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WHO Family of International Classifications (FIC)

NEWSLETTER

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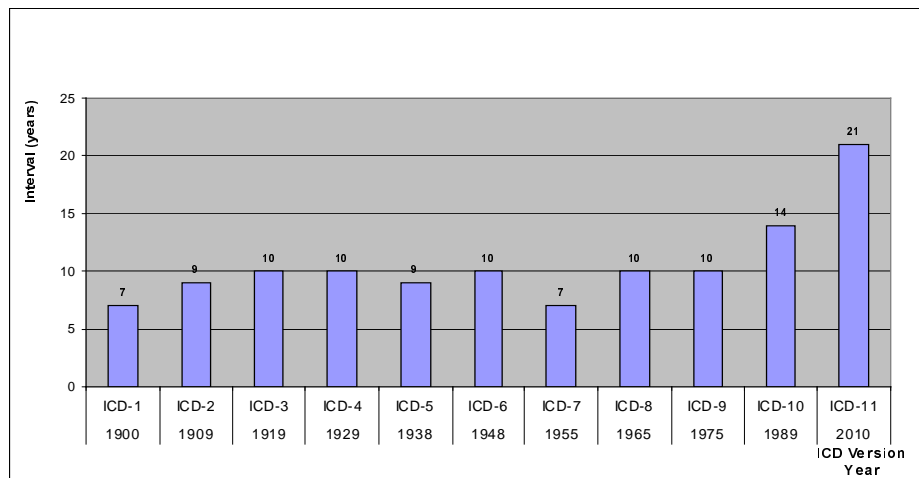
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Revision of International Classification of Diseases (ICD)

The ICD was approved by the International Conference for the Tenth Revision of the ICD in 1989 and adopted by the **43rd World Health Assembly in 1990**. In the same resolution the article (3) endorsed the need for the establishment of an updating process within the **ten-year revision cycle**. (The resolution can be found at hyperlink: [WHA ICD Resolution \(WHA 43.24\)](#)) The revision process which has almost always occurred within 10 year cycles beginning 1900, has nevertheless purposefully been deferred for a 20 year interval to be ready by 2010 or thereafter in order to enable a wider implementation of the ICD.



Given the preparations to issue an **ICD-11 by 2010** we need to compile the work starting now and therefore WHO has initiated a systematic effort for the ICD Revision process to respond to the **needs of member states and users, and keep up with new scientific knowledge**. This will be a major evidence-based review process that will address the **structural changes and new disease entities** and end up in a final product of **user-friendly and scientific ICD-11**.

WHO has planned to embark in a large-scale revision activity for the ICD that will require resources which will be raised by the WHO Network. The revision process will involve **multiple parties and professionals** and consider the use of classifications at **hospitals, primary care** and other health care settings such as **rehabilitation and long term care**. Once the problems and proposed solutions are obtained from different sources, we plan to synthesize them in an **evidence based proposal with transparent rules and knowledge sharing tools**. The development will be made in a **well-defined database using IT technology and Internet**. Various **expert groups** will be consulted and relevant sections of the classification will be field-tested using **field trials**.

We plan to **reveal the full revision business plan and timetable in the 2004 Annual Meeting** in Reykjavik and complete the work by 2011.

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Editorial

As families often do, the WHO Family of International Classifications (WHO-FIC) consists of members of various ages from new born and young children up to very old members. The ICD is the very old member of the family whereas the ICF is a youngster and some new members are as well. It means that the related activities are also varying a lot. For the younger ones such as ICF, ICECI and ISO9999 focusing at implementation is most important. For the adult and old ICD it is a matter of how to keep it healthy and updated, and how to improve training in using the ICD. The front page of this newsletter shows the vision on the continuous ICD revision process.

For ICF the degree of implementation varies over the world. Several countries or language groups are still in the process of translation which is an important condition for implementation. Those countries which have their own language version available started to use and implement the ICF right after its release. A good example is North America, see the contribution from Paul Placek on the ICF NACC meeting last June (papers available from the website: www.icfconference.com/presentations.shtml). In several countries training programs in applying the ICF have been developed; we know about training programmes in Australia, France, Italy and the USA. See the Italian contribution from Matilde Leonardi in this number. The WHO-

FIC Implementation Committee started to develop an ICF implementation plan based on a SWOT analysis. At the next annual meeting in Reykjavik October 2004 we hope to make progress in this work and identify short term activities versus mid and long term activities for the implementation of the ICF.

We see other ICF developments as well, such as:

- *the ICF Children & Youth available on the WHO website for field testing: www3.who.int/icf/onlinebrowser/icf.cfm;*
- *running ICF projects in Germany listed at the DIMDI website: www.dimdi.de/en/klassi/ICF/ICF_Prjekte.html;*
- *activities by RI concerning "ICF, Policy and Legislation" (an interim report has been presented at the RI 20th world congress 21-24 June 2004 in Oslo, Norway);*
- *work on the use of the ICF for population based surveys (see for example the contribution by Nenad Kostanjsek about an ESCAP workshop in this newsletter);*
- *growing interest for the ICF in the Social Security (see EUMASS congress);*
- *a planned European pilot study on the use of ICPC and ICF together (for more information ask: marijke.de.kleijn@rivm.nl).*

But are we doing enough with the ICF in Public Health? See the contribution prepared by Els Nieuwenhuijsen.

Version 1.2 of the ICECI (one of the youngest members of the family) is released at a recent meeting in Vienna and waits for broader implementation as well. See a short announcement in this newsletter. A first discussion on implementation took place as well in Vienna.

ISO9999 (technical aids) is an adolescent classification but a new member in the WHO-FIC. We see its implementation growing, even the use of the ISO9999 together with the ICF, see the contribution from Marcia Scherer in this newsletter.

Interest in the area of health interventions classifications is growing as well, see the attempt in the

Netherlands to start a revision process of the existing national procedure classification, also by linking it with WHO ICHI activities. This subject will be one of the items in the yearly conference of the Dutch Centre on classification and terminology on October 8, 2004.

International Organizations

ICECI

The smiles on the faces of the ICECI Coordination and Maintenance Group (CMG) in the photo on page 3 are in response to the release of version 1.2 of the International Classification of External Causes of Injury (ICECI). At a recent meeting in Vienna, the Group gave its approval to the first formal release of the ICECI since it was admitted to the WHO Family of International Classifications (WHO-FIC) as a Related Classification.

Among the improvements included in Version 1.2 is an index. The introduction has also been extensively revised, and provides a detailed guide to what the ICECI is and how it can be used.

Getting the ICECI to this stage has been a long and sometimes uncertain process, and many people have contributed to this international collaborative venture. The Coordination and Maintenance Group takes this opportunity to thank anyone that has been involved.

The ICECI was mentioned in several papers and posters at the recent 7th World Conference on Injury Prevention and Safety Promotion, and related meetings. This early adoption is a good sign, especially as it has occurred despite the fact that the decision was taken not to publicise the system widely while it was still in development.

International Classification of External Causes of Injury (ICECI)



Back row: Ian Scott, Susan MacKenzie, Malinda Steenkamp, Birthe Frimodt-Moller, Yvette Holder, Anneke Bloemhoff; Middle: Lois Fingerhut; Front: James Harrison, Saakje Mulder (Lee Annest, André L'Hours, Bertrand Thélot, Julie Gilchrist, Marijke de Kleijn were not able to join the party).

The ICECI was originally designed for data collection in settings such as hospital emergency departments. It has also been found useful for other purposes. For example, it has been used as a reference classification during revision of another classification, to record risk-factor exposure of children in a cohort study, as the basis for special-purpose classifications and in a growing number of other ways.

It is now time to bring the ICECI to the attention of the injury prevention community and to encourage peers and colleagues to try it out, to find innovative applications, and to contribute to its further development.

Version 1.2 of the ICECI is now available for download at www.iceci.org. Comments and questions about the ICECI can be submitted via the website, or directed to members of the ICECI-CMG. James Harrison is the member responsible for coordinating updates and revisions. He can be contacted at Tel: +61 8 8201 7602; E-mail: james.harrison@flinders.edu.au.

The ICECI code for toy balloon is C3.6.02.60. Fortunately the balloons used to celebrate the release of ICECI 1.2 caused no injury.

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Asia and Pacific

ESCAP

Best Questions for Disability Statistics

To learn about disability in a household survey or census, what question would you ask?

- a) "Do you have a person in the household who is blind, deaf or physically or mentally disabled?" and/or
- b) "Do you or anyone in the household need some help with carrying out activities such as:
 - i. self care (e.g. doing everyday activities such as eating, showering, dressing or toileting);
 - ii. body movement (e.g. getting out of bed, moving around at home or at places away from home);
 - iii. communication (e.g. understanding or being understood by others)"

These two examples of disability census questions represent the

spectrum of disability measurement approaches which were presented during the 1st UNESCAP Workshop on improvement of disability statistics and measurement in Bangkok, Thailand from 22-28 May 2004. The workshop was the starting point of a two-year project which aims to improve the quality and comparability of statistics on disability in selected UNESCAP countries by strengthening their skills in the use of the International Classification of Functioning, Disability and Health (ICF) and other international guidelines and principles in the field of disability statistics.

The workshop was attended by 44 participants from 20 countries. Participants included national focal points for disability statistics from National Statistical Offices (NSOs) and representatives from Ministries of Health and Social Affairs as well as NGO representatives. The training and facilitation was provided by representatives from UNESCAP, WHO, the Australian Bureau of Statistics (ABS) and the WHO-FIC Collaborating Centre based at the Australian Institute for Health and Welfare (AIHW).

The main focus of the workshop was to familiarize participants with the ICF and other international standards and principles as well as initiating the design of national collection tools, implementation policies, and training materials.

Due to a balanced mixture of conceptual and practical presentations and real-life exercises followed by discussions participants realised the utility and feasibility of using the ICF framework and identified the major shortcomings of using the traditional, impairment-based approach in disability statistics. There was a strong consensus on adopting the ICF framework in the collection of disability data to better respond to ever-evolving data requirements by the policy communities. In particular, the need for incorporating ICF domains from the Activity & Participation list and the Environmental Factors was emphasised.

During the second half of the workshop participants developed action plans for introducing ICF as a common framework for disability statistics in their countries. For the development of the plan participants carried out a series of tasks, such as situation analysis, objective setting, selection of data collection vehicles, identification of user groups and outlining a consultation and implementation strategy.

The workshop ended with the presentation of the country action plans and endorsement of a work agenda, which included, among other activities, the development of a draft training manual and country level consultations on the action plans. Both activities are part of the preparations for the 2nd workshop, which will take place in Bangkok from 27-29 September 2004.

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Europe

XVth Congress of EUMASS, 10 – 12 June 2004 in Lille, France

EUMASS is the European Union of Medicine in Assurance and Social Security. The Union hold their congresses every two years. In this year the ICF belonged to the main topics. It was dealt in both a plenary session and a seminar. In the plenary session Michael Schuntermann (Germany) talked about the implementation of the ICF in Germany. He summarized that the bio-psycho-social model of the ICF has already found wide acceptance in Germany. Particularly the introduction of contextual factors is welcomed. Several rehabilitation facilities have used the model and the chapters of the revision version Beta-2 as guidelines for documenting their interviews with rehabilitation patients. Their

experiences are encouraging. However, it has already been recognized that coding with the ICF will be difficult and time-consuming. Thus, the practicability of the ICF should be improved. Training in the use of the ICF will be absolutely essential. It is welcomed that the ICF provides a common vocabulary for both people with disability, and professionals in the fields of rehabilitation and disability. This is particularly important because in Germany we have a rather complicated social system. In contrast to the ICIDH, the ICF, in general, contains neutral terms only. Many of our physicians in rehabilitation complain about that. Obviously they also need to be able to express the signs and symptoms of restrictions of functioning in negative terms and in this respect they feel that the ICIDH was more helpful.

While both the concept of Activities and the concept of Participation are clearly understood from the point of view of content some of us have severe problems with the operationalization of both concepts via qualifiers. From a theoretical point of view we regret that the concept of Activity is not theory driven, and that the concept of Participation is not operationalized independently from the concept of Activity. This problem has been realized worldwide. In Germany we try to assign the Participation concept to the legal sphere using the human rights approach and to assign the activity concept to the intervention sphere using the intervention approach on individual level. By now, however, we don't know who to incorporate the third approach to disability, the subjective experience approach, in this way of looking at things. In Germany, the ICIDH or ICF respectively has been taken in account in the following areas:

- 1 The new German Social Code No. IX (SGB IX) from 2001 – Rehabilitation and Participation of People with Disabilities – is based on the ICF.
- 2 All guidelines and general recommendations within the

context of rehabilitation have been adjusted to the ICF.

- 3 The ICF plays an important role in the training for the medical field “Physical Medicine and Rehabilitation” and is also included in the curricula of the medical specializations “Social medicine”, and “Rehabilitation”.
- 4 The German research program “Rehabilitation Sciences” includes some projects dealing with the ICF.
- 5 The model of consequences of diseases (ICIDH) is part of the rehab quality insurance program of the German Pension Insurance from 1994. Since April 1, 2004, the institutes of the German Health Insurance have applied the ICF in their rehab application form.

In the ICF-seminar (titled: Quality process and help instruments helping to take a decision) eight papers were given. Donald F. McAnaney (Ireland) talked about the feasibility of using the ICF as a frame of reference for establishing the prevalence and impact of disability in Ireland. Seija Talo (Finland) dealt with the biopsychosocial ICF model compromising between medical and social definition of disability. Elisabeth Nüchtern (Germany) informed about ICF in German Statutory Health Insurance. Sonja Calais van Stokkom (Sweden) reported on the Promotion and Application of ICF in Sweden: Actors – Problems – Factors of Success. Marijke W. de Kleijn – de Vrankrijker (Netherlands) talked about the use and implementation of the ICF from a Dutch perspective (at national, regional and international level). Catherine Barral (France) discussed the ICF in France: education, uses and network of French speaking European countries. Finally, M-C Rufin (France) and G Bruls (France) with colleagues from Belgium and The Netherlands gave two presentation on the application of the ICF in social insurance, and on the ICF and evaluation of work disability in social insurance. What are they about? What is their relationship? What is the use of ICF in disability evaluation?

The papers (except the last two ones) are available in internet www.vdr.de

via "Rehabilitation", "Tagungen", "wissenschaftliche Tagungen". In the discussion it was strongly recommended to establish a working group under EUMASS's aegis to develop an ICF core checklist for social insurance. Colleagues who are interested in this work should feel free to contact, see e-mail address. It is planned to present the results at the next EUMASS congress 2006 in Dublin.

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FIC around the World

Italy

ICF training

The "ICF in Italy project", launched at the closing conference of the Year of People with Disability last year in Rome by the Italian Ministry of Welfare, is now entering in its active phase. Training was planned as the first crucial activity for ICF implementation at national level in the frame of ICF pilot project in the labour sector. Also for this the Disability Italian Network, the scientific association that works on ICF development, implementation and liaison with WHO, has been preparing the WHO-DIN ICF training course. During the past months DIN experts developed the ICF basic and advanced course to answer the pressing needs that are coming from the labour sector as well as from rehabilitation, statistics, education sectors etc. Professor Jerome Bickenbach is DIN's consultant for the preparation of the training for trainer part, designated by

WHO to collaborate with DIN, and participated to the first ICF training in Italy. The course, also given to the Italian Ministry of Welfare for the "ICF in Italy Project: pilot project ICF and labour sector" is available in 2 languages.

The Disability Italian Network (DIN) organized the first national training course in May 2004. The WHO-DIN ICF training is divided in two courses (ICF Basic and ICF Advanced Course) and a distance learning methodology.

1. *Basic Course* is an eight hours course on: brief history of disability and of classifications, ICF basic principles, ICF structures and background, differences between classifying, measuring, assessing, impact on national legislation and application in different settings, presentation of ICF tool box, core sets and WHO DAS, ICF children. The ICF "revolution" in health and disability sector, the ICF in Italy project, ICF in the world, perspectives, projects and contacts.

2. *Advanced Course*: 3 days courses + 3 months DL (distance learning)+ 1 day evaluation and exam. This course is structured as follows (in brief):

- 3 days
- day 1. ICF structure, chapters, domains etc., how to code, how to use the different qualifiers, when to use them, difficulties and faq.
- day 2. ICF checklist: how to use it, coding case vignettes. Use of checklist in different settings (rehabilitation, administration, statistics etc.)
- day 3. WHO DAS: description and use of WHO DAS, how to assess, video cases of interviews with actors, coding, exercises of coding case vignettes, of back coding and from codes rewrite case histories.

3 *Distance learning methodology*.

Each pupil is assigned a user ID and a password when completing the advanced course. DIN has a specific access for training on its website. DIN teachers have a section with question and answer with pupils about home works, problems, issues, etc. Each pupil will have to code ten pre-

assigned cases, prepared and tested by DIN, to write 3 cases with coding, to do 5 complete case coding with ICF checklists as well as assessment with WHO DAS 2 in real cases that each participant sees in his/her work. Final day: each tutor is doing an evaluation of homework done by pupils 15 days before the final evaluation. The last day is also to have forum discussion of the application of ICF in each participant's setting, difficulties, group discussion etc. Then there is the final exam on the whole course and the release of a DIN ICF certificate.

All cases recorded with ICF checklist are collected by DIN's databank. All training participants become members of the ICF interested group that is growing in Italy and that is coordinated by DIN. DIN reports Italian activities to WHO and liaises with members of the scientific international community.

DIN will update the interested readers on its experience with the training that is quickly developing since its first course in Rome.

Disability Italian Network website:

www.icfitaly.it

See for ICF in Italy project:

www.welfare.gov.it/icf

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Netherlands

Health interventions in the Netherlands

A national classification on health interventions (ICPM-Dutch Extension) is already in use since 1989. It has 4 ICPM-chapters, extended with a 5th and 6th digit:

- Procedures for medical diagnosis
- Surgical procedures

- Other therapeutic procedures and
- Ancillary procedures

A 6th update will be implemented on January 1, 2005. The update is developed by an editorial committee, since 1989 consisting of a few experts from the main national users of the classification (CBV-corporation, Prismant and Dutch Association for Medical Records Administration) and chaired by the undersigned. The changes are based on comments of individual users of different information systems.

The editorial committee recommends a revision of the classification after this update. Later developed Dutch procedure classifications for several specialist groups (radiologists, radiotherapists, medical microbiology and immunology) and allied health professions have often a multi-axial structure. The recently developed procedure classifications in France is based on such a multi-axial structure for the description of surgical procedures, proposed in the CEN/ENV 1828, and stakeholders in Germany are also interested in a revision of their ICPM-based procedure classification into such a structure.

The revision process has to cope with two constraints:

- The content of each ICPM-DE code should be mapped to a code in the new structure by a 1:1 mapping;
- The multi-axial structure should facilitate statistical analyses, especially the aggregation to the new International Classification of Health Interventions (ICHI) of WHO should be possible.

This ICHI is a WHO-FIC network proposal of a statistical classification for international use and for use in countries which do not currently have such a classification and might wish to use one. It is a short classification including some 2000 health interventions based on ICD-10-AM, the Australian modification of ICD-10. For correspondence on ICHI: ICHI@who.int.

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I believe it's going better with ...

A conference about describing health states

Last year, on Friday 2 May 2003, the WHO-FIC Collaborating Centre in the Netherlands organized a conference entitled: "How are you doing?"

This question aimed at the serviceability of international classifications in ICT-applications, medical records, information systems, surveys and policy papers containing information on health states.

This autumn, on Friday 8 October 2004, the Centre will convene again a conference about serviceability.

Because of the positive but nuanced answers on 'how are you doing', the title this time is: "I believe it's going better with ...". Meaning not only international classifications but for instance also reimbursement wordings, formal language or free text.

How to describe health states at best, might be a matter of belief. There are 'thomistic classifiers', 'moderate calculators', 'orthodox terminologists' and 'free word processors'. Four keynote-speakers are invited to rough out a coherent health information supply, each one from his or her own perspective, in this provoked by the speaker of the Collaborating Centre. Belief systems are competitive: they propagate their own typical quality and they denounce other beliefs. One has the floor in the first session of the day. The floor will discuss the issue with a forum of these speakers in the last session of the day. There are two parallel sessions in between for the exchange of experiences with the different systems at different fields of application, such as health care, education, social security and labour. Which data are relevant for patients/clients, professionals and policy makers? On the one hand every application is dedicated to its own purpose and result, on the other hand the serviceability of the thus available data for other purposes has to be served. How to combine data from different sources? There are a few appealing examples on which the forum members may react from their own perspective.

The results of the conference will be reported in Dutch on the website, www.rivm.nl/who-fic/conferentie.htm, and in the next newsletter in English. A subscription form can be found on the website.

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North America

Overview of June 1-4 ICF meeting in Halifax

More than 100 persons registered for the annual North American Collaborating Center (NACC) meeting on the International Classification of Functioning, Disability and Health (ICF) on June 2-4, 2004 in Halifax, Nova Scotia, Canada. The meeting was preceded by a one-day pre-conference tutorial, which was attended by 65 persons. The tutorial addressed understanding the ICF in the terminology spectrum for human function and disability. The WHO Collaborating Center for the Family of International Classifications (WHO FIC) for North America is housed at the National Center for Health Statistics (NCHS), CDC, and works collaboratively with the Canadian Institute for Health Information (CIHI) and Statistics Canada. The NACC Meetings on ICF are held in the U.S. and Canada on alternate years; in addition to information exchange, the principal objective of this year's meeting was to develop a North American Research Agenda for ICF.

Planning committee members were Paul Placek and Marjorie Greenberg of NCHS, Diane Caulfeild and Kathey Cauley of CIHI, and Alex Ruggieri of Mayo Clinics. Sponsors of the meeting and tutorial were NCHS, CIHI, Statistics Canada, Social Development Canada and the Center for International Rehabilitation Research Information and Exchange (U. of Buffalo). Participants were primarily from the U.S.

and Canada but also included representatives of the Australian, Dutch, French, Japanese and Nordic Collaborating Centers as well as other attendees from Australia, Brazil, Guinea, Japan, Nigeria, South Africa and the United Kingdom.

Nenad Kostanjsek, of the Classification, Assessment and Terminology (CAT) Team at WHO, made presentations in both the tutorial and full meeting. Dr. Richard Madden, Head of the Australian Centre, and Dr. Rune Simeonsson, co-chair of the Team developing the ICF for Children and Youth, also made plenary presentations. Dr. Lee Kirby, Dalhousie University, served as a local host and provided a tour of the Mobility Clinic at the University, which he directs. Dr. John Rietschlin, Manager of Knowledge Development, Office for Disability Issues, Canadian Department of Social Development, participated on a reactor panel the last day of the meeting. About 50 papers presented in plenary and concurrent sessions, as well as poster sessions, covered how ICF can inform work on functioning, disability and health in a variety of arenas. These include clinical practice, quality of care and outcomes research, reimbursement and resource allocation, eligibility for disability programs, public health practice, population health statistics, community development and education of health professionals. Other issues addressed were mapping existing assessment tools to ICF, operationalizing ICF as a classification, and updating and enhancing ICF based on empirical studies.

The papers presented in Halifax, as well as past conferences and studies, will form the basis of a comprehensive North American Research Agenda for ICF. The purposes of this research agenda are to develop a science base for ICF implementation, identify areas for ICF improvement and expansion, engage the research community in ICF applications and identify research for future funding by public and private

organizations. The major crosscutting themes identified at the conference were:

- 1) The Life Cycle of ICF, including development and enhancement;
- 2) Applications across the full range of settings, including reliability and validity studies;
- 3) Convergence and integration with other terminologies, instruments and frameworks; and
- 4) Education and Training, including raising awareness about functioning and disability.

Participants in the Halifax meeting were asked to rank the highest priority topics, which will help guide implementation of the research agenda. The conference website www.icfconference.com has PowerPoint presentations from the conference, and will eventually have registration materials for the 11th Annual ICF Conference to be held June 13-17, 2005 at the Mayo Clinics in Rochester, Minnesota.

Authors of papers presented in Halifax are being invited to submit full papers by fall 2004 for possible publication in 2005 as Volume 3 in "Disability and Health: ICF - Setting a Research Agenda." Persons may check monthly messages at the Monthly NACC Clearinghouse on ICF at the website for more information on the Halifax and Rochester conferences.

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USA

The ICF and Public Health: are we doing enough?

The depth and breadth of presentations at the 2004 North American Collaborating Centre (NACC) conference on the International Classification of Functioning, Disability, and Health (ICF) demonstrated overwhelming support for, and growing interest in, the application and utilization of the ICF within a variety of healthcare fields. Many of the presentations communicated ways in which the utilization of the ICF can have positive implications for their respective areas including administration, assistive technology, clinical practice, uniform research data collection, community participation, and the identification of unmet needs among special populations. Even though the ICF has gained major international attention, the ICF applications within the realm of public health, however, appear to be limited.

The purpose of this brief paper is to serve as a catalyst to a discussion concerning the various ways in which the ICF may prove beneficial to the discipline of public health, particularly in regards to research, education, and service. It is not the intent of this paper to provide a review of the literature of public health applications, but rather to stimulate a dialogue amongst those currently using the ICF and potential new users as to the prospective benefits offered by the conceptual framework of the ICF for the field of public health. Lollar (2002) provided an eloquent presentation of the emerging opportunities of the ICF for public health and disability. Because of the rapidly increasing numbers of individuals with disabilities and the health-related disparities between individuals with and without disabilities there is a growing need to bring disability issues to the forefront of public health research, education and service. Identifying certain problems and discussing the potential

utility in these areas may help to gain more interest and support for the ICF within the public health domain.

Research

The problems in public health research can be captured in three points:

- an inconsistent use of the term disability;
- the lack of a uniform, comprehensive approach to the investigation of complex issues surrounding chronic conditions and disabilities; and
- the relatively narrow focus on the disease process itself grounded on the International Classification of Disease (ICD).

One major benefit, as we know from work done at the international level, is the collection of uniform, consistent, and standardized data. A uniform framework as provided by the ICF, will also allow for comparison of data collected over time between and within communities, counties, and states. Uniform data collections lend themselves to a variety of analyses, the results of which would enhance policy regarding public health on both a macro (global) and micro (community) level. A more detailed discussion of this subject matter can be found in the special issue of Disability and Rehabilitation on the ICF (June 2003).

Another benefit of the ICF in public health research is that the ICF offers a uniform framework similar to the ecological model currently promoted in health behavior change and health education research (Bartholomew, 2002). Certain psychological, social, and environmental determinants of behavior change can be linked with the ICF domains and the ICF codes. This research is critical to: increase the implementation of the ecological model for all people, including people with disabilities; evaluate the impact of intervention programs on participation for every-one; and to discover new variables which have not yet been included in the ICF. The findings of public health research may then, in turn, contribute to the future revision of the ICF by testing relationships between variables and identifying the

most critical factors influencing behavior change.

Education

There are two primary issues in health education:

- the education of students in public health and
- health behavior change and health education provided by public health professionals.

A close examination of the first issue reveals that, in general, schools of public health lack a uniform, operational definition of the term "disability." This may contribute to some schools seemingly placing limited emphasis on the public health needs of individuals with disabilities, and not stressing that disability is a phenomenon that concerns every one. Health disparities are often taught in terms of gender, race, and socio-economic status, but rarely in terms of individuals who have or do not have a disability. For example, the U.S. Department of Health and Human Services (2000) stated that disparities have been found in higher health care costs, lower rates of societal participation, and higher rates of chronic (secondary) health conditions such as diabetes, depression, and obesity.

A new development among several universities worldwide is the creation of interdisciplinary disability studies programs. The role of public health appears to be under-emphasized or not recognized in these programs. The ICF may serve as the overarching framework to study disability from the perspective of architecture, engineering, information technology, law, rehabilitation, literature, medicine, etc. A common language will allow for disciplines to better communicate and collaborate in particular in terms of functioning (at the body level, activity level, and the participation level) and the role of the environment for individuals with disabilities.

In regards to health behavior change and health education provided by public health professionals, the ICF can be a useful tool in the identification of variables and factors

influencing outcomes, which is necessary to measure progress in health indicators such as: physical activities, obesity, tobacco use, substance abuse, mental health, injury prevention, etc. In fact, the ICF fits well the Intervention Mapping concept for designing theory and evidence-based health promotion programs (Bartholomew et al, 2002).

Applying the ICF framework in public health education can also benefit the need to provide health educational materials in clinics and other locations available and accessible for individuals with visual impairments or blindness, hearing impairments or deafness, as well as for those who have learning disabilities or cognitive impairments. For instance, are AIDS prevention materials available in large print and Braille, are websites with essential health promotion education fully accessible (i.e. Bobby approved are sign language interpreters available when violence is discussed in the community, and are educational films and videos available with captions?)

This integrated health education may be a step towards the elimination of stigma, often experienced by people with disabilities.

Service

Again, one of the primary problems faced by public health services, particularly at the community level, is the lack of uniform communication and the often-narrow focus on the disease process and the medical approach. One may ask whether this is due, in part, to a general unawareness of a functioning-related classification addressing the complex issues of people with chronic conditions and disabilities. The application of the ICF can benefit in particular the availability, accessibility and affordability of community-based services for people with disabilities. For instance, the provision of services in reproductive health education, breast and cervical cancer screening, the availability and accessibility of fitness centers for people with mobility impairments, and the creation of public health prevention programs of

domestic violence for people with cognitive impairments, etc.

Furthermore, the ICF application is not only useful for secondary and tertiary prevention, but also for primary prevention. For instance, a person may be more motivated to engage in regular exercise when he or she realizes that the immediate benefits are in terms of functioning, rather than in terms of cardio-vascular disease prevention. Using the ICF codes, regular rigorous exercise can enhance physical tolerance and stamina (ICF b4550), duration of walking (ICF d450) and social participation such as recreation and leisure (ICF d920).

One example towards the promotion of the health and wellness of persons with disabilities is an integrated program of policy, practice and research presented on the web by the North Carolina Office on Disability and Health (<http://www.fpg.unc.edu/~ncodh>).

Summary

The author suggests that the ICF offers many different applications for public health research, education, and service. Public health can set the stage to use ICF variables and factors that influence the health and well-being of all people. The challenge, however, will be to demonstrate and convince the public health community that the ICF can contribute to data collection, enhancing communication, and above all to the participation of individuals with disabilities in the society. As Hurst (2003) stated, it is the hope of the future that the ICF will remove stigma, change people's thinking, and influence the rights and equal opportunities for people with disabilities. Let us continue to discuss the value of the ICF in public health.

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The ICF and the Capability Approach

The capability approach has been applied extensively to issues related to poverty and gender inequality. Similarly, the capability approach has potential to contribute to the understanding of disability and the life situations experienced by persons with disabilities as another frequently marginalized segment of the population. The capability approach holds several common aspects with the ICF framework. For example, both describe functioning and disability as the dynamic interaction of the individual with/without an impairment or health condition in his/her environmental context. And both recognize the role of personal and environmental factors in the functioning and disability process. Since the capability approach shares several common elements with the ICF conceptual framework, there is potential to use the ICF framework and even the ICF classification with the capability approach. In fact, the ICF

provides a mechanism to identify and to develop interventions that facilitate the development of capabilities among persons with impairments who may experience disability in the context of their environment.

Developed by Nobel Laureate Amartya Sen, the capability approach focuses on the life a person leads - what he/she can or cannot do and what he/she can or cannot be. Two primary components, functionings and capabilities, are integral to this approach. Similar to ICF activities (execution of tasks or actions), functionings are a person's set of achieved doings and beings, or what he/she manages to do or be. Functionings differ from capabilities, which are a person's potential to achieve certain functionings, or all the various combinations of what he/she can do or be. Essentially, these two components are differentiated between achieved functionings (what the person is actually doing as a result of choice or constrained choice) and potential functionings (what the person is able to do within his/her environmental context but might not necessarily be doing).

Consequently, how environmental factors affect a person's activities and/or participation is an important inclusion in both the ICF and in the capability approach, which specifically considers how the environment affects a person's functionings and/or capabilities. Moreover, personal factors such as choice are considered influences on personal functionings in the capability approach. Although not specifically mentioned in the ICF, choice (or lack thereof) is inherently included in the determination of what a person actually does along with his/her ability and specific environmental circumstances.

Well-being is generally considered not only what a person achieves, but also the options from which he/she has had the opportunity to choose. By integrating opportunity or advantage into the capability approach, it provides a more accurate depiction of a person's well-being. For example, a question based on functionings would

ask people only if they are working. Even if both responded no that they are not working, we do not learn about their specific circumstances influencing why they are not working. However, a question based on capabilities would ask about their potential to work. Here we might learn that Person A with a sensory impairment is able to work but has chosen to stay home with her two children whereas Person B with a mobility impairment is not able to work due to the lack of assistance in his workplace. For both persons, their functionings are identical (not working) but their capabilities differ along with their life situations.

The capability approach emphasizes the need to move beyond functionings to assessing the fundamental capabilities of persons, what persons are really able to be or do, and moreover what environmental factors affect their capabilities. Capabilities represent the life potential or opportunities that exist for any person. In this sense, capabilities are more comparable to the ICF concept of participation since both terms describe a person's involvement in a life situation or their lived experience. Examining both capabilities and functionings together results in an improved understanding of the person's situation.

This can be accomplished by using the ICF classification's detailed list of activities and participation to identify a person's list of actual and potential functionings. Additionally, the ICF qualifiers facilitate the assessment of a person's capacity and performance, which would provide additional information on how a person's functioning changes in his/her environment. Finally, the ICF section on the environment provides helpful information on a range of environmental factors that may influence a person's potential and achieved functionings. Ultimately, using the ICF classification scheme together with the capability theoretical framework will facilitate greater use of both and will contribute to improved

understanding of disability and persons experiencing disability.

Two papers using the ICF in promoting the capability approach to disability are available. Both papers were prepared and presented by Patricia Welch Saleeby.

Applying the Capabilities Approach to Disability, Poverty, and Gender presented and prepared for the conference "Promoting Women's Capabilities: Examining Nussbaum's Capabilities Approach," Cambridge University, UK. Full paper available at <http://www.stedmunds.cam.ac.uk/vhi/nussbaum/papers/welch.pdf>.

Disability, Poverty, and Development: An Application of the Capability Approach in Nepal presented and prepared for the conference, From Sustainable Development to Sustainable Freedom, University of Pavia, Italy. Full paper available at <http://cfs.unipv.it/sen/index.html>

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Enhancing Assistive Technology Selection and Use: Connecting the ICF and ISO9999

People with physical, sensory, and cognitive disabilities may experience challenges in any combination of areas of the WHO's ICF domains of Activities and Participation. Using examples of assistive technologies (a key environmental factor) from the International Organization for Standardization's *international standard ISO 9999*¹ as well as findings from the relevant literature and the author's research and experiences, each category within Activities and Participation has a wide assortment of devices and other supports to assist the individual with a limitation in that area. With few exceptions, little of this overlaying of classifications has been done², which is unfortunate because a common language and structure within

which to convey a shared understanding would be of tremendous benefit to the international community of assistive technology researchers, practitioners, and users. Adding to this need is a means of assessing the ICF components in the context of individuals' assistive technology and other support needs. While there are many candidate measures for this, the example is provided in Table 1 of the capacity of the Matching Person & Technology (MPT) assessments³ to accomplish this for the field of rehabilitation and consumers with cognitive, physical and sensory disabilities (see next page). The MPT process is both a personal and collaborative (user and provider working together) assessment and the paper-and-pencil measures can also be used as interview guides. A range of assessments are offered from a quick screen, to specialized evaluations (which can be completed in approximately 15 minutes) to a comprehensive assessment (which can be completed in 45 minutes by someone trained and experienced in using the forms). The MPT process is validated for use by persons with disabilities (ages 15 and up) and it is applicable across a variety of users and settings. The measures have been determined to have good reliability and validity and they have been used in many research studies within the U.S. and Canada as well as Europe⁴. The results of these and other studies show that persons with disabilities report more benefit from and satisfaction with technology as a result of participating in a person-centered process aimed to match them with the most appropriate technologies for their use. The benefit of the MPT assessments to professionals is that it offers them a guide into which assessment components to incorporate into their evaluation procedures and to ensure that consumer preferences as well as environmental barriers are addressed prior to the selection of a particular AT and frustration is experienced with a poor match of person and technology. An effort to depict how this can be achieved is depicted in Table 1.

Table1: Matching Person & Technology Assessments as Indicators of Consumer Support Needs and Preferences in ICF Domains of Activities and Participation

ICF Activities and Participation	Support Examples from ISO 9999 (2002) and Other	MPT Measure
LEARNING AND APPLYING KNOWLEDGE: learning, applying the knowledge that is learned, thinking, solving problems, and making decisions.	Note taking services, PDA's and laptop computers, audio recording devices, computer software, electronic calculators	SOTU, ETPA
GENERAL TASKS AND DEMANDS: carrying out single or multiple tasks, organizing routines and handling stress.	Personal assistance, service animals, timers, memory aids	ATDPA Sections B and C
COMMUNICATION: communicating by language, signs and symbols, including receiving and producing messages, carrying on conversations, and using communication devices and techniques.	Sign language interpreters, electronic and manual communication devices, computer input and output devices, telephones and modifications telephone, radio and TV adaptations, signaling and alerting devices	Initial Worksheet, History of Support Use, ATDPA Section B
MOBILITY: changing body position or location or by transferring from one place to another, by carrying, moving or manipulating objects, by walking, running or climbing, and by using various forms of transportation.	Manual and power wheelchairs, canes and walkers, transfer boards, vehicle modifications, lifts, relief maps	ATDPA Sections A and B
SELF-CARE: caring for oneself, washing and drying oneself, caring for one's body and body parts, dressing, eating and drinking, and looking after one's health.	Modified eating utensils, non-slip mats, robotic devices, buttonhooks liquid soap dispensers, electric toothbrushes	ATDPA Sections A and B
DOMESTIC LIFE: acquiring a place to live, food, clothing and other necessities, household cleaning and repairing, caring for personal and other household objects, and assisting others.	Bottle and can openers, tilt tables, modified lighting, support bars and rails	ATDPA Sections A and B
INTERPERSONAL INTERACTIONS AND RELATIONSHIPS: basic and complex interactions with people (strangers, friends, relatives, family members and lovers) in a contextually and socially appropriate manner.	Manual and electronic communication devices, life skills coach, sexual aids	ATDPA Sections B and C
MAJOR LIFE AREAS: tasks and actions required to engage in education, work and employment and to conduct economic transactions.	Remote control devices, customized workstations, structural modifications	ATDPA Sections A and B
COMMUNITY, SOCIAL AND CIVIC LIFE: actions and tasks required to engage in organized social life outside the family, in community, social and civic areas of life.	Signaling and alerting devices, noise reduction devices, adapted recreational and leisure devices	ATDPA Sections A and B

Source: Institute for Matching Person & Technology, Inc.

As the number of assistive technology options increase, individualized interventions for individuals with cognitive disabilities will be easier to accomplish. The key to successful and optimal use of these products will be an appropriate and comprehensive assessment of consumer needs and preferences and the identification of additional accommodations and supports.

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