioning and disability (ICF 2001).

Both PFs and EFs have an impact on functioning. However, while EFs are classified and operationalized as facilitators (positive impact) or barriers (negative impact), PF, while recognised by users as relevant and important in providing a complete representation of health and disability, are neither classified nor operationalized. Many of the concepts included by the ICF as PFs defy the qualities of a classifiable entity, or duplicate concepts possibly captured and described in other classifications.

This issue has been noted by several recent publications (1-4) and by the WHO-FIC Network in a poster presented at its annual meeting in Manchester in 2015 (later translated in publication (5)). In these latter papers, it was recognized that collaborative action from the relevant Committee and Reference Groups within the WHO-FIC Network (FDRG, FDC and ITC) would be the necessary to respond to the highlighted need.

Methods & Materials

A dedicated working group including the chairmanships of the involved Committees and Reference Groups was constituted and whom started sharing materials and ideas.

A working session during the FDC mid-year meeting 2018 in Geneva addressed the issue of mapping some of the PF (as exemplified PF in the ICF) on other classification systems.

Results

The preliminary work identified the obligatory ontological quality of a *bone fide* PF, its relation with the person's functioning and its ability to influence/modulate it.

The analysis of the PFs listed in the ICF introduction led to positive mapping onto either WHO-FIC members or on other UN classifications.

A literature search for papers proposing more detailed lists of PFs yielded some items that are now the object of analogous mapping.

Personal Factors listed in the ICF	Comments	Covered in ?
Gender, ethnicity, age	Covered in sociodemographic data	Look in UN demographic and social statistics
Other health conditions	When influencing functioning both is present or past	ICD
Fitness	BMI, exercise tolerance, force, trophism	ICF
Lifestyle, habits	Including risk behaviors	ICHI- targets
Upbringing	See also below	ICD ch 24 codes
Social background, education, profession	Overlap with upbringing Covered in sociodemographic data	Look in UN demographic and social statistics
Past and current experiences (past life events and concurrent events)		ICD ch 23 and 24 (external causes of morbidity; factors influencing & reasosns for encounter)
Overall behaviour pattern and character style	Covered in the box below	See below
Coping styles, Individual psychological assets and other characteristics	Sheer will still excluded: can we classify it? Is it proper to catgorize a person's will?	ICF: b126 (temperament and personality functions), b130 (Energy & drive, including motivation b1301) in ICF also look at b125 in ICF-CY (intrapersonal functions)

Table 1: Mapping of the PF exemplified in ICF introduction on existing classification systems

Conclusions

ICF PF systematization may start from an ontological approach to:

- clarify the nature of these concepts
- clarify the relationships these concepts have with the various domains of functioning described in ICF part 1 (body functions & structures, activity & participation).

It could then proceed by a multistep process to:

- identify concepts that are already classified in other systems both within and outside WHO-FIC products suite but not within ICF;
- single out relevant concepts that not being classified elsewhere and not being present in ICF still can be considered as modulating elements for individual functioning (e.g. free will);

identify concepts that are already present in ICF and clarify the relation these categories entertain with the other categories describing that person's functioning (e.g. heart function and running; craving and eating; visual acuity and driving), clarify the nature of these concepts and their differentiation from functions.

This work could take advantage of the preliminary work being done for EF.

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ASSESSMENT OF REHABILITATION OUTCOMES: FROM PATIENT TO STATE

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ID: 514

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Abstract   Two National Standards have been developed in the Russian Federation that are connected with goals and evaluation of rehabilitation services. Using ICF and these Standards we can evaluate the effectiveness of rehabilitation services on the different levels.

Introduction

Nowadays the rehabilitation system is developing actively in the Russian Federation. We conduct approbation of elaborating approaches of rehabilitation organization in the regions of Russia. It includes development of rehabilitation system regulation on the state level. Within this context the methodology of assessment of the regional rehabilitation and habilitation system including children and their families was developed. In the framework of the methodology two National Standards of the Russian Federation were created on the base of ICF that are "Rehabilitation of Persons with Disabilities. Goal Indicators of Rehabilitation Services. Fundamentals." and "Rehabilitation of disabled people. Evaluation of rehabilitation services outcomes. Fundamentals." The **purpose** of the Standards is improving quality of services, affecting development of the rehabilitation system in the Russian Federation. In accordance with the procedure, in 2016-2017 they were discussed by specialists, officials and broad public, after finalizing and taking into account the comments they were sent for approval in the Federal Agency on Technical Regulating and Metrology. They are coming into force on 1st January 2019.

Methods & Materials

We can implement the assessment of rehabilitation services outcomes on different levels. The use of assessment on the individual level allows the rehabilitation specialist to adjust the rehabilitation programme for a disabled person both during the process and at the end of a particular rehabilitation cycle. On the organization level, it is possible to correct the rehabilitation process, to make staff and system changings. On the region level, it provides identification of the most effective rehabilitation organizations and determine the development of rehabilitation directions. Finally, on the level of the country, it allows to compare the effectiveness of the organizational process of rehabilitation in different regions of the Russian Federation. Currently, the Standards are being approbated in two regions of the Russian Federation that are the Sverdlovsk Region and the Perm Krai.

Chart 1: We can use ICF for assessment of rehabilitation services outcomes on the following levels:

- Country level
- Regional level
- Organization level
- Clinic department level
- Individual level

The assessment is based on the ICF Categorical Profile of the patient, the assignment of rehabilitation and the evaluation of the result of rehabilitation.

The individual level assessment can be formalized and determined according the whole Categorical profile or we can mark out one of the goals and assess the degree of its achievement by the average values of the severity of the impairments.

The assessment of the individual level is based on the achievement of the targets identified with using (ICD, ICF); comparison of the initial, intermediate and final severities of impairments of body functions and structures, limitations of activities and participation, environmental factors; generalized assessment of changes in severities of impairments of body functions and structures, limitations of activities and participation.

On the organization level, assessment is based on average rehabilitation outcomes of the individual level.

On the regional level, assessment is based on average rehabilitation outcomes of the previous one and individual level in separate areas of rehabilitation.

We can designed assessment process into tables for better understanding and easy evaluating.

Chart 2: The template of assessment of rehabilitation services on the individual level.

Rehabilitants	Individual assessment of achieving goal
Rehabilitant 1	Value 1
Rehabilitant 2	Value 2
Rehabilitant 3	Value 3
Rehabilitant 4	Value 4

Total assessment of rehabilitation department: (Val.1+Val.2+Val.3+Val.4)/4 = average value of department/organization for further level

The tables allow us to determine the level of progress among rehabilitates/organizations etc.

Chart 3: The template of assessment of rehabilitation services on the organization level.

Organization	Individual assessment of achieving goal
Organization 1	Average value of rehabilitates 1
Organization 2	Average value of rehabilitates 2
Organization 3	Average value of rehabilitates 3
Organization 4	Average value of rehabilitates 4

Total assessment of rehabilitation department: (Average val.1+Average val.2+Average val.3+Average val.4)/4 = average value of the region for further level

Results

The usage of the ICF Categorical Profile of the patient on the individual level allows to evaluate both the achievement of every goal separately and rehabilitation process in general. On the level of specialists and clinic departments, it provides control of the quality of rehabilitation and effectiveness of using methodologies. On the level of organizations and regions, it offers regulation of rehabilitation system according the up-date figures and relevant data.

Conclusions

The Standards are expected to reach their purpose that is improvement of the quality of rehabilitation services on different levels and influence on the development of the rehabilitation system in Russia through a single methodological approach to assessing the results of rehabilitation.

Acknowledgements or Notes

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KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Using ICF in the Insurance Medicine Decision Support (IMDS) and in electronic medical certificates to assess workability

22-27 October 2018
Seoul, Republic of Korea

ID: 515

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Abstract The Swedish National Board of Health and Welfare (NBHW) provides the "Insurance Medicine Decision Support" (IMDS), for approximately 120 diagnoses. The aim of this work was to evaluate how ICF can be used to describe impairments and activity limitations in the IMDS and in a structured manner when issuing medical certificates electronically in Sweden's national application. Results show that using ICF improved the way in which impairments and activity limitations are described in the IMDS as well as supports the physician to assess workability.

Introduction

The Swedish National Board of Health and Welfare (NBHW) provides evidence-based national guidelines, called "Insurance Medicine Decision Support" (IMDS), for approximately 120 diagnoses in 15 groups of diseases. The IMDS includes recommendations of expected duration of sickness absence, information about symptoms, prognosis, impairment, activity limitation and rehabilitation. These guidelines are used by physicians to assess workability and the duration of workability in electronic medical certificates sent to the Swedish Social Insurance Agency (SSIA). In 2016, the NBHW had the commission of the Swedish government to update the IMDS for 17 psychiatric diagnoses. During 2017 and 2018, information about impairments and activity limitations for approximately 100 diagnoses will be updated, since several diagnoses are inadequate or no information about impairments and activity limitations.
Moreover, in Sweden a national application for issuing medical certificates electronically is in use and continuously being enhanced.

Whilst updating the IMDS, the aim was to evaluate how ICF can be used to describe impairments and activity limitations in the IMDS. Another aim was to investigate how ICF can be used to enter information about impairments and activity limitations in a structured manner when issuing medical certificates electronically in Sweden's national application and if this helps the physician to assess workability.

Methods & Materials

For each diagnosis in the IMDS, the existing information and other relevant information were mapped to ICF. Mapping the data, using ICF core sets and considering input from medical experts underlie the development of specific ICF subsets for each diagnosis. These subsets were used to update the information in IMDS. Several tests were performed to evaluate how these ICF subsets could best be presented to physicians when entering information about impairments and activity limitations to assess workability in the electronic medical certificate.

Results

The work yielded a prototype illustrating how ICF subsets can be used when entering information about impairments and activity limitations in Sweden's national application for issuing medical certificates.

Figure 1: Example of the ICF-prototype for electronic medical certificate

Updating the IMDS using ICF

During 2016 and 2017 the information about impairments and activity limitations in the IMDS have been improved and updated according the described method for 52 diagnoses in the following six groups: Mental disorders (17 disorders); Diseases of the musculoskeletal system (18); Diseases of nervous system (8); Injury (9); Pregnancy (3); Diseases of the skin (3).
During 2018 the information about impairments and activity limitations for the following 53 diagnoses will be improved and updated: Diseases of the respiratory system (10); Neoplasms (10); Diseases of the digestive system (8); Diseases of the circulatory system (7); Diseases of the genitourinary system (6); Infections diseases (6); Endocrine diseases (5); Diseases of the eye (3); Diseases of the ear (3).

Testing the ICF-prototype in electronic medical certificate

Initial test including the ICF-qualifiers have shown that using them made the prototype too complex to use given that lot of physicians are not familiar with ICF. Qualifiers were thus removed in the latest version of the prototype (Figure 1).

Tests of the final prototype have shown that physicians perceive using ICF to be of great help when describing impairments and activity limitations, making it easier to differentiate between those two as well as to understand what information is demanded of them. Similar solutions can be found in several Swedish clinics and an official national solution for using ICF is therefore considered to contribute to a more structured and correct work when describing impairments and activity limitations. Nearly all physicians who tested the ICF-prototype would recommend it to their colleagues.

Conclusions

ICF is useful as a common terminology to describe impairments and activity limitations in the IMDS. Using ICF subsets, when issuing medical certificates, may improve data quality and facilitate the communication between physicians and administrators at the SSIA.
The work is ongoing, implying the update of the remaining diagnoses as well as the continuous enhancement of the ICF-prototype during 2018.

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CHANGING THE PERSPECTIVE OF FUNCTIONING / DISABILITY: EFFORTS IN MEXICO FOR THE IMPLEMENTATION OF THE ICF

ID: 516

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Mexican WHO-FIC-CC, MoH

Abstract   In Mexico we have an outstanding task to be done for the implementation of the ICF considering the biopsychosocial assessment. Although the Mexican WHO-FIC CC has had training activities, we are aware of the need to validate an approved instrument for the country. This work shows the path we have traveled and the goal we have in this area.

Introduction

In Mexico we are aware that UN The availability of data on disability has improved significantly, given that the number of countries that collect this data in all parts of the world has been increasing since the early. Thus, the integration of the disability issue in information sources becomes increasingly necessary, since it is important to know the situation in which this population group is located and to know if people with disabilities really have access to areas of disability. relevant as are work and education. Situation that is a reflection of social inclusion.

Due to the need to have information about people with disabilities, is that on May 3, 2016, in commemoration of the entry into force of the Convention on the Rights of Persons with Disabilities (CDPCD by acronym in Spanish), President of Mexico installed in the National System for Persons with Disabilities with two basic components: the National Registry of Persons with Disabilities and its georeferenced information system, whose design would be the responsibility of the National Council for the Development and Inclusion of Persons with Disabilities (CONADIS by acronym in Spanish) in coordination with the National Institute of Statistics and Geography (INEGI by acronym in Spanish).

In this context, the frame of reference of the National Registry of Persons with Disabilities is presented with the aim of having a document that supports the registry.

On the other hand, the Convention on the Rights of Persons with Disabilities, as the maximum document for the population with disabilities, mentions in Article 31 that States Parties will gather adequate information, including statistical and research data, that will enable them to formulate and apply policies, in order to give effect to this Convention.
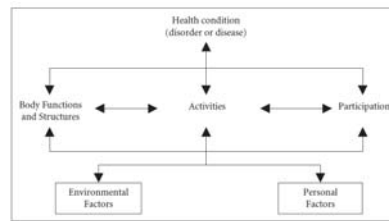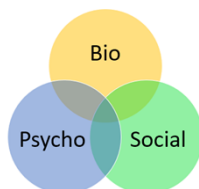
Methods & Materials

Based on this general vision, the great challenge for Mexico is to implement the information systems of people with disabilities under the vision and approach of the ICF, that is, the biopsychosocial approach proposed by this classification for the evaluation of the functioning and disability.

In this regard, Mexico through two collaborating centers, WHO, CEMECE and the National Institute of Rehabilitation, have performed tasks for the dissemination and use of the ICF. These tasks have focused mainly on the training of different people interested in the subject, professionals who work with health and health-related states to achieve an objective use of the proposed approach. The supervision of the use of the ICF in the electronic hospitalization systems has also been carried out.
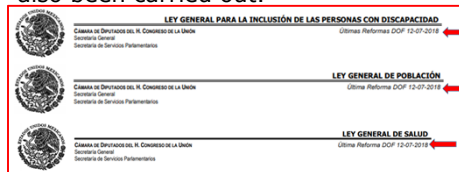
The issue is of great importance, since in July 2018, the laws that influence to be able to have a registry of people with disabilities were modified, and as of that date the health authority will have to elaborate a legislation for the certification, which must Consider the different characters that will intervene in this process.

Results

One of the activities that took place regarding training was the one-week course organized by Autistic Integration and Rehabilitation Association (AIRADE by its acronym in Spanish) in Ensenada, Baja California in north of Mexico

which is headed by the human rights defender Manuela González Mora. It was taught by the Mexican WHO-FIC CC and the National Institute of Rehabilitation. This important activity was organized by civil society with the support of the local government. Among the main agreements generated in this activity was to start conducting studies for the comparability of psychometric instruments for the assessment of the autistic spectrum with those working in that association and the basic sets of the ICF designed for that condition.

After that, the use of ICF is in an initial phase, prior to the generation of instruments through which personal codes can be obtained that allow in a simplified way to know the situation of each person with regard to their health and that these in turn can be understood throughout the country and internationally, which would reduce intervention times by specialists, in addition to knowing the impact of social barriers on women and men living with disabilities.

Next steps…

- Preparation of the Official Mexican Standard on Certification of Disability (no longer than one year)
- Creation of the Disability Certificate
- Conformation and training of multidisciplinary teams.
- Agreements to qualify the disability according with ICF in Mexico.

EFFECTS OF A SHORT COURSE ON MOTIVATION, ATTITUDE AND KNOWLEDGE REGARDING THE ICF

22-27 October 2018
Seoul, Republic of Korea

ID: 517

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Abstract The implementation of ICF' concepts in health graduation in Brazil is still a challenge, which makes it difficult to adopt an adequate and standardized language of the aspects of functionality within an interdisciplinary health team, in which the physical therapist participates. Different educational strategies should be used during graduation in the search of this implementation and facilitating ICF's concepts use in clinical practice. A quasi-experimental study featuring a short (3-hour) course about ICF's concepts, including their use in clinical cases was conducted. After intervention, 64% of the volunteers showed high motivation to use ICF in their clinical practice and only 8% felt that ICF's concepts use would demand great effort.

Introduction

Considering physiotherapists' actions within an interdisciplinary team, their approach from evaluation to establishing treatment should be based on concepts from the International Classification of Functionality and Disability (ICF). Thus, interventions should be directed at the categories of activities and participation, without disregarding environmental factors affecting functionality. ICF's principal concepts, as well as their articulation in the rationale for the treatment, need to be worked intensely and continuously from undergraduate studies on. This means implementing their use in medical school coursework and stages, including after graduation. One of the challenges to implementing this is not knowing this strategy's possible impacts on learning ICF.

Methods & Materials

A quasi-experimental study (before-after measurement without a control group) featuringh a short (three-hour) course at a Brazilian school was conducted (Figure 1 and 2). The ICF content given encompassed its importance in physiotherapy's professional practice, defining the categories and qualifiers that constitute ICF in an expository class, and problematization of cases and clinical conditions to be resolved in small groups with the aid of an application allowing consultation about ICF. Prior to the interventions, volunteers answered questions on a Likert scale regarding their knowledge, motivation, and use of ICF in organized professional practice. Afterwards, the same volunteers were asked to respond to a new questionnaire as a way of measuring the impact of the knowledge acquired.

Results

Data was evaluated for the course's 36 participants. Of these, 75.1% were under 25 years of age, 86,1% were physical therapy undergraduate and 30,6% of them were in the last year of the graduation. Although 88,9% of the participants have reported already knowing ICF, only 25% indicated that they had used it in patient approach, example, when establishing treatment priorities. Before the intervention, the participants reported that the main difficulty for the use ICF was not knowing when or how to use it (Figure 3). After training, 69% of those enrolled responded to another questionnaire. There was an increase in the motivation of the participants regarding the ICF's use in patient approach (Figure 4). Only 8% strongly felt that its use would demand great effort.

Figure 1: Short course participants receiving information about ICF's concepts.

Figure 2: Short course participants receiving examples of using ICF's concept in physical therapy practice.

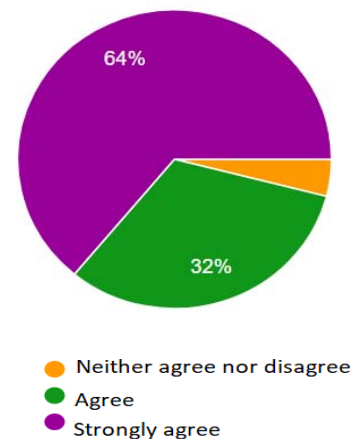Figure 3: Self report on the main difficulty for the use ICF in clinical practice before the short course.

- I do not know when and how to use ICF's concepts.
- I do not know how to use ICF codes.
- Others

Figure 4: Self report on being motivated for the use of ICF in clinical practice after short course.

- Neither agree nor disagree
- Agree
- Strongly agree

Conclusions

Learning about ICF should involve continuous strategies of raising students' and professionals' awareness so they can use it effectively in their professional practice. Long and short training courses about ICF can serve as learning strategies.

Impact of ICF in improving Knowledge, Attitudes and Behaviour regarding Interprofessional Practice among Health Professionals in Rwanda

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ID: 518

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Abstract   The use of the ICF as a framework for training health professionals regarding interprofessional practice resulted in a significant improvement in knowledge, attitudes and behaviour in 203 participants in a RCT in Rwanda. It is thus recommended that the framework be used in interprofessional education in Rwanda and other similar countries.

Introduction

During about 4 days hospital stay, patients can be seen by around 50 different people (Daniel & Rosenstein, 2007). Good collaboration between Health Care Professionals can reduce medical errors, enhance the spread of critical information, and assist in interpretation of health information resulting in improved patient care. Lancet Global Independent Commission has recommended a health care reform to meet the need for patients(Frenk,et al. 2010). Problems identified by the authors included (amongst others) poor teamwork among health professionals. This is due to a lack of common language to be used for a smooth collaboration between professionals. ICF was found to be a useful potential framework to help health professionals provide a common language that looks beyond mortality and disease and instead at how people live with their conditions (Kohler et al., 2013).

Methods & Materials

A Cluster Randomised Control Trial (CRCT) was used. Four district hospitals were randomly allocated to receive a day's training in interprofessional practice using ICF (experimental) or a short talk and a booklet on the topic (control). Participants in each hospital. Participants included medical doctors, nurses, social workers, physiotherapists and mental health nurses/clinical psychologists. Simple random sampling was used to assess patients' records of discharged patients from medical, surgical and paediatric wards before training, two-month, four-month, and six-month in two experimental and two control hospitals Relevant test we used to establish if the two sets of groups were equivalent at baseline, two-month, four-month, and six-month. Ethical approval was obtained from the Human Research Ethics Committee of the University of Cape Town and the Rwandan National Ethics Committee.

Results

A total of 203 health professionals participated. Participants included medical doctors, nurses, social workers, physios and mental health nurses/clinical psychologists. The mean age was 35.7 years (SD8.29). No difference between Control/Exp groups (p=.208).
There was no association between gender, profession, place of work and group. However, the Exp group had a significantly greater number of years of experience (p=.030).

Figure 1: Pre-post **Comparison of knowledge in experimental and control**
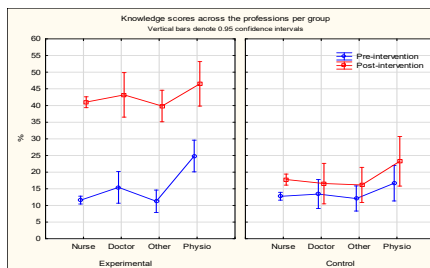

Post-intervention results show a significant difference increase in mean percentage gain on the Knowledge questionnaire (Exp group mean=41.3, SD9.5; control group mean=17.7, SD4.7 (t=22.5; p<.001). The increase in Knowledge was highly significant in the Experimental group across all professions compared to Control group after intervention.

Figure 2: Pre-post Comparison of Attitudes in experimental and control
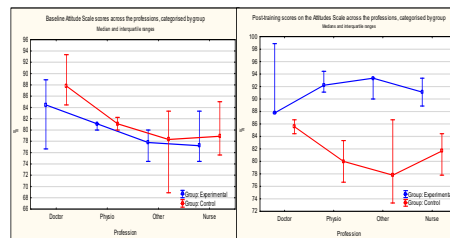
There was no significant difference in the ranking of the scores on the Attitudes Scale of two groups prior to training. The pattern of scoring across professions remained the same in the Control Group, but changed in the Exp Group post-training.

Figure 3: Comparison of experimental and control from baseline to 6 months
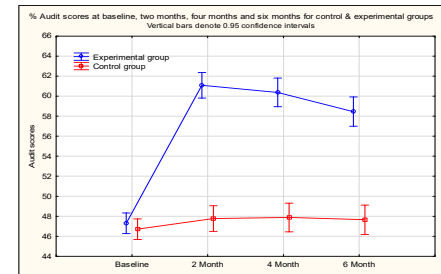
The post-hoc Tukey test indicated that there was no difference in baseline measures (p=.990) but the difference was significant at p<.001 level for every post-intervention

Conclusions

The use of the ICF as a framework for training health professionals regarding interprofessional practice resulted in a significant improvement in knowledge, attitudes and behaviour in interprofessional collaborative practice as well as in patients' functioning.

This introduction of the ICF as the framework to inform interprofessional assessment and management in Rwanda could result in the adaptation of the bio-psycho-social model and a more holistic approach to care.

It is, therefore, hoped that the findings of this study may contribute to improving health care delivery in Rwandan district hospitals and health system at large.

It is thus recommended that the framework be used to promote interprofessional education in Rwanda and other similar countries.

Acknowledgements or Notes

22-27 October 2018
Seoul, Republic of Korea

ICF Reporting Criteria: Guidelines for quality reporting on use of ICF

ID: 519

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Patricia Welch Saleeby[4], Thomas Maribo[1, 5]
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Abstract   ICF Reporting Criteria have been developed to assist researchers, editors and readers to identify quality publications on topics related to the International Classification of Functioning, Disability and Health (ICF). This poster describes the preliminary results of the evaluation of ICF Reporting Criteria.

Introduction

There has been a growing interest in ICF as reflected in the increased number of ICF related publications since the launch of ICF in 2001. The literature is becoming broader in scope, sometimes without full understanding of the ICF framework and taxonomy, leading to misapprehensions about the use.

In 2013 at the annual WHO-FIC Beijing meeting the WHO's Functioning and Disability Reference Group (FDRG) agreed to establish criteria to assist in evaluating the broad range of ICF literature. The draft on criteria were presented at the 2014 WHO-FIC meeting in Barcelona and revised for testing in 2016 by the authors.

The intent behind the development of ICF reporting criteria is to promote transparent, clear and accurate reporting on the use of ICF, similar to other guidelines developed for reporting e.g. TIDIeR for health interventions or PRISMA for systematic reviews and meta-analyses.

The aim of this project is to evaluate whether the criteria are relevant, useful and adequate to be used to improve the quality of publications; by guiding authors in designing and reporting their work, and assisting editors, reviewers and readers to select quality publications.

Methods & Materials

The criteria have been tested on twenty randomly selected articles reporting on ICF. Articles from 2006-2018 of different study designs originating from different journals and authors in various fields and disciplines were included.

255 potential participants known to have knowledge on ICF were invited to evaluate the articles using the criteria. The evaluation was conducted through an online survey and each participant was randomly assigned two articles.

Forty-nine persons (response rate 19 %) accepted the invitation to participate and 31 filled out surveys for one or two articles, providing 58 responses.

Figure 1: WHO ICF Framework, WHO (2001), *International Classification of Functioning, Disability and Health ICF*, Geneva: World Health Organization
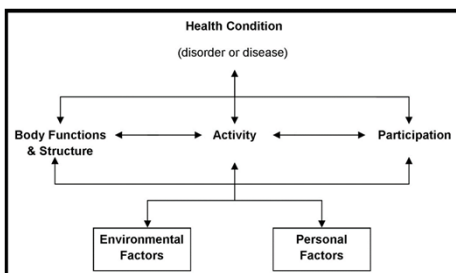
ICF Reporting Criteria

1. Are all components of the ICF framework considered?

    1.1 Which components are NOT considered

    1.2 Reasons for excluding components are explained.

2. The interactions in ICF are considered?

    2.1 ICF interactions are discussed.

3. Demonstrated awareness of the literature pre-dating the study and relevant reference to ICF literature is provided?

4. Explicit reference to ICF definitions and categories are included?

5. Consistent use of ICF language is demonstrated?

6. Where ICF is linked/mapped to another tool description of the methodology is given?

7. If there is linkage between ICF qualifiers and other measures - description of the methodology is given?

8. Description of the use of ICF qualifiers e.g. five point scale, three point scale, present/absent?

    8.1. Description of the reason for selection of qualifier use is provided?

9. The person's perspective is recognized in the reporting?

10. The relationship between the ICF and an ICF based instrument is described.

11. Knowledge translation between different settings is discussed?

Preliminary results

The preliminary results show that 17 of the 31 participants had comments or suggestions for the criteria.

Four participants were positive towards the idea of having ICF reporting criteria while two found the criteria not useful. Six participants stated that revision of criteria was necessary or called for more elaborate explanations of the criteria, and five gave general comments, e.g. on difficulties using the criteria.

Each article was assessed by up to four participants. Several participants reported problems assessing systematic literature reviews using the criteria. However, a count of the answers that met consensus for each article did not show less consensus for the systematic literature reviews than other types of studies.

Future steps

The preliminary results show that further refinement of the criteria is needed. However researchers show interest in the potential of guidelines to secure improved reporting on ICF use in the literature.

Further examination of the inter-rater agreement between the papers assessed by two or more participants will be conducted.

Future work will focus on changing from "criteria" that reflect a defined level of quality to "guidelines" that can be applied to different types of studies.

Acknowledgements

KOREA
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2018

Using ICF on report codification

22-27 October 2018
Seoul, Republic of Korea

ID: 520

Authors: Paulo Eugênio Silva, Bruno Metre Fernandes, Afonso Jorge Venutolo Duarte, Eduardo Santana Cordeiro, Allan Keyser de Souza Raimundo

OT & PT Regional Concil - Region 11, Brazil

Abstract ICF is an important tool to describe reports results through codification. It can be useful for statistics analysis and contribute to a situational diagnosis on functional health in populations, what may help policies development or strategies to heal existing health programs or systems.

Introduction

The International Classification of Functioning, Disability and Health (ICF) is a singular instrument capable for codifying data related on functioning. Moreover, through ICF it is possible is possible to codify limitations of activities of daily living, restrictions of social participation and influences of environmental factors on human performance. The use of codes for data transcription allows the quantitative statistical analyze and thus enables the establishment of more precise information and indicators. It can supply the lack of detailed information about the functional health status of individuals and populations. Thus, the aim of the present study was to present a trial of coding for exams' reports that are used to detect functional changes. Moreover, to observe the applicability of ICF Codes to describe reports conclusions.

Possible Relationship

MAXIMAL INSPIRATORY PRESSURE (MIP)*

Result1: MIP -15 cmH_2O, 20% of normal predicted value; Code: b445.2
Result2: MIP: -87 cmH_2O, 83% of normal predicted value; Code: b445.0
Result3: MIP: -98 cmH_2O, 100% of normal predicted value; Code: b445.0
*Normal values are above 70% normal predicted value.

SPIROMETRY

Result1: Mild obstructive ventilatory defect: Code: b440.2
Result2: Severe mixed ventilatory defect; Code: b440.3
Result3: Severe restrictive ventilatory defect; Code: b440.3

Figure 1 – Respiratory functions in graphs
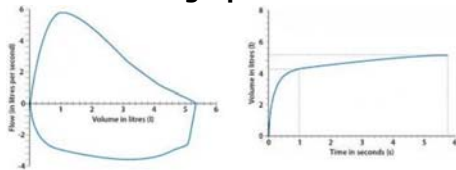
CARDIOPULMONARY EXERCISE TESTING

Result1: very low cardiorespiratory fitness, Peak of oxygen uptake (VO_{2peak}) = 9.1 $ml·kg^{-1}·min^{-1}$ (68% of normal predicted) with VO_2 at ventilatory threshold = 8.8 $ml·kg^{-1}·min^{-1}$ demonstrating high surgical risk. It was not detected suggestive signs of myocardial ischemia up to the reached exercise level: no ST-segment depression.
Code: b455.3

Result2: fair cardiorespiratory fitness, VO_{2peak} = 16.7 $ml·kg^{-1}·min^{-1}$ (105% of normal predicted values). It was not detected suggestive signs of myocardial ischemia up to the reached exercise level: no ST-segment depression, VO_{2peak} > 85% of normal predicted values, Ascendant O_2 Pulse and VO_2/WR.
Code: b455.0

Result3: low cardiorespiratory fitness: VO_{2peak} = 18.3 $ml·kg^{-1}·min^{-1}$ (79% of normal predicted values). It was not detected suggestive signs of myocardial ischemia up to the reached exercise level: VO_{2peak} > 75% of normal predicted values, VE/VCO_2 at ventilatory threshold < 34 e VO_2/WR Slope > 8.3. Presents excellent prognosis in next 1-4 years (≥ 90% event free).
Code: b455.2

Figure 2 – Exams illustrations (A)

Figure 3 – Exams illustrations (B)

Conclusions

It was demonstrated the possible use of ICF to codify exams' reports which should facilitate the collection and analysis of data from a population point of view. This can guide public or corporate policies.

Acknowledgements or Notes

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Narrative research and medicine in neurology and neurosurgery: the biopsychosocial methodological approach based on the ICF Classification of WHO

22-27 October 2018
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ID: 521

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Abstract   Managing people with chronicity and multimorbidity is complex because health and social systems are often not organized to take care of them. This means that a rethinking of health and social systems need to undergo extensive rethinking that include all phases from diagnosis to treatment and care. we need to add to the performance based care model a relational, clinical model that really puts the person at the center. The role of narrative research and of narrative medicine is inserted in this scenario. Researchers talk about narratives as content that includes what emerges from patients' selective memory. In this perspective, the narration succeeds in making sense of the experience by highlighting the priorities of the narrating subject.

Narrative research and ICF

The biopsychosocial model of functioning and disability of the ICF can be used as backbone and as a **method for narrative research**. This biopsychosocial model of health and disability clarifies how essential is the role played by the **environment** in order to ensure good levels of functioning and quality of life of people affected by a health condition, as well as an effective participation in social life.

This suggests that a model of health and disability, that incorporates and synthesizes both the social and the medical perspective, would have the strength of both, without their weaknesses. This is the basic idea behind the adoption of the biopsychosocial model in the ICF which is proposed as a basis for narrative research **in the care process in neurology and neurosurgery**.

The **ICF** can be therefore used both as **a draft to structure a validated scheme for the collection of narratives**, which takes into account holistically the experience of illness in interaction with a person's surroundings, and as a **tool for classifying the illness stories collected (Figure 1)**.Besta Neurological Institute is using since 2016 ICF as backbone for collecting narrative material from patients with neurological and neurosurgical conditions.
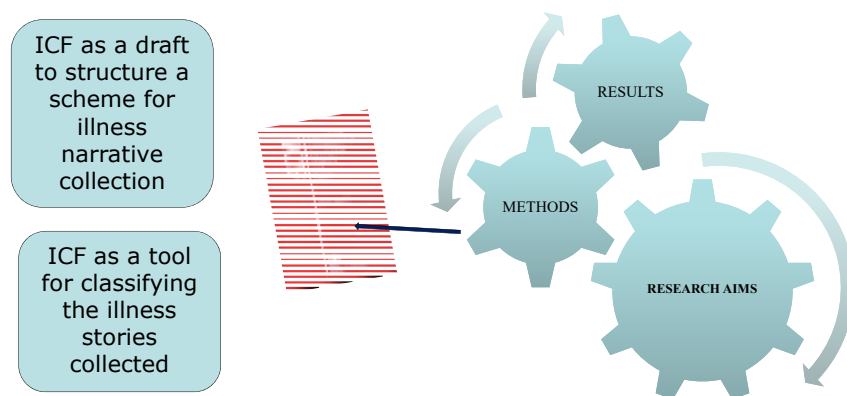
ICF as a draft to structure a scheme for illness narrative collection

ICF as a tool for classifying the illness stories collected

RESULTS

METHODS

RESEARCH AIMS

Figure 1: The ICF as a tool in narrative research process.

Which are the advantages of ICF based narrative research and medicine?

Following 3 years of experience in several studies on narrative research the following advantages have been identified. First of all the possibility of replicability of research and of comparing results, then the possibility of carrying out studies on the individual that could be extended to the population. In this way, narrative medicine enters, in synergy with strategies and therapies codified by medical practice and research, in the Evidence Based Medicine.

The adoption of the biopsychosocial paradigm of ICF in narrative medicine could promote a better understanding of the contribution that narrative brings to the more conventional forms of health information and to the need to highlight cultural contexts in which individuals live.

ICF use in the narrative method must be accompanied by systematic attention to training and support within the reference paradigm, the biopsychosocial one. Whatever the specific technique used, the quality criterion for narrative research includes measurements aimed at ensuring reliability, plausibility and criticality.

Conclusions and remarks

➢ The adoption of the biopsychosocial model in the **ICF here is proposed as a basis for narrative research in the care process in neurology and neurosurgery.**

➢ Illness narratives reflect people's experience and express the meaning they attribute to this experience. Thanks to narrative medicine researchers can also **explore the subjective perspective of the patient through the methodology of narration.**

➢ Accessing to patients' feelings, thoughts and inner experiences, the use of storytelling in health research allows us to interpret and analyze them, and **the ICF biopsychosocial approach allows us to define a narrative method in health research**.

➢ By adopting the biopsychosocial paradigm of ICF in narrative medicine a better understanding of the contribution that narrative can bring to both the more conventional forms of health information and the need to highlight cultural health contexts is provided.

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KOREA
WHO-FIC
NETWORK ANNUAL MEETING
2018

Suggestions for updating WHODAS 2.0

22-27 October 2018
Seoul, Republic of Korea

ID: 522

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Abstract The poster presents some problems that have arisen during the translation into Italian of the Manual and questionnaires of WHODAS 2.0. Some proposals to overcome them are summarized.

Introduction

WHO decided to implement WHODAS 2.0 to measure disability, taking into account that ICF is not a measuring tool and is complex to use. The translation into Italian of the WHODAS 2.0 Manual has highlighted some issues that require a consensual solution.

Methods & Materials

We analyzed:
- Differences between some "ICF concepts" and some "WHODAS 2.0 concepts".
- Differences between WHODAS 2.0 questionnaires and WHODAS 2.0 Manual.
- Differences among WHODAS 2.0 questionnaires.
- Differences among WHODAS 2.0 translations.
- Problems in translating some English terms.

Results

Five types of problems were found:
1. Conceptual (Table 1)
2. Problems in translating some English terms in the questionnaires (Table 2)
3. Problems between Manual and questionnaires (Table 3)
4. SPSS syntax. Table 4 shows wrong text as red strikethrough text and correct text as blue text.
5. Typos.

The poster presents some examples of these problems, with summary comments and some possible changes to be introduced both in the Manual and questionnaires. A document with the full list of problems and their possible solutions was prepared.

Conclusions

The full "WHODAS 2.0 updates document" will be made available to WHO in order to support the release of official updates after discussion and consensual solutions.

Table 2- Examples of problems in translating some English terms in WHODAS 2.0, 36 items, interview

Domain/Question	Text	Problems	Possible changes in the Manual
Domain 4: D4.1 D4.3	Getting along with people Dealing with people you do not know? Getting along with people who are close to you?	At page 51 of the Manual, with reference to D4.1, it is written that "this item refers to interaction with strangers" and some examples of situations in which it is possible to interact with strangers are given. At the same page of the Manual, with reference to D4.3, the instruction refers at "any relationships", with no examples. Are "getting along" and "dealing with" synonyms? As there are not examples in the specifications to D4.3 question, what is the exact meaning of 'getting along'? It seems to have a positive connotation (be friendly, have smooth relations). Is the meaning of "getting along" interacting or having a good relationship? "Dealing with" seems to mean to have to do with. Is "interacting" a good meaning of "getting along" and "dealing with"?	If the meaning of these verbs is the same, only one verb could be less confusing. If the meaning of these verbs is "interacting", the use of the verb "to interact" could be easier to translate. If the meaning to these verbs is not the same, it would useful to have suggestions to translate "getting along" in a less generic way (as interacting is), choosing, for example, the meaning of "getting on well with somebody" (in Italian, *andare d'accordo*). More examples of situations in which relationships occur would help to better understand what the questions ask.
Domain 5: D5.1 D5.2 D5.3 D5.4	Life activities Household responsibilities Household tasks Household work	The term household (noun and adjective) is broad and refers to the housework and the various aspects associated with the daily living, such as caring children and managing finances. There is not a single term in Italian to translate this English concept. It is used both in the Manual and in the questionnaire. Are household work and household task synonyms? The Spanish translation uses the terms "hogar" (as noun) and "doméstico" (as adjective). The French translation uses the term "ménager"(as adjective) to translate household as an adjective. In Italian, the term «domestico» as adjective is referred to activities such as cleaning the house, doing the shopping but not caring for family members. The translation of household (adjective) as "domestico" does not seem a good translation.	The examples in the Manual suggested in D5.1 are about needs that the respondent has to consider. Some examples of household activities are in the questionnaires. It would be useful if the Manual and the questionnaires list the same examples of household activities such as cleaning, cooking, shopping, washing, gardening, organising the household, household administration, home banking, visiting the post office / bank / pharmacy or other, thinking about what needs to be done, outdoor/indoor maintenance, caring for pets, caring for houseplants, etc. The Italian translation of «household responsibilities» was «*attività di cura della casa e della famiglia di propria responsabilità*» Household task/ household work were considered synonymous and were translated with «*attività relativa alla cura della casa e della famiglia*».

Table 3- Examples of discrepancies between WHODAS 2.0 Manual and WHODAS 2.0 questionnaires

Manual page	Manual text	Problems	Possible changes in the Manual text
Page 64 9.2 Typographical conventions, 1 Interviewer instructions	*Example:* B2 How do you rate your physical health in the past 30 days? *(Read response scale to respondent)* In this case, the interviewer would read aloud the response scale.	The B2 question is not present in the questionnaires.	*Example:* Use this scale when responding. *(Read the scale aloud)* In this case, the interviewer would read aloud the response scale.
Page 65 2 Skips within questions	*Example:* Before D5.7: *If box is checked, continue, otherwise, skip to Domain 6 on the next page.*	The text has no correspondence in the questionnaires. For example, in WHODAS 36 items, interview, D5.7 is present in the section 5(2) Work or school activities, and before this section there is no instruction similar to the one proposed in the Manual. Instead, the following sentence is present: *If respondent works (paid, non-paid, self-employed) or goes to school, complete questions D5.5–D5.10 on the next page. Otherwise, skip to D6.1 on the following page.* In the other versions of WHODAS 36 items and in 12+24 items version the sentence is slightly different but not similar to the one proposed in the Manual.	*Example:* At the end of section 5(1) Household activities *If respondent works (paid, non-paid, self-employed) or goes to school, complete questions D5.5–D5.10 on the next page. Otherwise, skip to D6.1 on the following page.*
Page 66 9.4 Asking the questions 1 Read questions as they are written	*Example:* • In response to the question "How much did these difficulties interfere with your life?" if a respondent indicates only one difficulty...	The question used in the example is not present in the questionnaires.	*Example:* • In response to the question "Overall, in the past 30 days, how many days were these difficulties present?" if a respondent indicates only one difficulty...

Table 1 – Example of conceptual problem

Manual page	Manual text	Problems	Possible changes in the Manual text
Page 79, Glossary	Activity *...Activities include simple or basic physical functions of the person as a whole (e.g. grasping or moving a leg), basic and complex mental functions (e.g. learning and applying knowledge), and collections of physical and mental activities at various levels of complexity (e.g. driving a car, interacting with people)...*	ICF (Annex 1, page 213) definition of activity is "execution of a task or action by an individual. It represents the individual perspective of functioning". In WHODAS 2.0 Manual, the activities include "physical functions", "basic and mental complex mental functions", and "complex physical and mental activities", suggesting a "classification" of human activities different from ICF. The first are not activities in ICF, but Body Functions; the second are not physical and mental functions, but they are activities in ICF (see Activities and Partecipation, Chapter 1 – Learning and applying knowledge). The assumption that WHODAS is consistent with ICF seems contradicted.	*[...Activities include simple or basic actions of the person as a whole (e.g. grasping or moving a leg), basic and complex mental processes (e.g. learning and applying knowledge), and collections of physical and mental activities at various levels of complexity (e.g. driving a car, interacting with people)...*

WHODAS 2.0 questionnaire, 36 items, interview	Text	Problems	Possible changes in the Manual text
Section 2 Demographic and background information Section 3 Preamble	*This interview has been developed ...to better understand the difficulties people may have due to their health conditions...* *This interview is about difficulties people have because of health conditions.*	If WHODAS 2.0 is to be consistent with ICF, considering difficulties as a consequence of health conditions means to follow the old ICDH2 conceptual framework. According to the ICF, difficulties in doing activities are assessed using the individual perspective and are named "activity limitations" (see ICF, Annex 1, page 213). These limitations are described using the constructs of performance and capacity, taking into account the Environmental Factors.	Expressions such as "difficulties associated with your health conditions" or "in relation to your health conditions" could be used.

Table 4 – Updates of the SPSS Syntax

```
RECODE
D5_2 D5_1
(1=0) (2=1) (3=1) (4=2) (5=2) INTO D52 D51.
RECODE
D5_3 D5_2
(1=0) (2=1) (3=1) (4=2) (5=2) INTO D53 D52.
RECODE
D5_4 D5_3
(1=0) (2=1) (3=2) (4=3) (5=4) INTO D54 D53.
RECODE
D5_5 D5_4
(1=0) (2=1) (3=1) (4=2) (5=2) INTO D55 D54.
RECODE
D5_8 D5_5
(1=0) (2=1) (3=1) (4=2) (5=2) INTO D58 D55.
RECODE
D5_9 D5_6
(1=0) (2=1) (3=2) (4=3) (5=4) INTO D59 D56.
RECODE
D5_10 D5_7
(1=0) (2=1) (3=2) (4=3) (5=4) INTO D510 D57.
RECODE
D5_11 D5_8
(1=0) (2=1) (3=2) (4=3) (5=4) INTO D511 D58.
compute Do1 = (D11+D12+D13+D14+D15+D16)*100/20.
compute Do2 = (D21+D22+D23+D24+D25)*100/16.
compute Do3 = (D31+D32+D33+D34)*100/10.
compute Do4 = (D41+D42+D43+D44+D45)*100/12.
compute Do51= (D52+D53+D54+D55+D51)*100/10.
compute Do52 = (D58+D59+D510+D511+D55+D56+D57)*100/14.
compute Do6 = (D61+D62+D63+D64+D65+D66+D67+D68)*100/24.

st_s32=(D11+D12+D13+D14+D15+D16+D21+D22+
D23+D24+D25+D31+D32+D33+D34+D41+D42+
D43+D44+D45+D52+D53+D54+D55+D51+D61+D62+
D63+D64+D65+D66+D67+D68)*100/92.

st_s36=(D11+D12+D13+D14+D15+D16+D21+D22+
D23+D24+D25+D31+D32+D33+D34+D41+D42+D43+
D44+D45+D52+D53+D54+D55+D51+D56+D57+D58
+D59+D510+D511+D61+D62+D63+D64+D65+
D66+D67+D68)*100/106.
```

WHODAS 2.0 defined predictors of disability in patients with idiopathic intracranial hypertension

22-27 October 2018
Seoul, Republic of Korea

ID: 523

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Abstract The biopsychosocial model that defines disability as interaction of health condition with environment is the base for WHO DAS 12 that has been used to predict disability in a sample of patients with Idiopathic intracranial hypertension (IIH). IIH is characterised by raised ICP with no established pathogenesis, and is associated to obesity, female gender and headache. We showed that the main predictors of disability, as measured by the WHODAS 2.0 are headache frequency and symptoms of depression, which are not among the diagnostic criteria of IIH.

Introduction

Idiopathic intracranial hypertension (IIH) is a disorder characterised by raised intracranial pressure (ICP) with no established pathogenesis.
The disorder is strongly associated with obesity, and most of patients are female of reproductive age.
Symptoms of IIH include headaches, often chronic and with associated overuse of symptomatic medications, transient visual obscuration, papilledema and eventually optic nerve atrophy.

Methods & Materials

To address the predictors of disability we ran a linear regression analysis with target the WHODAS 2.0, 12-item variant total score.
To select predictors, we ran correlations/t-tests between WHODAS 2.0, 12-item variant and continuous variables, namely: BDI-II total score, headache frequency and severity, BMI, ICP, presence of Binge Eating Disorder, of episodic/chronic headache, visual impairment, papilledema, optic neuropathy.
Those variables that were significantly correlated to the WHODAS 2.0, 12-item variant were retained for the linear regression analysis.

Results

Between April 2013 and November 2017, 81 adult patients with sign and symptoms suggestive of IIH were enrolled. The diagnosis was confirmed in 51 of them.

Table 1 reports the main characteristics of participants and the statistic for the selection of regression predictors.

Most of the patients were headache sufferers, and 39% had chronic headache, BMI is suggestive of common obesity and 7 patients had comorbidity with Binge Eating Disorder. Two-thirds of the patients had either visual impairments or papilledema and one-third had optic neuropathy. The average WHODAS 2.0, 12-item variant score is suggestive of a relevant disability level in the sample, and the average BDI-II is suggestive of an overall mild symptoms of depression.
Headache diagnosis, headache frequency, presence of visual impairment, BMI and BDI-II scores were retained as predictors for the regression analysis.
The final model (Table 2) explained **32% of WHODAS 2.0, 12-item variant variation** and the independent predictors were **headache frequency** (β=.264, *P*=.038) and **symptoms of depression** (β=.434, *P*=.001).

Conclusions

Patients with IIH may report important disability due to presence of headache, visual impairments, obesity and associated symptoms of depression.
All of these variables were associated to disability in the patients herein enrolled, and our results show that **headache frequency and the severity of depressive symptoms were independent predictors of disability levels**.
What it is interesting to notice here is that the two main predictors of disability are not among the diagnostic criteria for IIH, although their association is known.
Treatment for IIH is mostly aimed at reducing ICP, with important benefits on visual function through papilledema reduction and optic nerve atrophy averting, but clinicians should also consider the relevance of headache frequency reduction and mood state improvement to impact on patients' daily lives.

Table 2: Regression model for WHODAS 2.0, 12-item variant prediction

	β	P-value
Independent predictors		
Headache Frequency	.264	.038
BDI-II	.434	.001
Excluded Predictors		
Headache Diagnosis	.109	.441
BMI	.138	.273
Visual impairment	-.151	.224

Note. DBI-II, Beck Depression Inventory, second version; BMI, Body Mass Index; WHODAS 2.0, 12-item World Health Organization Disability Assessment Schedule.

Acknowledgements or Notes

Table 1: Main sociodemographic and clinical features and association with WHODAS 2.0, 12-item variant

	N (%); mean±SD	Correlation & t-test with WHODAS 2.0, 12-item variant
Female Gender	45 (88.2%)	t= 0.644
Age	37.4±12.8	r= -.114
Headache Diagnosis	40 (78.4%)	t= 2.389*
Chronic Headache Diagnosis	20 (39.2%)	t= 1.953
Headache Frequency (3 months)	35.7±35.2	r= .382*
Average Pain Intensity	5.6±2.5	r= .206
Visual Impairment	34 (66.7%)	t= 2.053*
Optic Neuropathy	18 (35.3%)	t= 0.626
Papilledema	32 (62.7%)	t= 0.744
BMI	33.0±6.7	r= .296*
BED diagnosis	7 (13.7%)	t= 0.638
ICP	333.2±93.3	r= .085
BDI-II	11.2±7.7	r= .506*
WHODAS 2.0, 12-item variant	22.8±15.2	–

Note. BMI, Body Mass Index; BED, Binge Eating Disorder; ICP, Intracranial Pressure; DBI-II, Beck Depression Inventory, second version; WHODAS 2.0, 12-item World Health Organization Disability Assessment Schedule.
*P<.05.

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

The applicability of the World Health Organization Disability Assessment Schedule (WHO-DAS 2.0) in Japan

22-27 October 2018
Seoul, Republic of Korea

ID: 524

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Abstract   This study examines the applicability of WHO-DAS 2.0 Japanese version to community-dwelling disabled. This assessment tool developed by WHO based on the ICF concept and has already been translated into Japanese. As a result of the research, the characteristics of the life function of each type of disability were grasped. However, since there are many assessment tools in Japan, it was considered necessary to examine the possibility of utilization by focusing on items not in other assessment

Introduction

WHO-DAS 2.0 is an assessment tool developed by WHO to evaluate failure from a different perspective than a measurement tool using ICF code (Üstün et al, 2004). Although this WHO-DAS 2.0 has already been translated into Japanese, the clinical indication has been reported to have many challenges (Tsutsui, 2014).

However, based on the concept of ICF, assessment that evaluates subjective functioning and social participation is not in the previous tools, but it is considered that this standardization will be utilized as a material for enhancing the support required by the support person by social services. In this study, the purpose of this study was to assess the possibility of living function by using data from the WHO-DAS 2.0 Japanese version (36 items and self-reporting) collected in the questionnaire survey conducted for persons with disabilities who live in the community.

Methods & Materials

A survey was carried out by mail in August 2014 for 500 persons living in the suburbs of Tokyo area in Japan (Physical disability, intellectual disability and mental disorder using social services), and 347 cases were collected (69.4%). The anonymized survey data were collected to analyze the relationship between the basic attributes and the results of the WHO DAS 2.0 assessment.

Table 1 Basic attributes of survey respondents

	N	%		N	%
Age category			Status of the living person		
Under the age of 18	26	7.5	Only spouse	85	24.5
Age 18 to age 40	41	11.8	No living together	72	20.7
Age 40 to age 64	90	25.9	Father, mother, and brother	25	7.2
Age 65 or older	190	54.6	Father and mother only	23	6.6
Status of disability certification			Spouse (husband and wife) and son	23	6.6
Physical disability certifica	168	48.4	Residential environment		
Intellectual disability cert	27	7.8	living alone	47	13.5
Mental disorder certificati	31	8.9	Living with family members (Include a two-fa	257	74.1
Two or more certification	4	1.2	Other (Facilities, group homes, etc.)	11	3.2
No Certification	17	4.9	N/A	32	9.2
N/A	100	28.8	Use of livelihood support services for disabled people		
Physical disability certification			Available	15	0
Grade1	81	23.3	No use	212	61.1
Grade2	32	9.2	N/A	120	34.6
Grade3	41	11.8	Use of daytime activities for disabled persons		
Grade4	59	17	Available	10	2.9
Grade5	14	4	No use	252	72.6
Grade6	10	2.9	N/A	85	24.5
None	77	22.2	Use of Long-Term Care Insurance Services		
N/A	33	9.5	Available	56	16.1
Intellectual disability certification			No use	165	47.6
A-	5	1.4	N/A	126	36.3
A+	11	3.2			
B	14	4			
C	11	3.2			
None	224	64.6			
N/A	82	23.6			
Mental disorder certification					
Grade1	2	0.6			
Grade2	30	8.6			
Grade3	19	5.5			
None	221	63.7			
N/A	75	21.6			

Results

1. **Overview of Analytical Data** Looking at the age category of the survey subjects, the majority of respondents aged 65 and over were over 54.7%. The mean age was 60.7 years (SD ± 22.7). Many of the need for assistance was independent of "No need for nursing care or assistance" 51.3%. The types of failures were "Physical disability certification only" 48.4%, "Only mental disorder certification" 8.9%, and "Intellectual disability certification only" 7.8%.

2. **WHO-DAS 2.0 domain profile.** Among the six domain of WHO-DAS, the highest score was "(6) participation in society" 42.3, "(5-1) Work" 34.6, "(4) Getting along with People"33.5, "(5-2) Household" 32.6, "(2)Getting around" 22.6, "(1)Understanding & Communication"22.4, the lowest is (3) self-care 17.5. There were many N / A questions in the question "(5-2) Household" and "(6) participation in society".

3. **Relationship between ADL and IADL** scores and WHO-DAS scores The relationship between ADL and IADL scores and WHO-DAS scores was investigated and examined. Both ADL and IADL scores were shown to be related to "(5-1) Work" and "(6) participation in society".

Figure 1 WHO-DAS2.0 domain profile by subgroup

Table 2 Results of regression analysis

	ADL score		IADL score	
	β	P-Value	β	P-Value
(constant)		0.00 **		0.00 **
(1)Understanding & Communication	-0.19	0.00 **	-0.34	0.00 **
(2)Getting around	-0.33	0.00 **	0.10	0.05
(3)Self care	-0.54	0.00 **	-0.31	0.00 **
(4)Getting along with People	0.12	0.02 *	-0.15	0.01 **
(5-1)Work	0.06	0.28	-0.23	0.00 **
(5-2)Household	-0.02	0.51	0.05	0.18
(6)Parcitipation in society	0.03	0.49	0.02	0.57
		R2=0.67, P<0.01		R2=0.66, P<0.01

Conclusions

It is important finding that the characteristics of life function by type of disability have been clarified by implementing WHO-DAS 2.0 for residents with various disabilities in the region.

In particular, the visualization of the barriers to social participation of mentally disabled people has shown that social services to eliminate this disability need to be enriched.

In the future, in order to enhance social services in accordance with the degree of functioning, it was considered necessary to consider policy guidance to implement WHO DAS 2.0 to local residents in many areas.

Feedback from the survey of WHO-DAS 2.0 revealed that there are some areas that are difficult to understand in the survey items, and it was considered necessary to develop guidelines for the implementation of the survey and implement the research in accordance with the current situation of the Japanese society.

For the dissemination of the WHO-DAS 2.0, further demonstration tests should be used to enhance the accuracy of the Japanese version of the WHO-DAS 2.0 and to accumulate examples of clinical improvements using WHO-DAS 2.0.

Acknowledgements or Notes

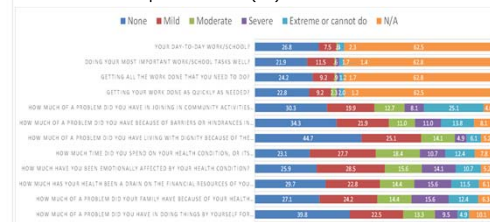Figure2 "(5 -2) Work" and "(6) Participation in society" domain items response status (all)

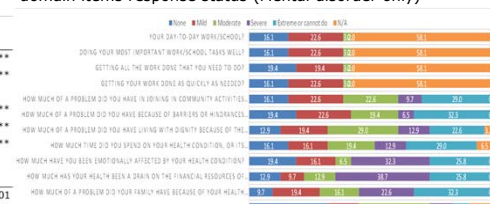Figure3 "(5 -2) Work" and "(6) Participation in society" domain items response status (Mental disorder only)

The IDAGIT Study on ageing in Italian population: preliminary results

22-27 October 2018
Seoul, Republic of Korea

ID: 525

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Abstract Aging of Italian population is influenced by medical, economic and social changes, which make people live longer, in particular in the European Countries where the percentage of citizens aged 60+ will rise from 20.3% to 28.8% between 2000 and 2025 (WHO). Italy is one of the European countries where the rise of the survival rate will be one of the fastest in the European area. The **IDAGIT Project (Identification of Determinants of Healthy Aging in Italy)** aims to provide valid and reliable information on determinants of health and disability in the Italian aging population. Tailored instruments were used to acknowledge the role of environmental factors on health status of ageing people and in particular the role of built environment and social networks. Results showed as an extensive and integrative approach to ageing can be helpful for the implementation of the health policies.

Introduction

In Europe, the percentage of persons older than 60 was 20,3% in 2000, but it will rise to 28,8% in 2025, while the median age will rise from 37,7 to 45,4. The increasing in proportion of older people in Europe is the result of unprecedented economic, social, medical and technological changes that have made it possible to live an active life.

At population level, individuals' health condition is hardly modifiable, but **disability, defined as the interaction of health conditions with environmental factors, can be decreased acting on more changeable environmental factors** such as built environment and social networks.

The biopsychosocial model of WHO's International Classification of Functioning, Disability and Health (ICF) could be an useful framework for research on healthy ageing because it considers disability as a multi-dimensional phenomenon.

This research aimed to collect data on healthy ageing in Italy and to understand what kind of variables could be related to outcomes such as quality of life and well-being scores during the ageing process.

Methods & Materials

Study design:
Cross-sectional study.
Duration: 36 months (from November 2014 to November 2017)
Study population: individuals aged 18+
Sampling design: probabilistic sampling design, stratified by age (18-49 and 50+) and gender.

Statistics:
Descriptive statistics of the study sample, by age classes (18-49 and 50+) and overall, were presented as percentage or mean values (± standard deviation) as appropriate. Weighted data have been used to account for sampling design.

The IDAGIT protocol was composed of different domains: Quality of life, Built environment, Social cohesion, Health and Mobility.

For selected domains, Confirmatory Factor Analysis was carried out using the principal component extraction method in order to identify underlying factors.

The factor scores were normalized [normalized score= (respondent score – min score)/(max score – min score)*100] so to range between 0 and 100, where 100 represents the best situation for the corresponding factor.

Analysis has been performed with SAS version 9.4.

Results

A total of 526 persons were interviewed. Females were the 52.6% and the distributions for age categories were n=266 for the sub-group 18-49 years old and n=260 for the 50+ group. The 82% (n= 431) of the sample lived in an urban area and the 46.5% (n=244) was married. The 59.6% (n=259) worked almost 2 days in a week at the moment of the interview, whereas the 31.7% (n=165) of the persons were retired. Regarding the domains analyzed, the mean score in Social cohesion was 75.5 in the total sample, and 73.3 in the sub-group 50+. Within the sub-group 50+, the mobility score was 90 in persons with less than two chronic diseases and 72.2 in those with more than two pathologies. In the same sub-group, the quality of life score was 71.5 in those persons who had not a paid job and 72.2 in those with more than two chronic diseases. In the sub-group 18-49, persons who ate almost five portions of fruits and vegetables showed a quality of life score 6 points higher than those who did not eat them. The half of the sub-group 18-49 showed a quality of life score 8 points higher if they lived in a place obtaining a good/optimal score in the built environment scale.

Conclusions

The IDAGIT validated protocol could be considered a guideline protocol for the data collection on ageing based on WHO-International Classification of Functioning and Disability. Considering that the health state is hardly modifiable in ageing population, public health actions will be fundamental to decrease environmental barriers and increase social cohesion. In this sense, our **data preliminary showed as the level of employment, lifestyle and built environment can have a real impact on quality of life** in both sub-groups of age and ageing process.

In the next future, IDAGIT data will be compared to data from other international projects, such as EU COURAGE in Europe (Collaborative Research on Aging in Europe) and WHO SAGE (Study on Global Ageing and Adult Health) researches. Results will also be shared and discussed with relevant stakeholders in the field of policy development for disability as well as for active and healthy ageing.

Acknowledgements or Notes

The Promotion of cooperation among pediatric rehabilitation experts in Japan
-using Ability for Basic Physical Activity Scale for Children (ABPS-C)

22-27 October 2018
Seoul, Republic of Korea

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ID: 526

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Abstract The aim of this study was to facilitate cooperation of various pediatric rehabilitation specialists using Ability for Basic Physical Activity Scale for Children (ABPS-C). Reliability and validity of this measure have already been verified. The result showed that neurotipical participants had almost full score of all subcategories. It suggest that the ABPS-C have possibility of assessing child's participation level, as well as of useful instrument in order to facilitate corporation with various service providers.

Introduction

In pediatric rehabilitation, the proposes of medical treatment are to improve physical condition and mental state, to assist the patients in acquiring ability so as to fulfill his/hers daily living, and to improve community environment in which children with disability can participate in personal and social activity.

The aim of this study was to facilitate cooperation of various pediatric rehabilitation specialists using Ability for Basic Physical Activity Scale for Children (ABPS-C). It is the simplest assessment tool concerning child activity and participation, which compose of reflecting items of ICF's Activity and Participation component.

Methods & Materials

Participant：
The subjects of the study were 84 children participating in the SGA birth cohort study at The National Center for Child Health and Development, who born during the period from December 2010 to April 2013.

Data Collection：
Assessment of the participant's Activity and participation level was conducted at the age of 60 months using ABPS-C.

Material:
The ABPS-C is made up of 5 items; "Basic movements", "Self-care", "Activity", "Education" and "Leisure Activity". These domains referred to the first-level category of the ICF's Activity and participation component. The evaluation scores (Each sub-items are range from 0 to 3 and total score of the ABPS-C is from 0 to15.) are set by the maximum ability that participants can demonstrate at that time.

Ability for basic physical activity for children (ABPS-C)

◆There are two types of ABPS-C; one is pre-schooler version the other is schooler version. This study was conducted using pre-schooler version.
◆Reliability and validity of this measure have already been verified(Kamide,2017, Hashimoto,2017).
◆Each item was rated on a 4-point scale from 0 to 3, which indicated the best performance at that time.

The explanation of each sub-domains is as follows:
"Basic movements" which corresponds to "d4 Mobility" of ICF demonstrates performance to move from lying down position to being able to walk.
"Self-care" which is equivalent to "d2 General tasks and demands" and "d5 Self-care" is how well carrying out activities of daily living by oneself.
"Activity" which made from items of "d2 General tasks and demands" and "d6 domestic life" demonstrates performance of everyday actions and tasks.
"Education" which corresponds to "d8 Major life areas" is indicator of evaluating to what extent social interaction thorough participating the educational environment or relationship with non-family members.
"Leisure Activity" which is equivalent to "d2 General tasks and demands" and "d5 Self-care" intend to identify the child's state of social participation as leisure.

Results

The each score of "Basic movements" and "Leisure Activity" was 3.0($\pm$0), "Self-care" was 2.774($\pm$0.523), "Activity" was 2.940($\pm$0.238) "Education" was 2.992($\pm$0.076). All items showed almost full score at the age of five years.

Items of ABPS-C	Mean $\pm$ SD
Basic movements	3.0 $\pm$ 0
Self-care	2.774$\pm$ 0.523
Activity	2.940 $\pm$ 0.238
Education	2.992 $\pm$ 0.076
leisure	3.0 $\pm$ 0

Discussions

Result indicated that the score of each items on ABPS-C at 5years children was nearly full. In this point, if disabled children with chronic disease or developmental disorder cannot take full score of the ABPS-C, they will have some problems to take part in daily living and/or social participation. In such case, pediatric rehabilitation facilities and specialist may need to consider direct rehabilitative intervention and/or environment support.

Conclusion

It is important for rehabilitation specialists to grasp achievement of child's physical and mental well-being and participation living up to his/her developmental stage. However, Japanese specialists have ever had little evidence on child's involvement of their social participation and assessment of this function and performance.
The ABPS-C which is based on ICF concept has high usability on confirming child's state of activity of daily living and social participation. It is expected to make use of this tool to promote experts collaboration in the field of pediatric rehabilitation.

KOREA
WHO-FIC
NETWORK ANNUAL MEETING
2018

22-27 October 2018
Seoul, Republic of Korea

EMPLOYMENT AND DISABILITY: ASSESSING WORKING CAPACITIES WITH WHO DAS 2.0 AND ICF CHECKLIST DEDICATED TO LABOUR POLICIES

ID: 527

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Abstract This study aims to present strategies to implement the use of WHO DAS 2.0 and ICF in the work sector, highlighting the functioning and capacities of the person with disability as the result of an interaction between a certain health condition and the surrounding environment. Using a protocol that includes the ICF check-list dedicated to labour policies and the WHO DAS 2.0 it is possible to take into account the functioning of the person with disability in relation to the working situation, in order to give appropriate opportunities of work, by reducing barrier and promoting participation.

Introduction

Recent studies showed that people with disabilities (PwDs) are frequently considered, in the work sector, for their impairments, more than for their abilities or capacities. In addition, often PwDs are employed to a lower level respect their abilities and capacities.

But, in a biopsychosocial perspective, we must consider the functioning of PwDs in relation to the environment, especially the working environment.

There is the need to focus on the skills of individuals to enable companies to offer adequate job opportunities.

The aim of this study is to present strategies to implement the use of ICF and derived instruments in the work sector, to make it possible to provide tools useful to those responsible of job placement and Human Resources, in order to improve the matching between workers, including PwDs, and job position.

Methods & Materials

A cross-sectional longitudinal study has been conducted in 2017/2018, using a protocol that included the **ICF check-list dedicated to labour policies** and the **WHO DAS 2.0.** 50 adults, with different impairments, have been enrolled: 30 of them in a situation of job maintenance and 20 in a situation of Job placement.

Job maintenance means a situation in which PwDs worked for several years in the same work position while job placement is the first experience of PwDs in a new work position.

PwDs in job placement have been interviewed in 3 steps while PwDs in job maintenance have been interviewed in 2 steps.

All of them entered in the labor sector thanks to specific Italian legislation that sets quotas for PwDs, Law 68/99.

Results

During the three steps of the evaluation, all changes in work situation were observed. The majority of PwDs in a situation of job maintenance had a permanent contract while all PwDs in a situation of job placement started their work experience with a stage.

JOB PLACEMENT			
	Step 1 (N=20)	Step 2 (N=19)	Step 3 (N=17)
Stage	13	7	2
Fixed-term contract	7	12	15
Permanent contract	0	0	0
JOB MANTEINANCE			
	Step 1 (N=30)		Step 2 (N=25)
Stage	7		2
Fixed-term contract	5		6
Permanent contract	18		17

Table1: Job situation during the course of the study

It has been observed that a friendly and welcoming work environment, especially in terms of work group climate, that looks at the needs of the workers, can promote a better work performance. If the environment represents instead a mild or medium barrier, it is possible that it inhibits the growth of individual skills and lowers the working performances.
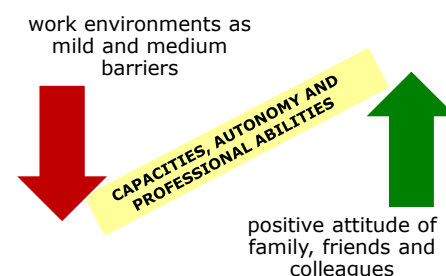
work environments as mild and medium barriers

CAPACITIES, AUTONOMY AND PROFESSIONAL ABILITIES

positive attitude of family, friends and colleagues

Chart 2: Results on the use of ICF Classification in the measurement of functioning and the role of environment

Conclusions

The increasing stabilization of PwDs in a situation of job placement thanks to scaling from stages to permanent contracts could also depend on the improvement of the individual skills, made possible also by a welcoming and inclusive working environment.

A comprehensive Disability Management in the work sector could benefit by considering the intrinsic capacities and the functioning of the worker in relation to his/her environment. In addition, the participation of persons in the labour sector and the improving of work productivity could be facilitated by the matching between personal needs and capacities with employment needs.

A project that includes the implementation of actions aimed at supporting both companies and PwDs, and trying to develop the skills of all actors involved in managing disability is fundamental to respond to the needs of the work sector and to the respect of the right to work of all people, including PwDs.

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Acknowledgements

610-612

ICHI Beta 2018 – Testing Phase 1

22-27 October 2018
Seoul, Republic of Korea

ID: 601

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Abstract   Following the 2017 annual WHO-FIC meeting in Mexico, the ICHI development team requested proposals from those who had indicated an interest in participating in the Phase 1 testing of ICHI. More than 20 proposals were received and these focus on medical/surgical interventions, primary care and professional organizations e.g. occupational therapists, physiotherapists, speech therapists and audiology. The broad categories for testing consist of 4 types:

- To code data
- To map an existing classification or list to ICHI
- To review sections of ICHI
- To translate

Phase 1 was completed during May – June 2018, with all comments added to the ICHI Platform for review during July – September 2018 and these will inform ICHI Beta 2 development. It has been proposed that Phase 2 testing will be a formal test of ICHI Beta 2 and will be conducted following the annual WHO-FIC meeting in Seoul, Korea.

This poster will highlight the results from the Phase 1 testing of ICHI.

Introduction

Content development for the International Classification of Health Interventions (ICHI) has continued to progress. This poster describes the results from the Phase 1 testing of ICHI Beta 2018.

Methods & Materials

Four types of broad categories for testing ICHI were identified and consisted of: 1. to code data, 2. to map an existing classification or list to ICHI, 3. to review sections of ICHI and 4. to translate. Nineteen proposals for testing were received which covered a number of the broad categories as per the table below:

ICHI Beta 2018 Phase 1 test performed	
1. Coding trial	8
2. Mapping	13
3. Content review	9
4. Translation	2

Table 1 : ICHI phase 1 tests

The process also involved adding any comments on ICHI interventions or axis categories onto the ICHI Platform using the 'Comment' facility.

At the conclusion of the test participants were asked to respond to a number of general questions to describe the overall outcomes of the test performed.

Results

Comments were reviewed by the ICHI editorial team and implemented where appropriate. Those requiring clinical input were referred to the chairs of the technical working groups.

Summary of some of the major findings included:
- Need to expand surgical interventions to include current surgical approaches e.g. minimally invasive surgery (Means AB: Percutaneously endoscopic)
- Unbundling of lymphatic structures to include specific target sites and related interventions
- Need to review Action and Means axes for overlap
- Inclusion of more specific audiology interventions

Table 2 and Figure 1 below illustrates the number of comments added to the ICHI Platform by ICHI Section and Chapter during the Phase 1 tests and their status as at 20 August 18.

Section 1 Interventions on Body Systems and Functions	Implemented	Further discussion	Not yet reviewed	Not adopted	Total comments received
1 Interventions on Nervous System and Mental Functions	12		13	1	26
2 Interventions on the Eye	9		1	5	15
3 Interventions on the Ear and Ear Functions	19		5	6	30
4 Interventions on Haematopoietic & Lymphatic Sys.	11	1	10	6	28
5 Interventions on the Endocrine System	3		3	1	7
6 Interventions on the Cardiovascular System	49	1	10	1	61
7 Interventions on the Respiratory System	10		18	3	31
8 Interventions on the Digestive System	47	6	24	13	90
9 Interventions on the Integumentary System	64	11	75	13	163
10 Interventions on the Musculoskeletal System	100	4	61	29	194
11 Interventions on the Urogenital System	222	9	199	41	471
12 Interventions on Other and Unspecified Body Systems and Functions	41	1	14	10	66
Total	**587**	**33**	**433**	**129**	**1182**

Section 2 Interventions on Activities and Participation Domains	Implemented	For further discussion	Not yet reviewed	Not adopted	Total comments received
13 Interventions on Learning and applying knowledge			3		3
14 Interventions on General tasks and demands	1		6		7
15 Interventions on Communication	2		5	2	9
16 Interventions on Mobility	4		7	3	14
17 Interventions on Self Care			6		6
18 Interventions on Domestic life	2		3		5
19 Interventions on Interpersonal interactions and relationships	4				4
20 Interventions on Major life areas	5		6	3	14
21 Interventions on Community, social and civic life	15				15
Total	**33**		**36**	**8**	**77**

Section 3 Interventions on the Environment	Implemented	For further discussion	Not yet reviewed	Not adopted	Total comments received
22 Interventions on the Environment: Products and technology	4		14	1	19
23 Interventions on the Natural Environment including human changes			1		1
24 Interventions on the Environment: Support and relationships			4		4
25 Interventions on the Environment: Attitudes			1		1
26 Interventions on the Environment: Services, Systems, Policies			3		3
Total	**4**		**23**	**1**	**28**

Section 4 Interventions on Health-related Behaviours	Implemented	For further discussion	Not yet reviewed	Not adopted	Total comments received
27 Interventions of Health-related Behaviours	11		8		19
Total	**11**		**8**		**19**
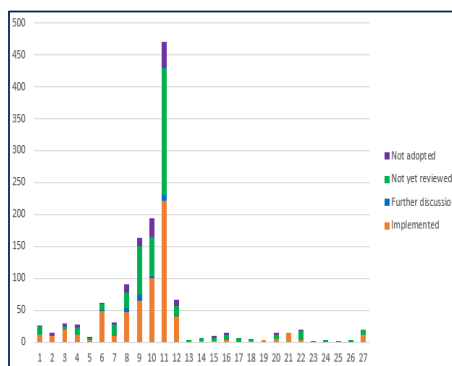
Conclusion and Acknowledgements

Review of testing comments continues to develop ICHI content with the next version for release in October 2018: ICHI 2019 Beta 2. This version will then inform the formal Phase 2 testing of ICHI during 2019.

Thanks are extended to all ICHI Phase 1 testers, the Medical/Surgical and Functioning TWGs, the ICHI Development Team and WHO-FIC Collaborating Centres for their ongoing contributions and support.

KOREA
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2018

ICHI beta 2018 Field Testing in Korea

22-27 October 2018
Seoul, Republic of Korea

ID: 602

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Abstract   A total of 2,100 line-coding with ICHI beta 2018 were performed by 20 clinical coders, including 5 doctors and 5 TM doctors. All participating groups recommended that the axis structure of ICHI would be reasonable as compared to the classification system previously used and would improve data availability. Participants showed inaccurate or inconsistent coding results especially in newly developed ICHI areas. With FT, many participants were introduced to ICHI for the first time. This continuous efforts will not only contribute to complete ICHI contents, but also help to increase awareness, and enabling smoother transition in the future.

Introduction

ICHI content has been translated into Korean language and application tests were conducted to find the gap between ICHI and the Korean clinical field with the current classification system since 2015. Through these continuous attempts, we tried to increase awareness and the interest in ICHI by potential users as well as to actually reduce gaps between ICHI and clinical fields. Currently, we examined the applicability of ICHI beta 2018 to Korean clinical fields by applying it to 100 interventions, and expanding test participants to medical doctors and traditional medicine doctors as well as clinical coders.

Methods & Materials

Field Testing (FT) was conducted in four large phases, as shown in Table 1. Due to the expertise and coding experience of each of the three participant's groups were different, the intervention list was developed differently for each group. In other words, since the doctors were composed of 5 digestive specialists, it consisted of digestive interventions and TM interventions for TM doctors. The coding difficulty of the interventions consisted of approximately 50% flat and the rest in medium and high levels including newly attempted area in ICHI.

Table 1. 4 phase of FT and tasks

Phase	Tasks	Details or activities
1. Preparation of testing material	Translation	Test guideline and other materials translated into Korean Language
	Build up intervention list to test by each participant's group	100 for clinical coders, 10 for doctors and 10 for TM doctors
	Build up detail training material and example	Detail training materials, which is including specific examples for each groups, developed.
	design testing data input form	Access DB for clinical coders, excel for doctors, paper for TM doctors
2. Recruit participants	recruit participants	20 clinical coders, 5 physicians and 5 TM doctors
3. Perform test	Pilot test	pilot test performed by 3 FT coordinator and modified detail materials
	ICHI coding training	Each group of participants was trained on how to perform and conduct the test with group specific materials.
	Actual Test	Off site testing performed by clinical coders and doctors and on site testing performed by TM doctors.
	Focus group interview(FGI)	6 clinical coders, 5 doctors and 5 TM doctors participated in FGI, free opinions were heard otherwise the test.
4. Report	Input data and cleansing	Overall test result was gathered with a unified form.
	Analysis	Analysis performed with actual test and FGI results.

Participants assigned ICHI codes for given interventions. For each code, all participants performed an evaluation based on four elements on a 5 points scale with some additional comments on it.

Chart 1. FT template

Results

A total of 2,100 line-coding were performed. The coding results of three groups were very different from the way in which more than one stem code or extension code was available for a single intervention. While doctors and TM doctors mostly gave one stem code per intervention, clinical coders tended to code all the information presented, and providing more codes than predetermined.

Table 2. No. of assigned codes by job class

Job class	Cases* Participant	Stem		Extension	
		Ans.	Pre.†	Ans.	Pre.†
Clinical coders	100*20	2,345	2,280	1,252	880
Doctors	10*5	50	60	-	10
TM doctors	10*5	50	50	12	20

† The predetermined codes built up by the FT operator.

The agreement between actual and predetermined codes was considered for the first stem codes only. The overall rating was 69.5% and the means was the highest with 90%, followed by the Target and Action with 85.3% and 77.8% respectively.

Table 3: Agreement of primary stem codes

Agreement(N,%)				Total cases
Overall	Target	Action	Means	
1,459(69.5)	1,792(85.3)	1,633(77.8)	1,891(90)	2,100

The distance between the actual and the predetermined codes on the target was calculated on a 5 point scale. The chapter with the most discrepancies was 'Environment: Support and Relationship' where all participants replied that this was not familiar and difficult through FGI

Chart 2: Distance between actual(A) and predetermined(B) codes
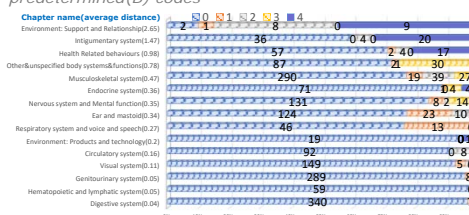
Condition	Distance
A=B	0
1st digit of A=1st digit of B	1
2nd digit of A=2nd digit of B	2
No match in 2 digits but within a same chapter	3
Other than aboves	4

Clinical coders and physicians rate greater than 4.5 points for clarity of definition, granularity, and mutual exclusion, but gave relatively low scores, about 3 points for ease. On the other hand, TM doctors gave high marks for ease of use compared to other groups by four points, but the remaining three were down to two or three points.

Chart 3: Evaluation on ICHI by job class

Clinical coders   *Doctors*   *TM doctors*
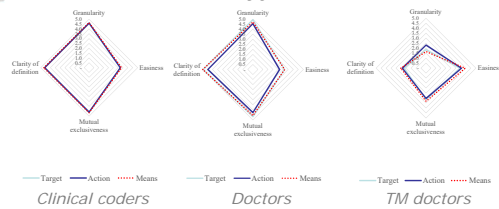
Clinical coder is a group that is familiar with ICD-9-CM vol.3 and doctors and TM doctors are familiar with EDI, which is Korean National Health Insurance fee schedule. Through FGI, all three groups said that the axis structure of ICHI would be reasonable compared to the classification system previously used and would fairly improve data availability. However, while clinical coders and physicians believe that the granularity of ICHI have improved compared to the previous one, TM doctors are not satisfied and suggested that further development is necessary.

Conclusions

Participants showed inaccurate or inconsistent coding results for newly developed ICHI areas, which are unfamiliar to them. It takes time to get used to, and it can improve as they use it. The TM group suggested that Korea and other major TM countries need to actively participate independently in a possible future development of an ICHI TM module. With FT, many participants were introduced to ICHI for the first time. This continuous effort will not only contribute to complete ICHI content, but also help to increase awareness, enabling smoother transition in the future.

Acknowledgements or Notes

Mapping Swedish surgical and functioning interventions to ICHI

22-27 October 2018
Seoul, Republic of Korea

ID: 603

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Abstract The Swedish classification of health care interventions (KVÅ) consists of about 9600 interventions. The aim of the study was to map a number of surgical and functioning interventions to ICHI to see how well they match. 50 orthopaedic surgical and 50 functioning interventions were mapped. The mapping results show that surgical interventions in KVÅ were mostly mapped to *one* ICHI stem code whereas the functioning interventions in KVÅ are broader and were mapped to *several* ICHI stem codes.

Introduction

The Swedish classification of health care interventions (KVÅ) consists of two parts: surgical interventions (about 6000 interventions) from the NOMESCO Classification of Surgical Procedures (NCSP) and non-surgical Swedish interventions (about 3600 interventions also including functioning interventions).

In Sweden, the National Board of Health and Welfare (NBHW) is responsible for maintaining and updating KVÅ. Today KVÅ is used for reporting performed procedures to the national patient register regarding performed interventions for inpatients and visits to physicians in open specialised care. KVÅ is also used in electronic health care (EHR), which support sharing information between different caregivers, local follow-up, management and reporting to quality registers.

NBHW will look into the consequences of changing from KVÅ to ICHI before decision. A pilot study was performed during 2017-2018.

The aim of the pilot study was to map a number of surgical and functioning interventions to ICHI. Other aims were to test the mapping rules and to provide a basis for planning further work to support a transition from KVÅ to ICHI.

Methods & Materials

The 50 most frequent procedures for inpatients in general, 50 surgical orthopaedic interventions and 50 functioning interventions (both diagnostic and therapeutic) were mapped to ICHI 2018 by using the three axes, stem codes and extension codes.

The degree of equivalence between the source and target interventions was evaluated. In this mapping test we also have added a column to describe the cardinality of the mapping results. If you have a one to one relationship the cardinality is 1:1. If four target interventions (ICHI) are used to describe the source intervention, the cardinality is 1:4 etc.

Results

A total of, 150 interventions were mapped. We here shoe the results for 50 orthopaedic surgical interventions and 50 functioning interventions.

For the 50 orthopaedic surgical **interventions** 48% were narrower than the ICHI interventions, 16% were equivalent and 34% were broader (one intervention was not possible to map). The cardinality varied between 1:1 and 1:3 when mapped to ICHI 2018 (Figure 1).
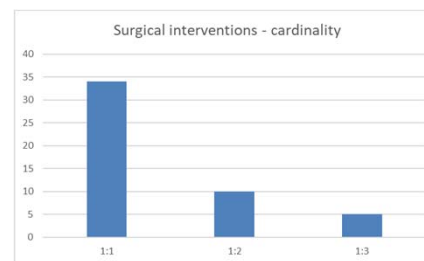

Figure1: Number of surgical source interventions for each cardinality

The results show that the surgical interventions (source interventions) can be mapped to the ICHI (target interventions) stem codes. Often one or more extension codes were used. There are some gaps in the ICHI 2018 stem codes and extension codes. Missing information in the extension codes include: secondary prosthesis; with or without cement/ secrete; total, half or partly prosthesis.

For the 50 **functioning interventions** 88% were broader than the ICHI stem codes, 10% equivalent and 2% narrow. The cardinality varied between 1:1 and 1:6 when mapped to ICHI 2018. There are some gaps in the ICHI stem codes. The diagnostic interventions have higher cardinality than the therapeutic interventions (Figure 2).
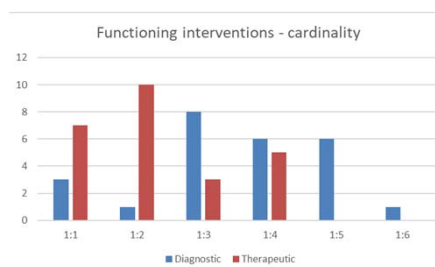

Figure 2: Number of functioning source interventions for each cardinality

The results for the functioning interventions show that 1) the ICHI stem codes are more detailed than KVÅ interventions and 2) most of the K interventions are packages of interventions. Only a few extension codes were used.

Mapping process
Our experience from mapping interventions in a section of KVÅ to each axes, stem codes and extension codes in ICHI are following:
- increase the understanding of the structure
- increase the mapping capacity
- decrease the time used for mapping compared to mapping the 50 most frequently used interventions
- improve the understanding of the relationship between the source and target interventions by describing the degree of equivalence to each axis.

Conclusions

There are differences in the mapping results for surgical and functioning interventions. The surgical interventions in KVÅ could mostly be mapped to one ICHI stem code by using one or more extension codes. Some ICHI stem codes and extension codes are missing. The functioning interventions in KVÅ are broader than the ICHI interventions and only a few extension codes were used.

Our experiences are that mapping to each axis and to map sections by sections in the source classification improve the quality. Using cardinality and the degree of equivalence are important information. When mapping a classification to ICHI the rules and guidelines for mapping have to be further developed to improve the consistency in the mapping.

This pilot study contributes to describe the consequences of changing from KVÅ to ICHI. If ICHI were to be used in Sweden, it would improve the quality of describing and specifying the interventions.

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KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Mapping Swedish mental health interventions to ICHI – occupational therapy perspective

22-27 October 2018
Seoul, Republic of Korea

ID: 604

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Abstract The classification of health care interventions (KVÅ) is used in Sweden. The aim of this study was to map KVÅ interventions used by occupational therapists (OT) in mental health care to ICHI. 136 KVÅ interventions were mapped to 254 ICHI interventions. The study shows that 67% of the KVÅ interventions were broader than the ICHI interventions and 53% have higher cardinality than 1:1. A lot of the KVÅ interventions are package of ICHI interventions. If ICHI were to be used in Sweden, it would improve the quality of the description of mental health interventions performed by OT.

Introduction

The National Board of Health and Welfare (NBHW) is responsible for updating and maintaining the Swedish classification of health care interventions (KVÅ). The interventions are also a part of NCSP+ (Nomesco Classification of Surgical Procedures database). KVÅ is professionally neutral and consists of about 6000 surgical interventions and 3600 non-surgical interventions. Two chapters have been developed together with nurses, occupational therapists and physiotherapists. The interventions in these two chapters are based on two axes. The first axis uses ICF as Target and the second axis consists of Actions, but not as detailed as in ICHI.

KVÅ is used in electronic health record (EHR), which supports sharing information between different care-givers, local follow-up, management and reporting to quality registers. Today, KVÅ also is used for reporting performed interventions in selected health care settings to the national patient register (NPR). There is a proposal to expand the collection of data to the NPR by including interventions performed by additional health care professions in mental health.

The aim of the study was to map a number of KVÅ interventions used by occupational therapists within mental health to ICHI.

Methods & Materials

A list of 136 interventions used by occupational therapists in mental health were collected from six hospitals.

The interventions used in mental health care (source interventions) were mapped to ICHI (target interventions) by using the mapping rules for ICHI.

In this mapping test we also described the cardinality between the source and target intervention(s) together with valuing the degree of equivalence. The cardinality is 1:1 if the result is one to one intervention. If the source intervention is described by using four target interventions (ICHI) the cardinality is 1:4.

Results

A total of 136 source interventions (27 investigative, 98 therapeutic, 11 managing) were mapped to ICHI 2018.
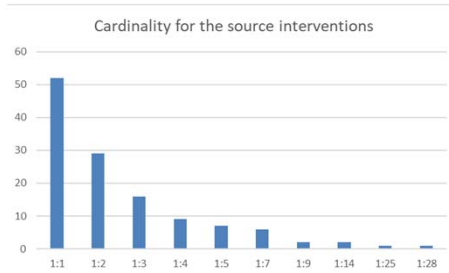

Figure1: Number of source interventions per cardinality

About 9% were not possible to map to ICHI 2018 (1:0), but will be if the gaps in ICHI are improved. 14% of the interventions were equivalent, 18% were narrow, and 67% were broader.

The cardinality for source and target interventions varied between 1:1 and 1:28. About 38% of the source interventions have the cardinality 1:1. About 33% have the cardinality 1:2 – 1:3 and 17% 1:4 – 1:9. Four interventions have higher cardinality than 1:9.

Examples of equivalent interventions are '*Training in using transportation*', '*Training in toileting*'. Examples of two broad source interventions are '*Evaluation of living conditions*' (1:25) '*Evaluation of body functions*' (1:28).

The Means ZZ was mostly used for functioning interventions and OD Interview was used for some interventions.

Three extension codes: S*tandardized* (XB04.0); *Group* (XB07.4) and *Close interpersonal* (XGA2), were used to describe additional information.

A total of 254 ICHI stem codes were used. There are some missing interventions such as Test interventions targeting A & P and health-related behaviours.

The mapping results show that Assessment and Test interventions are most frequently used in investigation and follow-up. For therapeutic purpose, Training, Advising and Emotional support interventions are mostly used (Table 1).

Results

	Action – intervention	number
AA	Assessment	54
AC	Test	22
AM	Observation	13
PG	Assisting and leading exercise	10
PH	Training	49
PM	Education	15
PN	Advising	22
PP	Counselling	9
PQ	Psychotherapy	1
RA	Task performed by another	1
RB	Practical support	19
RC	Emotional support	22
SM	Management of assistive product	1
TB	Planning	1
TD	Collaborating	1
TI	Prescription	7
TM	Environment modification	7
	Totally	254

Table 1: Number of ICHI interventions per Actions in ICHI 2018

Conclusions

ICHI include more specific interventions than the mental health interventions in the national classification KVÅ from an occupational therapy perspective. A lot of the existing interventions in the national classification are packages of ICHI interventions. Some ICHI stem codes are missing.

Our experience is that the cardinality and the degree of equivalence are important factors to understand the relationship between the mapped interventions. The rules and guidelines for mapping need further development to support consistency.

If ICHI were to be used in Sweden, it would improve the quality of describing and specifying the mental health interventions performed by occupational therapists.

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Pilot Mapping Korean EDI codes to SNOMED CT then to ICHI

22-27 October 2018
Seoul, Republic of Korea

ID: 605

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Abstract Health Insurance Review and Assessment Service(HIRA) has performed mapping Korean EDI medical procedure list used for National Health Insurance claims to SNOMED CT first and then to ICHI in a few specialty areas. Scope of the mapping can be expanded to other specialties based on the findings. The objectives of this study are to explore the applicability of ICHI to domestic classification and to gradually improve global interoperability of Korean National Health Insurance claims data.

Introduction

Korea achieved universal health coverage in 1989. National Health Insurance is managed in a form of social insurance, and all the healthcare providers in Korea are required to enroll to get reimbursed. The reimbursement process starts with the healthcare providers filing claims for medical fees to HIRA. As of August 2017, there are 9,252 items of EDI (Electronic Data Interchange) medical service code used in claims for reimbursement. As use of Health IT increases, opportunities to share and exchange health information have been increased. The objective of the study is to explore applicability of ICHI and identify strategies to improve global interoperability of Korean National Health Insurance claims data by mapping Korean EDI codes to SNOMED CT, a healthcare terminology, and then ICHI, an international classification for medical procedures.

Methods & Materials

Source of mapping is 103 EDI procedure codes used to claim reimbursement in colorectal surgery and targets are SNOMED CT and ICHI. First, two of the authors searched a SNOMED CT concept which has a synonymy relationship with the EDI code within the 'Procedure' top-level hierarchy using SNOMED CT International's web-based browser. Maps with SNOMED CT was reviewed with the third author, a domain expert. Second, the authors who mapped EDI code to SNOMED CT also searched ICHI code which has a synonymy relationship with the EDI procedure code using ICHI Beta 2018 browser. Maps between EDI codes and SNOMED CT were used for this process. Mapping results were reviewed with the third author again.
For SNOMED CT mapping, the guideline provided in the 'SNOMED CT Starter Guide' was used. For ICHI mapping, the 'Draft ICHI 2018 Guidelines for Users' was used. Mapping results were classified into 'exact', 'broad', 'narrow' or 'mixed' according to the level of correspondence between EDI codes and standard terminologies.

Results

Type and cardinality of mapping between the EDI codes and SNOMED CT is presented in **Table 1**. Most of EDI codes(73.8%) were mapped exactly to SNOMED CT concepts. Cardinality between the EDI code and SNOMED CT ranged from 1 to 17, 3.72 on the average.
Mapping result between the EDI codes and ICHI is presented in **Table 2**. Most of EDI codes(65%) were mapped broadly to ICHI codes with the 1:1 relationship. Comparison of the two maps of EDI codes with SNOMED CT and ICHI is presented in **Table 3**. Almost 79% of EDI codes mapped exactly to the SNOMED CT were classified as broad, narrow or mixed maps to the ICHI.

Table 1: Mapping EDI codes to SNOMED CT

Cardinality	0	1	2	3	4	5	6	7	8	9	≥10	Total EDI (N,(%))
Exact		20	8	19	6	8	2	3	1	1	8	76(73.8%)
Partial(Broad)		8	3	3	2	1	1				1	19(18.4%)
Partial(Narrow)												0(0.0%)
Partial(Mixed)			1	2	1							4(3.9%)
Not mapped	4											4(3.9%)
Total EDI (N)	4	28	12	24	9	9	3	3	1	1	9	103(100.0%)

Table 2: Mapping EDI to ICHI

Cardinality	0	1	2	3	Total EDI (N,(%))
Exact		13	5		18(17.5%)
Partial(Broad)		55	9	3	67(65.0%)
Partial(Narrow)				2	2(1.9%)
Partial(Mixed)		1	7	5	13(12.6%)
Not mapped	3				3(2.9%)
Total EDI (N)	3	69	21	10	103(100.0%

Table 3: Comparison of SNOMED CT and ICHI Maps

SNOMED CT \ ICHI	Exact	Partial (Broad)	Partial (Narrow)	Partial (Mixed)	Not Mapped	Total EDI (N)
Exact	16	48	2	9	1	76
Partial(Broad)	1	12		4	2	19
Partial(Narrow)						0
Partial(Mixed)	1	3				4
Not Mapped		4				4
Total EDI (N)	18	67	13	2	3	103

Chart 1: Mapping example

Korean EDI procedure code
Q2679: Colectomy With Proximal Colostomy And Distal Stump [Hartmann operation]

SNOMED CT (Exact / 1:1)
SCTID: 16564004
Hartmann operation, rectal resection (procedure)

ICHI (Broad / 1:2)
KBP.JJ.AA: Partial excision of colon
/KBP.LI.AA: Colostomy

Discussions

More than 65% of EDI codes was mapped to ICHI codes with broader scope because there is no corresponding code (e.g., 'Enterostomy - Double barrel' to 'Other enterostomy, not elsewhere classified'). Fewer number of ICHI codes were used to map 103 EDI codes. For example, 12 different EDI codes were mapped to the ICHI code 'Resection of rectum' . Thus, ICHI is not functioning beyond a statistical classification. We would like to suggest adding detailed procedures such as EDI codes as inclusion terms to the existing ICHI codes to improve consistency in the future mapping. SNOMED CT concepts can be used as preferred terms to represent these detailed procedures.
Mapping a complex surgery such as Hartmann operation, the surgical resection of the rectosigmoid colon with formation of an end colostomy and closure of the anorectal stump, to ICHI code was very challenging. We mapped the Hartmann operation to 'Partial excision of colon' and 'Colostomy' and classified as a broad map (**Chart 1**).

We would like to suggest adding a well known complex surgery such as Hartman as a new ICHI code or adding it as one of inclusion terms to an existing ICHI code.
For EDI code for surgical procedures performed together, we selected multiple stem codes and combined them as a cluster coding (e.g., Segmental resection of colon with regional excision of lymph nodes). This mapping can be reduced to 1:1 map by adding 'Action JL, extended excision' to the target, colon.

Conclusions

In this study we mapped Korean EDI medical procedure list used for National Health Insurance claims in the colorectal surgery to SNOMED CT and then to ICHI. It was found that ICHI - currently available as a beta version - needs further refinement in terms of extending its content coverage for use in casemix financing system or statistical classification in Korea.
We also explored ways to improve global interoperability of EDI codes in this study. Particular attention should be given to clarify the use of extension codes in maps.

CROSS MAPPING ICHI TO HOSPITAL AND PHC CODES IN SOUTH AFRICA

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

22-27 October 2018
Seoul, Republic of Korea

ID: 606

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Abstract Two studies were carried out in South Africa to improve understanding of ICHI in relation to a currently used coding system. The studies indicate that ICHI may be preferable for use in South Africa. Further research is required. Such research would ideally be conducted as part of a formal WHO test program.

Introduction

There is currently no regulated clinical intervention coding system in South Africa. Coding systems used are mainly tariff driven, ie used for billing purposes and include the National Health Reference Price List (NHRPL) and the Complete CPT® for South Africa (CCSA) and the Uniform Patient Fee Schedule (UPFS) system. A nationally regulated intervention coding system is required to ensure transparent costing, billing and quality management activities. The system should ideally be an intervention coding system, internationally recognised and available to government regulatory authorities. It should furthermore be useful in developing DRGs for management of cost, quality and access as well as billing for health services provided.

The studies sought to inform local thinking as to whether the International Classification of Health Interventions (ICHI) could be a candidate for a national Intervention clinical coding system. One of the challenges in introducing a new coding system is how well that system can replace legacy systems. To this end, the study compared a set of NHRPL codes to ICHI equivalents.

Methods & Materials

Methods and Materials

700 NHRPL Hospital Care codes and 300 Primary Care codes were cross-mapped to their ICHI equivalents.

The ICHI Beta 2018 Browser (https://mitel.dimi.uniud.it/ichi/) version was used to look up the relevant ICHI codes during the month of June 2018.

The NHRPL was last updated in 2009. This version is used in the studies.

The cross mapped codes were classified according to four categories in terms of the degree of match:

NHRPL Broader than ICHI
NHRPL Equivalent to ICHI
NHRPL Narrower than ICHI
No Cross Match

Results

Chart 1: NHRPL Codes compared to ICHI Stem Codes in Hospital and Primary Care

NHRPL CODES mapped and compared to ICHI Stem LEVEL CODES		
	Hospital Care	**Primary Care**
Broader	13%	10%
Equivalent	11%	10%
Narrower	70%	41%
No Cross Map	7%	39%

Figure 1: NHRPL Code compared to ICHI Stem Level Code : Hospital Care

No Cross Map 7%
Broader 12%
Equivalent 11%
Narrower 70%
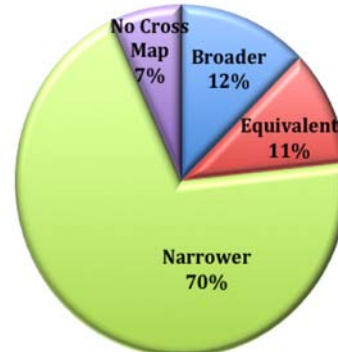
Figure 2: NHRPL Code compared to ICHI Stem Level Code : Primary Care

Broader 10%
Equivalent 10%
No Cross Map 39%
Narrower 41%
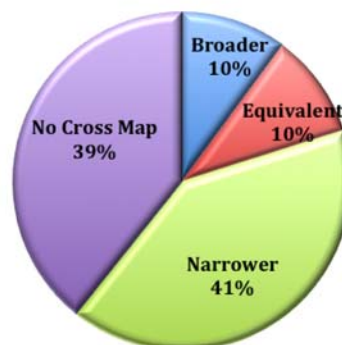
Conclusions

NHRPL Narrower than ICHI
70% of the **Hospital Care** NHRPL codes were narrower than the ICHI codes. This is however not due to higher granularity in intervention description. It results, inter alia, from the inclusion of billing modifiers and diagnostic information.
In **Primary Care**, the Narrower NHRPL codes account for 41% of the total codes studied. This reflects similarly the mixed nature of the NHRPL data.
Where the NHRPL codes are Narrower due to intervention description only, the ICHI codes can be refined using Extension codes.

NHRPL Broader than ICHI
In these cases the ICHI codes would provide more granular data than the NHRPL codes.

Primary Care Codes
NHRPL Primary Care codes could not be cross mapped to ICHI in 39% of cases (as compared to 7% for Hospital Care). A number of these are due to NHRPL's inclusion of Dental and Pathology codes.

Intervention Coding in South Africa
Whilst NHRPL is used as a 'quasi-intervention' coding system it does not (and was not designed to) provide for the level of pure intervention data which is required to manage costs, quality and access to healthcare as well as to create the necessary database for analyses and planning of healthcare services including the development of a DRG-Casemix system.
ICHI appears to address the current gaps in our intervention data collection. Further research should be conducted on the use of ICHI in South Africa. This would ideally be carried out within a WHO ICHI test program.

Acknowledgements

KOREA
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NETWORK ANNUAL MEETING
2018

Comparison of CCAM-CSARR codes used in France with ICHI codes

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ID: 607

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Abstract   The two French nomenclatures CCAM and CSARR codes and the ICHI codes have been built on the same model. A comparison between CCAM-CSARR codes and ICHI codes has been done to evaluate the possibility of transcoding from CCAM-CSARR to ICHI.

Introduction

France uses two nomenclatures to describe the technical acts of health professionals. On one hand CCAM (Classification commune des actes médicaux), on the other hand CSARR (Catalogue spécifique des actes de rééducation et réadaptation). CCAM was developed in the early 2000's and CSARR was developed ten years later on the same model. Each wording is described according to 3 axis: "Topography or Function", "Action" and "Approach or Technical modality". These 3 axis appear in the semi-significant codes assigned to each wording.

These major principles were taken over during the construction of the International Classification of Health Interventions (ICHI), and like the French nomenclatures 3 axis of description: "Target", "Action" and "Means" appear in the code of ICHI wordings.

We have studied the feasibility of transcoding CCAM-CSARR towards ICHI by comparing the codification of each axis: "Topography or Function" vs "Target", "Action" vs "Action" and "Approach or Technical modality" vs "Means".

Methods & Materials

We have used the "dictionaries" which explain the meaning of each code of the three nomenclatures. For ICHI, we have made screen copies in December 2017 and January 2018.

For the axis Target, the 177 detailed codes of two letters in CCAM - CSARR were compared to the 650 detailed codes of three letters in the ICHI Target section.

For the axis Action, the 354 detailed codes of one letter in CCAM - CSARR were compared to the 116 codes in the ICHI Action section.

For the axis Means, the 15 main codes of one letter in CCAM - CSARR were compared to the 49 codes in the ICHI Means section.

	CCAM-CSARR Main code	CCAM-CSARR Detailed code	ICHI Main code	ICHI Detailed code
Target	16	179	134	650
Action	18 codes = 42 actions	354	116	
Means	15	120	49	

Table 1: Repartition of the CCAM-CSARR codes and the ICHI codes for the different axis

If necessary when a CCAM - CSARR code matchs with several ICHI codes, we have added key words to distinguish the CCAM- CSARR code and improve the detail level of the CCAM - CSARR code.

This is particularly true for the axis Action where few letters are used to build the codes and the comparison is only based on the actions words of CCAM - CSARR completed by other key words.

At this stage, we haven't studied the ICHI's section Extension codes.

In the end, matching was evaluated using the scoring scale developed by the Nordic Center for Classification in Health Care.

Score	Description
0	not possible to map
1	one-to-one concept. The concept are identical
2	the source concept is less specific
3	the source concept is more specific
4	the source concept and target concept partially overlap

Table 2: Scale of the Nordic Center for Classification in Health Care

Only one observer has linked the French's codes and the ICHI's codes and has evaluated the quality of the matching with the Scale of the Nordic center for Classification in health Care.

Results

Comparison of the Target codes
177 CCAM-CSARR Target codes have, at least, one connection with one of 233 ICHI Target codes; 2 of two letters and 231 of three letters.
131 CCAM-CSARR Target codes have a link with only one ICHI Target code.
If we add keywords to the Target code letters, we obtain 234 CCAM-CSARR combinations.

	Number CCAM-CSARR codes	0	1	2	3	4
Total Target codes without key words	177	6	121	42	2	6
		3 %	68%	24%	1%	3%
Total Target codes with key words	234	6	195	18	9	6
		3%	83%	8%	4%	3%

Comparison of the Action codes
354 CCAM-CSARR Action words, using only 18 letters are equivalent to 79 ICHI Action codes.
332 CCAM-CSARR Action words have a link with only one ICHI Action code.
If we add additional keywords to the action term, we get 389 CCAM-CSARR combinations.

	Number CCAM-CSARR codes	0	1	2	3	4
Total Action codes without key words	354	4	49	16	241	44
		1%	14%	5%	68%	12%
Total Action codes with key words	389	4	62	11	278	34
		1%	16%	3%	71%	9%

Table 4: Action axis: matching quality CCAM-CSARR to ICHI

Comparison of the Means codes
15 CCAM-CSARR Means codes are equivalent with 25 ICHI Means codes.
8 CCAM-CSARR Means codes have a link with only one ICHI Means code.
If we add keywords to the Means code letters, we obtain 27 CCAM and CSARR combinations.

	Number CCAM-CSARR codes	0	1	2	3	4
Total Means codes without key words	15	-	7	2	1	5
			47%	13%	7%	33%
Total Means codes with key words	27	-	9	2	1	15
			33%	7%	4%	56%

Table 5: Means axis: matching quality CCAM-CSARR to ICHI

Conclusions

This analysis leads us to the conclusion that transcoding CCAM-CSARR to ICHI is possible. To improve this first analysis we need to ask more people to do this exercise in order to get a stronger and reproducible transcoding. We also need to exchanges views with ICHI's team. We have yet to study the place the Extensions codes could have. We hope this transcoding would be a first step, which will help us to automatize the complete transcoding between CCAM-CSARR and ICHI. In the best case it would help us to contribute to the translation of ICHI from English to French.

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ALGORITHMIC MAPPING FROM ACHI to ICHI

22-27 October 2018
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ID: 608

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Abstract Mapping of International Classification of Health Interventions (ICHI) to and from other classification system is in its infancy compared to other classifications such as ICD-10. Mappings are carried out between clinical classification systems to support the use of data coded with one classification system for another purpose. This work explores the use of an algorithmic approach to mapping Australian Classification of Health Intervention (ACHI) to ICHI. The approach combines rule-based, manual mapping and machine learning aided with natural language processing techniques to test the viability of code description based mapping from ACHI to ICHI.

Introduction

ACHI to ICHI mapping is a difficult process because of the code description sentence structure disparity between the two. There are some hierarchical relationship between the two classifications – ACHI anatomical site and procedure to map a specific ICHI's *Target* and *Action* correspondingly. However, ICHI has *Means* which may or may not occur in ACHI. Combining these two factors – sentence and hierarchical structure disparity, a new method is explored to discover if better mapping results can be achieved.

Certain patterns in ACHI such as procedure and parents hierarchy can be used to hint which ICHI it maps to. This is an excellent situation to apply natural language processing (NLP) to identify which words are anatomy or procedure. Recognising meaning of the word phrases in the description is essential towards applying supervised machine learning (ML) algorithm to predict the mappings. Furthermore, a successful identifying of specific anatomy part from ACHI code description will determine the accuracy of finding which part of the body, or ICHI *Target* it belongs to.

At this stage of writing, we are in the process of implementing a machine learning algorithm.

Material

There are 6474 ACHI codes that include code, description and parents hierarchy.

6141 ICHI codes are obtained from 2018 Beta version that includes code, descriptions, inclusion and exclusion terms. Each axes – *Target*, *Action* and *Means* definition are used to help with ICHI code mappings.
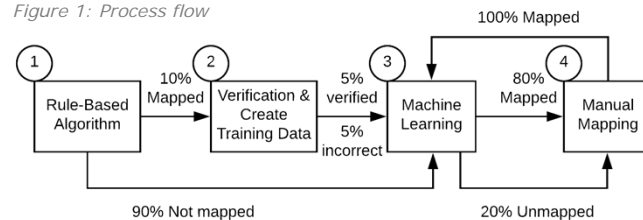
Reference

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U.S. National Library of Medicine (2018) *Medical Subject Headings* Retrieved from https://www.nlm.nih.gov/mesh/

Acknowledgements

Figure 1: Process flow

Adapted from Artificial Intelligence: A Modern Approach, Third Edition, by S. J. Russell, P. Norvig (2010)

Methods

We start small by taking the first chapter of ACHI that contains 315 codes. First, each ACHI code description is entered into an NLP pipeline that separates each one by its noun chunks. This is done because an anatomy is often a noun. Then each noun chunk is used to search for its hierarchy from ICHI *Target* and Medical Subject Headings (MeSH). If this particular noun is an anatomical site, the output will be used to parse which body part – or ICHI *Target* it belongs to. Through a series these rule-based algorithms, it produces a list of possible ICHI mappings for each ACHI code.

Using this focused list, we manually map which ones are verified correct and incorrect. Both type of data then becomes our training data for ML algorithm.

Figure 2: Example of step 2 verification and training data creation

Note: Retrieved from ACHI-ICHI Mappings by H. Shafruddin

Features were selected to train the ML model. In this case, ACHI procedure terms. We propose to use the model to predict the occurrence of this ACHI procedure word maps to which ICHI *Action*. As for ACHI anatomical site to ICHI *Target*, extracting anatomy terms cannot work since many of the terms occur very infrequently. Instead, ACHI's parent hierarchy is used to train the ML model to predict where it maps to ICHI *Target*. K-nearest neighbors algorithm is proposed to identify the groupings because it is not always the case that one ACHI anatomical site maps to one ICHI *Target*. Using this model, all ACHI codes will be used as input to predict which ICHI code(s) it belongs to.

The output of this prediction is compiled into a user interface where coders can verify and/or manually map incorrect or missing mappings. These new information can then be used to update this ML model to improve its accuracy. This last process can be repeated as many times as necessary to increase the number of training data which in turn will improve the ML model.

Results

Out of 315 ACHI codes in the first chapter, the rule-based algorithm found 199 codes with small list of possible ICHI code mappings. Of these, 141 ACHI codes were found to have correct mappings from that list. As for ML step, we estimate its first run to be poor because of limited training data.

Conclusion

This method has the potential to find mappings that not only maps to one chapter, but also map to a different chapter due to the nature of ML model prediction. In addition, anatomical site mapping can be improved if NLP model can predict which nouns are anatomical terms.

KOREA WHO–FIC NETWORK ANNUAL MEETING 2018

Using ICHI beta 2018 to code TM interventions

22-27 October 2018
Seoul, Republic of Korea

ID: 609

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Abstract   Five TM doctors tried to code 10 TM interventions using ICHI. Focus group interviews on the ICHI experience performed immediately after the field trial. All TM doctors were able to easily assign ICHI codes with using the ICHI platform. However, ICHI targets were more comprehensive than those of TM interventions, and those gaps could be adjusted with the joint use of ICF. Means of all assigned TM interventions was classified as 'ZZ: Unspecified', and it need to be developed more means fits to TM interventions in ICHI. ICHI beta 2018 were not sufficient to code TM interventions but the structure of ICHI is very useful for explaining TM interventions logically. To improve ICHI in the field of TM, TM doctors need to continuously and actively participate in a possible future development of an ICHI TM module.

Introduction

South Korea, one of the major countries that has instituted traditional medicine (called Korean Medicine) has 25,000 TM doctors (called Doctor of Korean Medicine).

In the current ICHI beta 2018 version, the number of TM related categories is known to be very small and less standardized when compared to other parts. There are only about 30 TM interventions in ICHI, which show a difference in level of development compared to over 240 codes of health insurance fee schedule in South Korea.

To improve the comprehensiveness of ICHI in all area of health, it is essential to improve the level of TM intervention development.

In this study, we applied ICHI to TM interventions and examine the level of development that matches the characteristics of traditional medicine by identifying gaps with the clinical field of TM.

This trial of the ICHI beta 2018 version will be a valuable experience for TM and, It will provide many implications for future application of ICHI to TM fields.

Methods & Materials

5 TM doctors were recruited as participants in the test and they were given a list of 10 TM intervention for coding trial.

We found it is desirable to use the ICF in conjunction with ICHI in determining the correct answer. Therefore, we decided to joint use of ICHI and ICF in this test. As it is difficult to check the mapped ICF with a hyperlink, we used KCF, which is a translated version of ICF in Korean and published by the Statistics Korea.

4 out of 5 TM doctors had no insight about ICHI and it was the first using of ICHI and KCF for all of them.

After an 2-hour lesson, 5 TM doctors tried to code 10 given TM cases with ICHI beta 2018 and KCF.

For each code, all participants performed an evaluation based on four elements with 5 points scale.

Participants shared their first experiences about ICHI and expectation on it via focus group interview which had performed right after completion of the test.
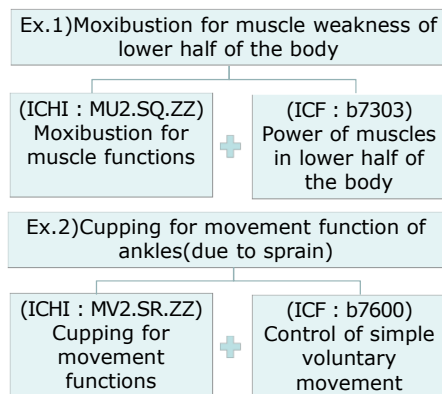
Results

Out of the four elements evaluated, the granularity and clarity of definition were rated below medium, the mutual exclusiveness was rated to be around three points, and the easiness was highest.

figure 1: Participant's evaluation on ICHI and ICF

	Target	Action	Means	ICF
GRANULARITY	1.9	2.3	1.7	2.2
EASENESS	3.4	3.6	3.9	3.1
MUTUAL EXCLUSIVENESS	3.2	3.0	3.3	3.1
CLARITY OF DEFINITION	2.2	2.4	2.5	2.3

Joint use of ICHI and ICF has improved the granularity of ICHI but did not guarantee satisfactory levels of it. Using ICF code b7303 allows represent more specific body parts and function which was ignored within ICHI *(Fig 2, ex1)*. Using ICF code b7600 allows represent more specific function but it seems to need using more extension code for ankle *(Fig 2, ex1)*.

Figure 2. Joint use of ICHI and ICF

Ex.1)Moxibustion for muscle weakness of lower half of the body

(ICHI : MU2.SQ.ZZ) Moxibustion for muscle functions	+	(ICF : b7303) Power of muscles in lower half of the body

Ex.2)Cupping for movement function of ankles(due to sprain)

(ICHI : MV2.SR.ZZ) Cupping for movement functions	+	(ICF : b7600) Control of simple voluntary movement

Means of all assigned interventions was classified as 'ZZ: Unspecified', and participants rated the granularity of action very low. It can be improved by breaking down means instead of action as follows.

Table 1: Means of Acupuncture action

Means	Concept	Code
Body(Manual)	applying common needle(A)	-
Acupotomy	applying knife needle	-
Electric field	A with electric stimulation	BP
Microsystem	A on a specific body part (scalp, face, ear, palm, foot)	-

Figure 2: Microsystem acupuncture(Hand)

The point of acupuncture is often not a target. Especially 'Microsystem acupuncture' uses one body part as opposed to a general acupuncture treatment, but targets other specific organs or functions.

Further TM content need to be specified within ICHI content as follows(Table 2 & 3)

Table 2: Means of Cupping action

Means	Concept	Code
Dry	Creating a small area of low air pressure next to the skin	-
Wet	Scarifying the skin before cup Application	-
Fire	Creating a small amount of suction by fire heating the inside of the cup	-

Table 3: Means of Moxibustion action

Means	Concept	Code
Direct	Placed on directly in contact with the skin	-
Indirect	Placed on any materials not to directly in contact with the skin	-
Device	A kind of moxibustion using medical devices	-

Conclusions

TM Group is well aware of the development objectives of ICHI and believes that although the current level of development is not detailed, it will eventually be used for medical insurance reimbursement.

It has been developed within ICHI that even in small parts; the possibility of use will increase through an addition of missing interventions and refinement.

There is a need to investigate TM practices performed in the clinical field and reflect them in ICHI. In particular, more TM related "means categories" need to be created separately from the development of medical and surgical interventions. Further discussion is needed as to whether this information will be contained within ICHI. TM doctors need to actively participate in a possible future development of an ICHI TM module.

Acknowledgements or Notes

A path forward for the further development and use of ICHI in the field of public health

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ID 610

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Abstract The classification of public health interventions within the International Classification of Health Interventions (ICHI) is a pioneering development. There have been no previous efforts to produce a standard classification of public health interventions. This poster reports on results of ICHI alpha testing, and proposals for further development to improve the utility of the classification.

Introduction

The classification of public health interventions in ICHI is well-positioned to fill an existing gap: there is currently no common framework or classificatory structure for public health interventions that can provide a basis for collecting data on public health outputs. The aim of this research was to conduct a comprehensive developmental appraisal of the draft classification of public health interventions in ICHI, to gain an understanding of its strengths and limitations and to identify problems and issues that should be addressed to improve its utility.

Methods & Materials

ICHI was used to code interventions described in three existing data sets of public health interventions in order to identify problems encountered during the coding process, and to assess inter-coder reliability. Views of potential classification users were elicited through semi-structured interviews with key-informants familiar with the three data sets. An analytical structure was developed, comprising (i) a set of criteria relating to the desired features of a statistical classification, and (ii) a 4-tier model representing the main elements that make up a statistical classification.

Results

The research findings indicated that: ICHI's tri-axial structure is clear and workable for aggregating data on public health interventions; Target and Action are relevant information dimensions for describing and distinguishing between interventions; category titles are generally clear and categories are defined; and the level of detail was appropriate to the source data used in the study. These strengths suggest that ICHI has potential utility for capturing data on public health interventions. Problems identified included: lack of clarity and consistency concerning how Target, Action and Means are operationalised for public health interventions; difficulty breaking down complex interventions into their constituent components for coding; some gaps in the Action axis; and instances of more than one applicable code per unit of classification.

The 4-tier model (Figure 1) was used to locate the issues identified and consider how they might be addressed. Proposals for further development of ICHI have been made at each tier of the model.
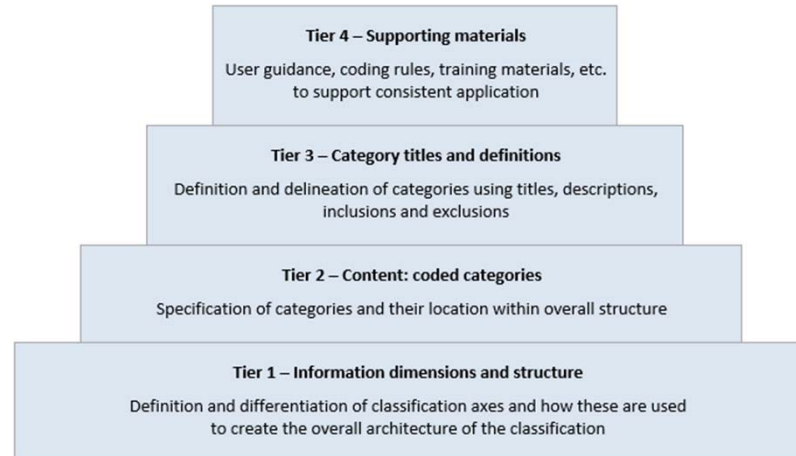

Tier 4 – Supporting materials
User guidance, coding rules, training materials, etc. to support consistent application

Tier 3 – Category titles and definitions
Definition and delineation of categories using titles, descriptions, inclusions and exclusions

Tier 2 – Content: coded categories
Specification of categories and their location within overall structure

Tier 1 – Information dimensions and structure
Definition and differentiation of classification axes and how these are used to create the overall architecture of the classification

Figure 1: *4-tier model representing key elements of a statistical classification*

Examples of proposals made based on research findings:

Tier 1: Editorial principles should be articulated concerning how 'Target', 'Action' and 'Means' are operationalised for public health interventions; this will guide changes to axis categories and intervention codes. As public health interventions are often designed to operate via indirect change pathways (e.g., changing a proximate environmental factor Target in order to affect an ultimate health-related behaviour Target), an editorial principle is needed stating that the ultimate Target is the subject of the ICHI intervention code; this will support a consistent approach to the representation of public health interventions in ICHI.

Tier 2: A large number of proposals relate to the addition of new axis categories and intervention codes to fill specific gaps identified.

Tier 3: Modified definitions and expanded use of inclusion and exclusion terms are suggested for some axis categories to achieve mutual exclusivity. Wording of some intervention code titles should be modified to accommodate interventions with indirect change pathways (i.e., where there is not a direct relationship between Action and Target).

Tier 4: User guidance focused on the use of ICHI for coding public health interventions should provide a cultural orientation for potential users not familiar with statistical classifications, building a bridge between ICHI and contemporary public health thinking and practice. It should explain how ICHI's structure, underlying concepts and organisational principles are operationalised for public health interventions, and provide coding guidance illustrated with diverse public health examples.

Conclusion

It is proposed that ICHI should be presented to potential public health users in a way that is minimally prescriptive and encourages its use in flexible ways to meet a broad range of information needs. This could include offering use of the ICHI axes independently. Users should be encouraged to record metadata on any application-specific rules developed (e.g., how separate intervention components are identified in the context of a particular data collection). The ongoing development of ICHI should be informed by user experience, and overseen by a group involving participants who, collectively, have both classification and public health expertise. Testing of the current beta version to meet diverse public health information needs in a range of countries will be important for informing further improvement of the classification.

Source: Fortune 2018. *Strengths and limitations of the draft classification of public health interventions within the International Classification of Health Interventions: a developmental appraisal*. PhD thesis, University of Sydney.

Using ICHI to capture data on interventions relevant to people with disabilities

KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

22-27 October 2018
Seoul, Republic of Korea

ID: 611

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Abstract The International Classification of Health Interventions (ICHI), now in the beta phase of development, will provide a standard basis for collecting, aggregating, analysing, and comparing data on health interventions across all sectors of the health system. It will also provide a common language for describing and communicating about interventions, for use by practitioners, researchers and policy makers. In this poster, we discuss the potential value of ICHI for capturing information on met and unmet need for health interventions relevant to people with disability, with a focus on interventions to support functioning and public health interventions. As stated in the *WHO Global Disability Action Plan 2014–2021*, 'disability is a global public health issue because people with disability, throughout the life course, face widespread barriers in accessing health and related services' (WHO 2015, p.1).

Introduction

Information on the extent to which health services are meeting the needs of different population groups is essential to inform health system planning and resourcing, and to address health inequities. People with disabilities experience poorer health and increased rates of health risks compared with the general population. Health interventions spanning primary, secondary and tertiary prevention, and curative and rehabilitative interventions, are of as much importance for people with disability as they are for the population more broadly, yet a range of environmental barriers prevent equitable access.
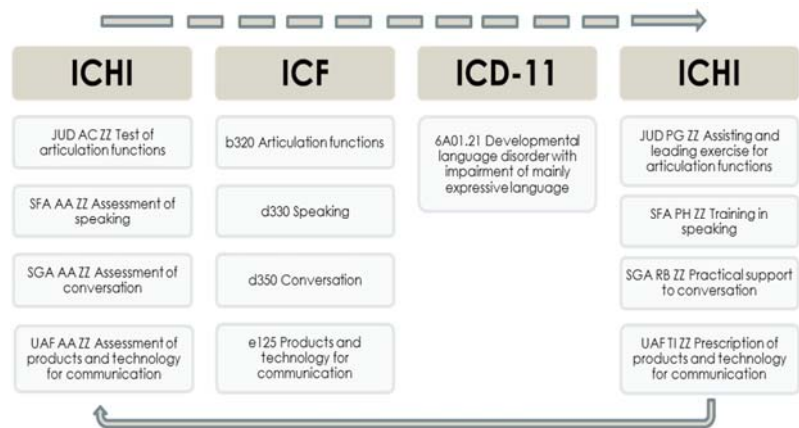

Figure 1: Using ICD, ICF and ICHI together — coding for interventions, level of functioning, functioning goals, and diagnosis, an example relevant to a person with communication-related functioning limitations. Source: Fortune et al. 2018

Interventions to support functioning

The use of ICF domains as intervention targets in ICHI means that these two classifications can readily be used together. ICHI can describe initial investigative interventions conducted (e.g., functioning assessments), and therapeutic and supportive interventions delivered; ICF can describe the person's functioning, functioning-related goals and need for assistance; ICD can be used to record information about health conditions. At follow-up, ICHI can again be used to record investigative interventions, and ICF to describe the person's functioning, which can be compared with their pervious functioning profile and functioning-related goals. Use of the three WHO-FIC classifications together in this way is illustrated in Figure 1, for a person with communication-related functioning limitations.

ICHI covers a range of interventions involving assistive products, for example:
• UAD.PH.ZZ 'Training in the use of products and technology for personal use in daily living'
• UAE.PJ.ZZ 'Deconditioning from products and technology for personal indoor and outdoor mobility and transportation'
• UAH.RD.ZZ 'Provision of products and technology for employment'

The 'Assistive products' extension code can be used to specify the type of assistive product/s involved (e.g., 'XP188.05 - Personal emergency alarm systems'). The list of assistive products in ICHI includes all assistive products in WHO's Priority Assistive Products List.

Public health interventions

At a population level, ICHI codes are available to describe public health interventions that target environmental factors (e.g., water quality) or health-related behaviours (e.g., tobacco use, physical activity). Such interventions have a particular role to play in addressing health inequities. However, depending on how they are targeted, public health interventions can fail to be effective for disadvantaged or marginalised groups, potentially increasing health inequalities. ICHI provides a basis for capturing information on the extent to which public health interventions reach and are effective for vulnerable groups, such as people with disability.

The extension code 'System level at which intervention directed' can be used to distinguish between an intervention aimed directly at the people whose health it is seeking to influence ('XGA1 – Individual'), and an intervention that aims to make changes at higher levels of the social-ecological system (e.g., 'XGA5 – Community'), which may be more effective in delivering health outcomes for disadvantaged segments of the population.

Conclusion

One of the three objectives of the *WHO Global Disability Action Plan* is 'to strengthen collection of relevant and internationally comparable data on disability and support research on disability and related services' (p.2). Together, the three WHO-FIC reference classifications – ICD, ICF and ICHI – will provide a comprehensive toolkit for capturing information about health conditions, functioning, and the interventions delivered to support and promote the health of individuals and populations. Testing of the ICHI beta version in a wide range of countries and contexts is now needed so that improvements can be made before it is finalised. Input from those with an interest in the health of people with disability is welcomed.

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KOREA WHO-FIC NETWORK ANNUAL MEETING 2018

Reform of the Belgian health nomenclature for a substantiated financing of medical activity: the contribution of ICHI

22-27 October 2018
Seoul, Republic of Korea

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ID: 612

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Abstract The methodology used to update the Belgian healthcare tariffs (NSS) is outdated and widely criticized. The political will is to reform the system on the basis of objective criteria. The methods used to calculate medical workload intensity and cost of operating expenses have been experimented over the past two years. Inaccuracies in the current NSS formulations have to be addressed beforehand. ICHI might be used as a structuring basis for a sharper redefinition of the NSS formulations.

Introduction

o In Belgium, the healthcare system uses fee-for-service pricing for the majority of medical procedures.

o The tariff list (nomenclature of medical treatment within the nomenclature of healthcare NSS) includes 3750 different procedures that are gathered in a separate section for each medical discipline.

o NSS was created 50 years ago. It has been adapted, but its core structure has never been fundamentally reconsidered. NSS is widely criticized for several reasons: lack of transparency of the criteria defining tariffs, inter- and intra-disciplinary inequalities and inaccuracies in the formulation of medical procedures, leading to questionable interpretations.

o The Belgian HealthCare Knowledge Center recommends use of scientific criteria to reduce income inequalities among medical specialists.

o Our research center participates in the reform of the Belgian hospital payment system which is under development. Based on objective criteria, our mission was to calculate the medical load and operating expenses for a selection of significant medical acts. This exploratory mission ended in January 2018.

o The inaccuracy of the medical procedures formulation in the actual NSS has complicated our work. We have been forced to clarify techniques or surgical approaches for several procedures

Objective

o Systematically extend the medical workload intensity calculation (RBVS MW) and cost of operating expenses (RBVS OE) to the whole NSS (to improve the funding of medical activity and reduce inter- and intra-disciplinary inequalities).

o This objective involves that a complete restructuring process of the NSS must be carried out beforehand.

o The methods developed to calculate RBVS MW and RBVS OE have been tested on more than 350 medical acts covering the most important disciplines. These approaches can always be improved. A regular adjustment is in any case necessary, as techniques are developing rapidly.

Methods & Materials

Chart 1: Framework of the study.
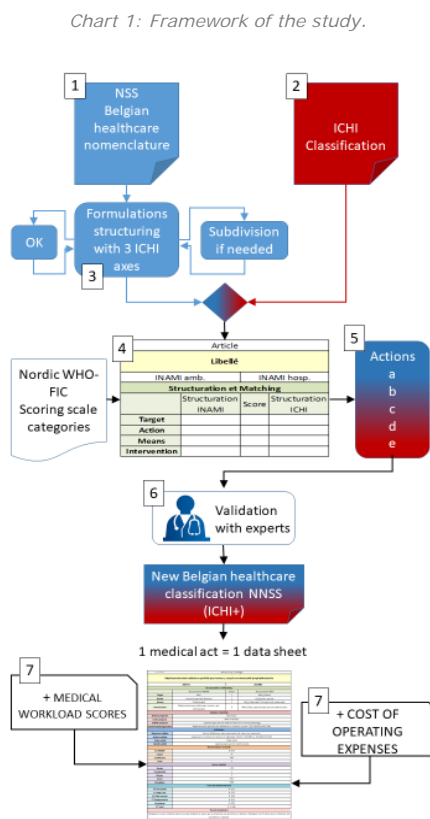
1. Nomenclature of healthcare (NSS) : inventory of medical acts in the NSS that are relevant to the urinary and male genital system, and to the circulatory system.

2. ICHI : inventory of similar medical acts in chapter 6 and 11.

3. Analysis of each act wording : the formulation of each selected medical act is divided into the 3 ICHI axes (action, means and target). The structuring involves using French terms that are not direct translations of the ICHI terms. When it is not possible to describe each axis with a unique ICHI term, the medical act is subdivided.

4. Pairing between the structured medical act in NSS and the corresponding medical act in ICHI. The results of the assessment of the matching are indicated in a chart, using a score scale developed by the Nordic Center of Classification in Healthcare.

5. Proposed measures depending on the various scenarios encountered during the scoring :

For each score (0-4), a specific action (a-e) is described and implemented.

Example : score 1 (perfect matching) : the NSS code and structured formulation is replaced by the ICHI one, except when the same ICHI code corresponds to 2 different NSS formulations. In that case and only if the workload calculation justified it, an extension is added to the ICHI code. When the pairing is completed, the ICHI formulations that do not have any equivalent are listed and their relevance is discussed (keep or exclude).

6. Validation of work by medical experts : on completion of the validation process, the NSS codes and structured formulations are replaced by the ICHI ones (if necessary, completed by extensions). A data sheet is then created for each medical act.

7. Each data sheet is completed with the medical workload intensity scores and costs of operating expenses corresponding to the new formulations.

This phase is the real aim of our study but is inevitably linked to a previous restructuring.

Results

Table 1: from actual to new NSS

Title	Actual NSS	ICHI	New NSS
Urinary & male genital system	167 items	322 items	192 items (data sheets)
Ciculatory system	219 items	380 items	263 items (data sheets)

Table 2: Old NSS to New NSS (ICHI+)

Actual NSS	New NSS (ICHI+)
Néphrectomie totale radicale ou partielle pour tumeur y compris une éventuelle lymphadénectomie	6 items: NAA JJ AA, NAA JJ AB, NAA JJ AB-R, N AA JL AA, NAA JL AB, NAA JL AB-R

Chart 2: example of a data sheet

Conclusion

ICHI in its current form could already be used as a basis for a pricing nomenclature.

ID	Title	Authors
701	Universal Health Coverage (UHC) and Health Information Systems (HIS) in Catalonia: Lessons Learnt in the last 4 Decades	Maria-Dolors Estrada, Jaume Canela-Soler, Xavier Pastor-Duran et.al.

WHO - FAMILY OF INTERNATIONAL CLASSIFICATIONS NETWORK ANNUAL MEETING 2018

Universal Health Coverage (UHC) and Health Information Systems (HIS) in Catalonia: Lessons Learnt in the last 4 Decades

22-27 October 2018
Seoul, Republic of Korea

Maria-Dolors Estrada[1], Jaume Canela-Soler[2], Xavier Pastor-Duran[2,3], Artur Conesa[3], Mireia Miquel[4], Mireia Espallargues[1], Toni Dedeu[1], on behalf of the CC-BCN (Spain)-AQuAS *.

ID: 701

Abstract Important changes have happened in the Catalan Health System (CHS) from 1978 to 2018. This work describes health tendencies in this period through the main health indicators going to the Universal Health Coverage (UHC) framework and goal. The evaluation of the health Information Systems (HIS) has been one of the most critical aspects in this sector.

Introduction

The United Nations General Assembly at its third session on 10 December 1948 adopted by as Resolution 217 the Universal **Declaration** of **Human Rights** (UDHR), in Paris, France (1). Articles 22–27 specified an individual's economic, social and cultural rights, including healthcare. Article 25 says, *"Everyone has the right to a standard living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services."* It also makes additional accommodations for security in case of physical debilitation or disability, and makes special mention of care given to those in motherhood or childhood.

In 1978, different facts happened in Catalonia, in Spain and Word related to health. Catalonia recovered the Autonomous Government with health competencies. Spain approved a new Constitution with a decentralization in some aspects as health. Finally, WHO and UNICEF approved the **Alma-Ata Declaration** promoting The Primary Health Strategy (2)

In 2018, we have some health experiences related with UHC and HIS to show in this work.

Methods & Materials

Descriptive methods were used in this poster about the UHC, HIS and CHS. Data available related to population covered by health services, visits to primary care, expectance of life at birth, per capita income and school population.

The public institutions that have this information are: IDESCAT (3), Generalitat de Catalunya, (4), AQuAS (5), OECD (8).

Affiliation (*)

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Main Results

1.- The population covered in Catalonia by public health services is 99,38% in 2017. (7,488.302 inhabitants are covered by health services over an official census of 7,534.813 inhabitants).

2.- The year 2016 the total of 46,010.604 healthcare encounters were done at Primary Care facilities, representing an average of 8 visits per person.

3.- Life expectancy at birth in Catalonia in 2015 was 83,15 versus in 75,15 years in 1978.

4.- GDP (PPP) per capita (Int $) in Catalonia in 2013 was 36,565, ranked in position 132st over 354 areas (Territorial level 2 or TL2 regions) of the OECD countries.

Comments

A.- 99,38% of the Catalonian population is covered by public health services. It is one of the highest rate around the World in terms of Universal Health Coverage.

B.- 8 visits per person on average in Catalonia represents a huge effort in terms of Primary Care after the Alma-Ata Declaration 40 years ago.

C.- The increase of 8 years life expectancy at birth in Catalonia is the result of different intersectorial strategies.

D.- Second quartile to Catalonia in the GDP (PPP) per capita (Int $) ranking over 354 areas territorial level 2 (TL2 regions) of the OECD members is a good example related to health sector.

E.- Adoption of innovative Digital Health is one of the strategic line in the current Health Plan 2016-2020 approved by the Catalan Health Department. This fact shows the institutional and professional compromise with Health Information Systems (HIS).

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