WHO Classifications in Rehabilitation

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Acting Past President ISPRM
Overview

- Rehabilitation and WHO’s Paradigm Shift
- Coding Rehabilitation Interventions with the WHO’s Classifications
- Clinical Rehabilitation Management
- National Rehabilitation Quality Management
Rehabilitation and WHO’s Paradigm Shift
WHO’s Mandate

Normative, aspirational

“health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”

Preamble to the Constitution of the World Health Organization April 1948. The Definition has not been amended since 1948
WHO’s paradigm shift

- Traditional focus
  - compression of morbidity
    - “absence of disease or infirmity”

- New focus
  - optimal functioning
    - “complete physical, mental and social well-being”
ICF- Operationalization of Health

• Purpose
  – Describe, understand and monitor health and the response by the health system

• Operationalization - Conceptualization
  – Not a theory - not true or false

• Operationalization - Classification
  – Domains
    • universal, etiologically neutral
    • mutually exclusive and cumulative exhaustive
### Rethinking the Health Strategies based on the ICF Operationalization of Health

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Health Goal</th>
<th>Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventive</td>
<td>Disease prevention</td>
<td>Morbidity</td>
<td>ICD</td>
</tr>
<tr>
<td>Promotive</td>
<td>Optimal functioning</td>
<td>Capacity</td>
<td>ICF</td>
</tr>
<tr>
<td>Curative</td>
<td>Disease control</td>
<td>Survival</td>
<td>ICD</td>
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<tr>
<td>Rehabilitative</td>
<td>Optimal functioning</td>
<td>Functioning</td>
<td>ICF</td>
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<tr>
<td>Supportive</td>
<td>Optimal functioning</td>
<td>Performance</td>
<td>ICF</td>
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<tr>
<td>Palliative</td>
<td>Wellbeing</td>
<td>QoL</td>
<td>?</td>
</tr>
</tbody>
</table>

- **Functioning**
  - Key health goal of the 21st century

- **Rehabilitation and support**
  - Key health strategies of the 21st century
Rethinking Rehabilitation
ICF based Conceptual Description

Adopted by ISRRM in 2012

Towards a Conceptual Description of Rehabilitation as a Health Strategy

Thorsten Meyer, PhD\textsuperscript{1,2}, Christoph Gutenbrunner, MD, PhD\textsuperscript{3}, Jerome Bickenbach, PhD\textsuperscript{4,5,6}, Alarcos Cieza, PhD\textsuperscript{7}, John Melvin, MD\textsuperscript{8} and Gerold Stucki, MD\textsuperscript{1,7}

From the \textsuperscript{1}Swiss Paraplegic Research (SPF), Nottwil, Switzerland, \textsuperscript{2}Institute for Epidemiology, Social Medicine and Health Systems Research, Hannover Medical School, \textsuperscript{3}Department of Rehabilitation Medicine & Coordination Centre of Rehabilitation Research, Hannover Medical School, Hannover, Germany, \textsuperscript{4}Queens University, Department of Philosophy, Kingston, Ontario, Canada, \textsuperscript{5}World Health Organization, Geneva, Switzerland, \textsuperscript{6}Department of Rehabilitation Medicine, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA, USA and \textsuperscript{7}Seminar of Health Sciences and Health Policy, University of Lucerne, Switzerland

Objective: A proposal for a conceptual description of rehabilitation was made in 2007 based on the International Classification of Functioning, Disability and Health (ICF) by the World Health Assembly in 2001 and the reference to the ICF in the World Health Assembly’s resolution on “Disability, including prevention, management and rehabilitation” in 2005, we can now rely on a universally accepted conceptual model. It is thus time to initiate the process of evolving an ICF-based conceptual description that can serve as a basis for similar conceptual descriptions and according definitions of the professions applying the rehabilitation strategy and of distinct scientific fields of human functioning and rehabilitation research. In co-operation with the Physical and Rehabilitation Medicine Section of the World Federation of Physical Medicine and Rehabilitation (WFRPM) and the International Society for Rehabilitation Research (ISRRM) the first version of this proposal was developed. It is here presented with an overview of the different models and definitions and their conceptual backgrounds and a summary of the discussions about this conceptual description and to provide the current version, which has been adopted by different European professional and scientific organizations.

Methods: First, the history of the development of the concept-
Rethinking PRM
The Medicine of Functioning «in Light of Health Conditions»
PRM
ICF-based conceptual description

Adopted by ISPRM in 2012
Stucki G, Grimby G.
Organizing human functioning and rehabilitation research into distinct scientific fields. Part I: Developing a comprehensive structure from the cell to society.

Spectrum of topics for World congresses and other activities of the International Society for Physical and Rehabilitation Medicine (ISPRM): A first proposal.
WHO’s Paradigm Shift and Rehabilitation

2001
World Health Assembly endorses the International Classification of Functioning, Disability and Health (ICF)

2011
World Report on Disability (WRD)

2013
International Perspectives on Spinal Cord Injury (IPSCI)

2014

2015
Learning Health System for Spinal Cord Injury and International SCI Survey (INSCI)
Coding Rehabilitation Interventions with WHO’s Classifications
WHO’s Family of International Classifications
Universal standards for comprehensive health information

**Related Classification**
- International Classification of Primary Care (ICPC)
- International Classification of External Causes of Injury (ICECI)
- The Anatomical, Therapeutic, Chemical (ATC) classification system with Defined Daily Doses
- ISO 9999 Technical aids for persons with disabilities

**Reference Classifications**
- International Classification of Diseases (ICD)
- International Classification of Functioning, Disability and Health (ICF)

**Derived Classifications**
- International Classification of Diseases for Oncology, Third Edition (ICD-O-3)
- The ICD-10 Classification of Mental and Behavioural Disorders
- Application of the ICD to Dentistry and Stomatology, Third Edition (ICD-DA)
- Application of the ICD to Neurology (ICD-10-NA)
- ICF Version for Children and Youth (ICF-CY)

**Under development**
- International Classification of Health Interventions (ICHI)
## Coding Rehabilitation Interventions

<table>
<thead>
<tr>
<th>Why</th>
<th>What</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD</td>
<td>ICHI</td>
<td>ICD</td>
</tr>
<tr>
<td>ICF</td>
<td>ICF</td>
<td></td>
</tr>
</tbody>
</table>
Coding Rehabilitation Interventions

ICD

• Why?
  – Coding Disease Entities
  – Coding Functioning Properties (Impact)

• “Outcome”?  
  – Coding Functioning properties (Change)
Revision Steering Group (RSG)

WHO

Mortality TAG

Morbidity TAG

Functioning TAG

ISPRM-WHO Collaboration

Dentistry TAG

Musculoskeletal TAG

Dermatology TAG

Neurology TAG

Ear, Nose and Throat TAG

Ophthalmology TAG

External Causes and Injuries TAG

Paediatrics TAG

Maternal, neonatal and Urogenital TAG

Rare Diseases TAG

Mental Health TAG

Internal Medicine TAG

Internal Medicine Working Groups

Gastroenterology

Cardiovascular

Hepatology & Pancreatobilary

Nephrology

Endocrinology

Rheumatology

Haematology

Respiratory

Neoplasms/cancer
THE ICD 11 CONTENT MODEL

Any Category in ICD is represented by:

1. ICD Concept Title
   1.1. Fully Specified Name

2. Classification Properties
   2.1. Parents
   2.2. Type
   2.3. Use and Linearization(s)

3. Textual Definition(s)

4. Terms
   4.1. Base Index Terms
   4.2. Inclusion Terms
   4.3. Exclusions

5. Body Structure Description
   5.1. Body System(s)
   5.2. Body Part(s) [Anatomical Site(s)]
   5.3. Histopathology

6. Manifestation Properties
   6.1. Signs & Symptoms
   6.2. Investigation findings

7. Causal Properties
   7.1. Etiology Type
   7.2. Causal Properties - Agents
   7.3. Causal Properties - Causal Mechanisms
   7.4. Genomic Linkages
   7.5. Risk Factors

8. Temporal Properties
   8.1. Age of Occurrence & Occurrence Frequency
   8.2. Development Course/Stage

9. Severity of Subtypes Properties

10. Functioning Properties
    10.1. Impact on Activities and Participation

11. Specific Condition Properties
    11.1. Biological Sex
    11.2. Life-Cycle Properties

12. Treatment Properties

13. Diagnostic Criteria

14. External Causes
“The Generic Perspective”
Assessing the impact of health conditions using the ICF

“The example of Musculoskeletal Conditions”
Assessing the impact of musculoskeletal health using the ICF.

Harmonizing WHO’s ICD and ICF: importance and methods to link disease and functioning
Functioning Properties


SPECIAL REPORT

TOWARDS THE JOINT USE OF ICD AND ICF: A CALL FOR CONTRIBUTION

Friedbert Kohler, MD¹,², Melissa Selb, MSc³,⁴, Reuben Escozipo, DPT, MSc⁵,⁶,⁷, Nenad Kostanjsek, MSc,⁶ Gerold Stucki, MD, MS³,⁴,⁵ and Marcelo Riberto, MD, PhD⁷ on behalf of the International Society of Physical and Rehabilitation Medicine (ISPRM) sub-committee Implementation of the ICF and the participants of the São Paulo ISPRM – World Health Organization (WHO) workshop

J Rehabil Med 2015; 47: 2–8

SPECIAL REPORT

ICD-11: A COMPREHENSIVE PICTURE OF HEALTH, AN UPDATE ON THE ICD–ICF JOINT USE INITIATIVE

Melissa Selb, MSc¹,², Friedbert Kohler, MD³,⁴, Molly Meri Robinson Nicol, DC⁵, Marcelo Riberto, MD, PhD⁶, Gerold Stucki, MD, MS¹,²,⁷, Cille Kennedy, PhD⁸ and Bedirhan Üstün, MD⁵
Functioning Properties

Domains
- Default: ICF Rehabilitation Set (d-categories)
- HC-specific
  - additional d-categories from ICF Core Sets
  - additional d-categories from systematic reviews

Coding
- Binary: no problem vs problem
fTAG – functioning Topic Advisory Group

ICD-11: A comprehensive picture of health, an update on the ICD–ICF joint use initiative

Call for ISPRM contributors
Field Testing!
Poster from WHO-FIC Annual Meeting 2015 can be downloaded from website of the ICF Research Branch website

The next step toward the joint use of ICD and ICF: Developing coding instructions for the Functioning Properties (FPs)

Birgit Prodinger1,2,3, Melissa Selb1,2, Robert Jakob4, John Melvin5, Molly Meri Robinson Nicol4, Gerold Stucki1,2,3, Cille Kennedy6

1ICF Research Branch, a cooperation partner within the WHO Collaborating Centre for the Family of International Classifications in Germany (at DIMDI), Nottwil, Switzerland; 2Swiss Paraplegic Research, Nottwil, Switzerland; 3Department of Health Sciences and Health Policy, University of Lucerne, Switzerland; 4Classifications, Terminologies and Standards, World Health Organization; 5Sidney Kimmel Medical College of Thomas Jefferson University, US; 6Office of the Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington DC, USA
ICHI in Rehabilitation Interventions

International Classification of Health Interventions

Courtesy Richard Madden
Co-chair, ICHI Management Committee
(richard.madden@sydney.edu.au)
Background

• 1978: WHO International Classification of Procedures in Medicine (ICPM)
• Many national classifications developed: U.S., Australia, France, Canada, Germany, Nordic countries…
• Limited coverage of allied health or functioning
The situation in 2006

No useable international classification

Consequences:

• Proliferation of national classifications
• Limited scope of national classifications: medical/surgical focus
• Many countries without a classification
• International comparisons difficult

WHO-FIC Network decides to develop ICHI, beginning in 2007
Broad Scope of ICHI

- National classifications of interventions focus on acute diagnostic, medical and surgical interventions provided to hospital in-patients

- ICHI includes / covers all functional sectors of the health system:
  - acute care,
  - primary care
  - Rehabilitation
  - assistance with functioning
  - Prevention
  - public health
A health intervention is an activity performed for, with or on behalf of a person or a population whose purpose is to improve, assess, maintain, promote or modify health, functioning or health conditions.
Structure of ICHI

The classification has been built around 3 axes
⇒ **Target, Action and Means**

**Target:** the entity on which the Action is carried out

**Action:** a deed done by an actor to a Target during a healthcare intervention

**Means:** the processes and methods by which the Action is carried out

Each axis consists of a structured list of categories
ICHI Structure

ICHI Organising Principle
“What is done to what target, and how”

ICHI does not include:
the health condition or human functioning that are the reason(s) for the intervention (can be classified using ICD or ICF)

- The provider of the intervention
- The setting of the intervention
- The outcome of the intervention

Each of these components can be classified separately
Call for Field Tests ICD-11 - ICHI Functioning Properties in Rehabilitation

• Why Rehabilitation?
  – Coding Disease Entities in ICD-11
  – Coding Functioning Properties in ICD-11
    • Functioning Profile
    • Selected goal categories (coded outside ICD 11)

• What Rehabilitation Intervention?
  – Coding Functioning Interventions with ICHI
    • Targets specified as ICF categories

• Change over time ("Outcome")?
  – Coding Functioning properties repeatedly in ICD-11
    • Functioning Profile
    • Selected goal categories (coded outside ICD-11)
Rehabilitation Management in Routine Clinical Practice

Joint Use of ICD, ICHI, ICF
ICF Case Studies
Translating Interventions into Real-life Gains – a Rehab-Cycle Approach

Case 1 | Goal-Setting
Case 2 | Independence
Case 3 | Hope
Case 4 | Health Behaviour
Case 5 | SCI in Older Persons
Case 6 | Recovery After Traumatic SCI
Case 7 | Return-to-Work
Case 8 | Community Reintegration
Case 9 | Sports in Rehabilitation
Case 10 | Walking Recovery
Case 11 | Care in Low and Middle-Resource Countries
Case 12 | SCI and Environmental Accessibility
Case 13 | SCI in Adolescence And Peer Relationships
Case 14 | Bowel And Bladder Management
Case 15 | Psychological Issues And SCI
Case 16 | Time-Related Aspects
Case 17 | Motivation And Rehabilitation
Case 18 | Social Service Support In SCI Rehabilitation
Case 19 | SCI And Chronic Pain Management
Case 20 | Rights For Persons With Disability

You are here: ICF Case Studies/Case Studies

www.icf-casestudies.org

ICF Core Sets

German

Italian

Spanish

Chinese

Japanese

Korean

WHO

http://www.who.int/classifications/icf/en/

ICF Research Branch

http://www.icf-research-branch.org/

Endorsed by

ISPRM 2009
Martin, 26, Switzerland
5 months following traumatic complete paraplegia

“The major problems for me at the moment are finding **wheelchair-accessible housing** and **managing the wheelchair in locations with many obstacles**.”
Patient’s perspective – from patient’s history

Health professional’s perspective – from clinical examination, specific tests, and observations

<table>
<thead>
<tr>
<th>Environmental factors</th>
<th>Personal factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID number:</td>
<td>Long term goal: Community integration</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Date of birth: 13 October 1981</td>
<td>Program goal: Independence in daily activities</td>
</tr>
<tr>
<td>Diagnosis: ICD10: G82.1 Spastic paraplegia, SCI ASIA A, Th7</td>
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</table>

### Patient Perspective

<table>
<thead>
<tr>
<th>Body-Structures/Functions</th>
<th>Activities &amp; Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>My bowel and bladder do not work anymore</td>
<td>I am not able to walk anymore</td>
</tr>
<tr>
<td>Balancing my body is really difficult</td>
<td>Transferring myself is quiet difficult</td>
</tr>
<tr>
<td>My weight loss bothers me</td>
<td>Moving the wheelchair uphill and overcoming barriers is a problem</td>
</tr>
<tr>
<td>I have lost the sense of my body</td>
<td>I am not able to take a shower by myself</td>
</tr>
<tr>
<td>I have pain in my back</td>
<td></td>
</tr>
<tr>
<td>I have spasticity in my legs</td>
<td></td>
</tr>
<tr>
<td>My blood pressure goes down very often</td>
<td></td>
</tr>
<tr>
<td>I have to sleep on my back, and that bothers me</td>
<td></td>
</tr>
</tbody>
</table>

### Health Professional’s Perspective

- From clinical examination and specific test, observations:
  - The compression hosiery helps a little bit
  - The support of my parents and friends is very helpful for me
  - The flat is not wheelchair accessible
  - My willpower is extremely strong

- Environmental factors
  - The compression hosiery helps a little bit
  - The support of my parents and friends is very helpful for me
  - The flat is not wheelchair accessible

- Personal factors
  - My willpower is extremely strong
<table>
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**Patients Perspective**

- My bowel and bladder do not work anymore
- Balancing my body is really difficult
- My weight loss bothers me
- I have lost the sense of my body
- I have pain in my back
- I have spasticity in my legs
- My blood pressure goes down very often
- I have to sleep on my back, and that bothers me

**Activities & Participation**

- I am not able to walk anymore
- Transferring myself is quiet difficult
- Moving the wheelchair uphill and overcoming barriers is a problem
- I am not able to take a shower by myself

**Health Professional Perspective**

- The compression hosiery helps a little bit
- The flat is not wheelchair accessible
- The support of my parents and friends is very helpful for me

**Environmental factors**

- The compression hosiery helps a little bit
- The flat is not wheelchair accessible
- The support of my parents and friends is very helpful for me

**Personal factors**

- My willpower is extremely strong
### ICF Core Set

**- as a guide**

**- as a standard for what to document**

**Excerpt of the Comprehensive ICF Core Set for SCI**


<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>b152</td>
<td>Emotional functions</td>
</tr>
<tr>
<td>b260</td>
<td>Proprioceptive functions</td>
</tr>
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<td>b265</td>
<td>Touch functions</td>
</tr>
<tr>
<td>b280</td>
<td>Sensation of pain</td>
</tr>
<tr>
<td>b415</td>
<td>Blood vessel functions</td>
</tr>
<tr>
<td>b420</td>
<td>Blood pressure functions</td>
</tr>
<tr>
<td>b455</td>
<td>Respiratory muscle functions</td>
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<tr>
<td>b525</td>
<td>Defecation functions</td>
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<tr>
<td>b530</td>
<td>Weight maintenance functions</td>
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<tr>
<td>b550</td>
<td>Thermoregulation functions</td>
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<tr>
<td>b620</td>
<td>Urination function</td>
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<tr>
<td>b7300</td>
<td>Power of isolated muscles and muscle groups</td>
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<tr>
<td>b7303</td>
<td>Power of muscles on lower half of the body</td>
</tr>
<tr>
<td>b7305</td>
<td>Power of muscles of the trunk</td>
</tr>
<tr>
<td>b7353</td>
<td>Tone of muscles of lower half of body</td>
</tr>
<tr>
<td>s810</td>
<td>Structure of areas of skin</td>
</tr>
<tr>
<td>d410</td>
<td>Changing basic body positions</td>
</tr>
<tr>
<td>d415</td>
<td>Maintaining a body position</td>
</tr>
<tr>
<td>d420</td>
<td>Transferring oneself</td>
</tr>
<tr>
<td>d450</td>
<td>Walking</td>
</tr>
<tr>
<td>d455</td>
<td>Moving around</td>
</tr>
<tr>
<td>d460</td>
<td>Moving around in different locations</td>
</tr>
<tr>
<td>d465</td>
<td>Moving around using equipment</td>
</tr>
<tr>
<td>d510</td>
<td>Washing oneself</td>
</tr>
<tr>
<td>d5200</td>
<td>Caring for skin</td>
</tr>
<tr>
<td>d5300</td>
<td>Regulating urination</td>
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<tr>
<td>d5301</td>
<td>Regulating defecation</td>
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<tr>
<td>d540</td>
<td>Dressing</td>
</tr>
<tr>
<td>d570</td>
<td>Looking after one’s health</td>
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<tr>
<td>d850</td>
<td>Remunerative employment</td>
</tr>
<tr>
<td>e115</td>
<td>Products and technology...for personal use in daily living</td>
</tr>
<tr>
<td>e120</td>
<td>Products and technology...for personal...mobility...</td>
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<tr>
<td>e155</td>
<td>Design, construction... of buildings for private use</td>
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<td>e310</td>
<td>Immediate family</td>
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<td>e320</td>
<td>Friends</td>
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<td>e355</td>
<td>Health professionals</td>
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<td>ICF categories</td>
<td>ICF Qualifier</td>
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<tr>
<td>b152 Emotional functions</td>
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<td>b280 Sensation of pain</td>
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<tr>
<td>b420 Blood pressure functions</td>
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<tr>
<td>b710 Mobility of joint functions</td>
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<td>b7300 Power of isolated muscles and muscle groups</td>
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<tr>
<td>b755 Involuntary movement reactions</td>
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<tr>
<td>s810 Structures of areas of skin</td>
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<tr>
<td>d410 Changing basic body positions</td>
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<tr>
<td>d4153 Maintaining a sitting position</td>
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<tr>
<td>d420 Transferring oneself</td>
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<td>d450 Walking</td>
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</tr>
<tr>
<td>d465 Moving around using equipment</td>
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<tr>
<td>d475 Driving</td>
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<td>d510 Washing oneself</td>
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<tr>
<td>d520 Caring for body parts</td>
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<td>d5301 Regulating defecion</td>
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<td>PF Coping with disease</td>
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<tr>
<td>PF Dealing with emotions</td>
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</table>

Global Goal: **Community Integration**

Service-Programme-Goal: **Independence in daily activities**

Cycle goal 1: **Mobility**

Cycle goal 2: **Self-Care**

Cycle goal 3: **Vocational reintegraion**
## Intervention targets

<table>
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<tr>
<th>Body function / structure</th>
<th>ICF</th>
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<td>d475</td>
<td>Driving</td>
</tr>
<tr>
<td>d510</td>
<td>Washing oneself</td>
</tr>
<tr>
<td>d520</td>
<td>Caring for body parts</td>
</tr>
<tr>
<td>d5301</td>
<td>Regulating defecation</td>
</tr>
<tr>
<td>d540</td>
<td>Dressing</td>
</tr>
<tr>
<td>d570</td>
<td>Looking after one's health</td>
</tr>
<tr>
<td>d850</td>
<td>Remunerative employment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental factors</th>
<th>ICF</th>
</tr>
</thead>
<tbody>
<tr>
<td>e115</td>
<td>Products and techn. for use in daily</td>
</tr>
<tr>
<td>e120</td>
<td>Products and techn. for mobility</td>
</tr>
<tr>
<td>e155</td>
<td>Design, construction of buildings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Personal factors</th>
<th>ICF</th>
</tr>
</thead>
<tbody>
<tr>
<td>pf</td>
<td>Coping with disease</td>
</tr>
<tr>
<td>pf</td>
<td>Acceptance of emotions</td>
</tr>
</tbody>
</table>
Assessment

ICF – ICD Assessment Sheet

ICF Categorical Profile

Evaluation

Rehab-Cycle

Assignment

ICF – ICHI Intervention Table

ICF Evaluation Display

Intervention

Assessment

I.C.E.
**Assessment**

**Global Goal:** Community integration

**Service-Programme-Goal:** Independence in daily activities

**Cycle goal 1:** Mobility

**Cycle goal 2:** Self-Care

**Cycle goal 3:** Vocational integration

<table>
<thead>
<tr>
<th>ICF categories</th>
<th>ICF Qualifier</th>
<th>Goal Relation</th>
<th>Goal value</th>
</tr>
</thead>
<tbody>
<tr>
<td>b280 Sensation of pain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b420 Blood pressure functions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b710 Mobility of joint functions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b7300 Power of isolated muscles and muscle groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b7305 Power of muscles of the trunk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b7353 Tone of muscles of lower half of the body</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b755 Involuntary movement reactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>s810 Structures of areas of skin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d410 Changing basic body positions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d4153 Maintaining a sitting position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d420 Transferring oneself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d465 Moving around using equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d475 Driving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d510 Washing oneself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d520 Caring for body parts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d5301 Regulating defecion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d540 Dressing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d570 Looking after one's health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d850 Remunerative employment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>facilitator</th>
<th>barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>e115</td>
<td></td>
</tr>
<tr>
<td>e120</td>
<td></td>
</tr>
<tr>
<td>e155</td>
<td></td>
</tr>
<tr>
<td>PF</td>
<td></td>
</tr>
<tr>
<td>PF</td>
<td></td>
</tr>
</tbody>
</table>

**Facilitator:**
- Products and techn. for pers. use in daily living
- Products and techn. for personal...mobility...
- Design, construction...of buildings for private use

**Barrier:**
- Coping with disease
- Dealing with emotions
Call for Case Studies!

Joint Use of the three WHO Classifications in Clinical Rehabilitation Management

melissa.selb@paraplegie.ch
www.icf-research-branch.org
National Rehabilitation Quality Management

Joint Use of ICD, ICHI, ICF
ISPRM-WHO Collaboration Plan 2015-2017

ICF Implementation
Objective ⇒ To develop national models for the implementation of ICF in routine clinical practice and rehabilitation quality management (RQM) programs

Learning Health System for SCI
Objective ⇒ To develop a framework that facilitates continuous improvement of the lived experience of persons living with SCI worldwide
Motion UEMS PRM
St. Petersburg Sept. 2015

• Based on the mutual recognition agreement between ISPRM and the UEMS Section and Board

• the UEMS PRM Section and Board leads a collaborative European effort under Item 3 of the ISPRM-WHO work plan 2015-2017

• with the goal of the system-wide implementation of the ICF in PRM envisioning its implementation in
  – rehabilitation,
  – all medical specialties and
  – health care at large

• by developing an action plan at a workshop held in Nottwil, Switzerland, January 22 and 23, 2016
Goals

• Model Database
• International Classification System for Service Organization in Health-Related Rehabilitation
• Clinical Assessment Schedule
• Standardized Reporting of Functioning Data with the ICF
• ICF Clinical Tools
Model Database
Envisioned Dimensions

• Context: Person
• Context: Service, Reimbursement
• Context: Clinical Assessment Schedule
• Health and Functioning: ICD, ICF
• Interventions: ICHI
Service Classification

ISPRM DISCUSSION PAPER

Proposing Dimensions for an International Classification System for Service Organization in Health-Related Rehabilitation

Christoph Gutenbrunner, Jerome Bickenbach, Carlotte Kiekens, Thorsten Meyer, Dimitrios Skempes, Boya Nugraha, Matthias Bethge, Gerold Stucki

J Rehabil Med 2015; 47: 809–815
Clinical Assessment Schedule

• **What** to document and report for **whom**, **when** and in **which** context

• ICF Core Sets
  – **ICF Generic Set** (suggested default)
  – **ICF Rehabilitation Set** (suggested default for multidisciplinary rehabilitation)
  – **ICF Core Sets for Health Conditions** and **Vocational Rehabilitation** (suggested: optional)
ICF Generic Set

7 categories - common metric applicable

across world regions
across health conditions
along the continuum of care
over the course of life

Cieza A, Oberhauser C, Bickenbach J, Chatterji S, Stucki G.
Towards a minimal generic set of domains of functioning and health.
<table>
<thead>
<tr>
<th>ICF Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>b130</td>
<td>Energy and drive functions</td>
</tr>
<tr>
<td>b134</td>
<td>Sleep functions</td>
</tr>
<tr>
<td>b152</td>
<td>Emotional functions</td>
</tr>
<tr>
<td>b280</td>
<td>Sensation of pain</td>
</tr>
<tr>
<td>b455</td>
<td>Exercise tolerance functions</td>
</tr>
<tr>
<td>b620</td>
<td>Urination functions</td>
</tr>
<tr>
<td>b640</td>
<td>Sexual functions</td>
</tr>
<tr>
<td>b710</td>
<td>Mobility of joint functions</td>
</tr>
<tr>
<td>b730</td>
<td>Muscle power functions</td>
</tr>
<tr>
<td>d230</td>
<td>Carrying out daily routine</td>
</tr>
<tr>
<td>d240</td>
<td>Handling stress and other psychological demands</td>
</tr>
<tr>
<td>d410</td>
<td>Changing basic body position</td>
</tr>
<tr>
<td>d415</td>
<td>Maintaining a body position</td>
</tr>
<tr>
<td>d420</td>
<td>Transferring oneself</td>
</tr>
<tr>
<td>d450</td>
<td>Walking</td>
</tr>
<tr>
<td>d455</td>
<td>Moving around</td>
</tr>
<tr>
<td>d465</td>
<td>Moving around using equipment</td>
</tr>
<tr>
<td>d470</td>
<td>Using transportation</td>
</tr>
<tr>
<td>d510</td>
<td>Washing oneself</td>
</tr>
<tr>
<td>d520</td>
<td>Caring for body parts</td>
</tr>
<tr>
<td>d530</td>
<td>Toileting</td>
</tr>
<tr>
<td>d540</td>
<td>Dressing</td>
</tr>
<tr>
<td>d550</td>
<td>Eating</td>
</tr>
<tr>
<td>d570</td>
<td>Looking after one’s health</td>
</tr>
<tr>
<td>d640</td>
<td>Doing housework</td>
</tr>
<tr>
<td>d660</td>
<td>Assisting others</td>
</tr>
<tr>
<td>d710</td>
<td>Basic interpersonal interactions</td>
</tr>
<tr>
<td>d770</td>
<td>Intimate relationships</td>
</tr>
<tr>
<td>d850</td>
<td>Remunerative employment</td>
</tr>
<tr>
<td>d920</td>
<td>Recreation and leisure</td>
</tr>
</tbody>
</table>

ICF categories relevant to differentiate levels of functioning across:
→ the general population and people with various health conditions
→ across clinical populations with various health conditions
→ along the continuum of care

Possibility of adding categories e.g. environmental factors or to assess cognition

Manuscript in development:
Prodinger B, Cieza B, Oberhauser C, Bickenbach J, Üstün TB, Chatterji S, Stucki G. The ICF Rehabilitation Set: A minimal generic set of domains for rehabilitation as a health strategy
ICF Core Sets
fractions of the ICF relevant for
specific health conditions and/or
link the ICF to the ICD

Endorsed by
ISPRM 2009

International Classification of Functioning, Disability, and Health

ICF

Endorsed by
ISPRM 2009
ICF Core Sets for the Health and Rehabilitation Services Continuum

Stucki G et al. **ICF-based classification and measurement of functioning**
ICF Core Sets

WHO
http://www.who.int/classifications/icf/en/
ICF Research Branch
http://www.icf-research-branch.org/
Standardized Reporting of Functioning Data
Standardized reporting with the ICF

• ICF Core Sets
  – Standards for what to report or assess (domains)

• ICF Reporting Metrics
  – Standards for how to report (attributes)
Functioning profile of the SwiSCI study population
0=no problem; 1=mild problem; 2=moderate problem; 3=severe problem; 4=complete problem
Cross-walk - World of Instruments

Patient-Reported Outcomes

Clinical tests

RAQoL

INSTRUCTIONS: This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Answer every question by marking the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

EQ-5D

MFI

CES-D

Step 1

Qualitative Mapping

Cieza A. et. al.
Items from patient-oriented instruments can be integrated into interval scales to operationalize categories of the ICF.

*Cieza A. et al.*

*J Clin Epidemiol* 2009; 62: 912-921
There is an infinite number of data collection tools used in the health system.

Mapping of data collection tools to the ICF

- ICF Info Project by the ICF Research Branch
  - Mapping methods
  - Mapping of tools used in the health care system
- UEMS PRM Section and Board Effort
  - Identify the tools used by PRM in Europe today
    - Specific populations (health condition, age etc.)
    - Service context (ICSOR-classification)
ICF Clinical Tools
ICF-based Data Collection Tools

• Expert administered
  – “Clinical Tools”

• Person administered
  – “PRO” – Patient-reported Outcome Instrument
ICF Core Set based PRO’s

• **Inflammatory Bowel Disease - IBD Disability Index**
  Peyrin-Biroulet L, et al.;
  The International Programme to Develop New Indexes for Crohn's Disease (IPNIC) group. Development of the first disability index for inflammatory bowel disease based on the ICF.

• **Ankylosing Spondylitis - ASAS Health Index**
  Kiltz U et. al.;
  Development of a health index in patients with ankylosing spondylitis (ASAS HI): final result of a global initiative based on the ICF guided by ASAS.
  **Ann Rheum Dis.** 2015; 74(5): 830-835
A patient questionnaire to assess and evaluate functioning in vocational rehabilitation settings using the ICF Core Set for Vocational Rehabilitation

- Interviewer-administered and self-reported
- Available in English and German (www.myworq.org)
- Translation/Cross-cultural adaptations ongoing
China Nationwide ICF workshop
Train the trainers

We need a simple tool!
ICF Core Set based Clinical Tools for the Health Care System

- ICF Clinical Generic Tool
  - 7 Categories

- ICF Clinical Rehabilitation Tool
  - 30 Categories

  - CARM–AOSPRM -- SIMFER–UEMS Initiative
    - Expert judgment based on simple intuitive descriptions
    - NRS 0-10 with the anchors - no problem, extreme problem
Assessing Functioning in Routine Clinical Practice

Simple, intuitive descriptions can be used together with a Numeric Rating Scale (NRS) in routine clinical practice.
Transformation of Raw Scores into Standardized Scores

Assessment using rating scale
Calibration using psychometric methods
Reporting based on international standards
## Model Case for Asia – China

**Lead:** CARM  
**Support:** ICF Research Branch  
**Cooperations:** AOSPRM

<table>
<thead>
<tr>
<th>ICF Code</th>
<th>ICF label Chinese</th>
<th>ICF label English</th>
<th>Final description Chinese</th>
<th>Final description English</th>
<th>Description of ICF category as in the ICF</th>
</tr>
</thead>
<tbody>
<tr>
<td>b130</td>
<td>能量和驱力功能</td>
<td>Energy and drive</td>
<td>...为达成一般目标和满足特殊需求而具备的体能和主观能动性</td>
<td>refers to physical fitness and motivation that are needed to satisfy specific needs and general goals</td>
<td>General mental functions of physiological and psychological mechanisms that cause the individual to move towards satisfying specific needs and general goals in a persistent manner.</td>
</tr>
<tr>
<td>b134</td>
<td>睡眠功能</td>
<td>Sleep functions</td>
<td>...能够选择性地进行睡眠并保持适当的时间和质量，满足日常所需</td>
<td>refers to selective sleep, its maintenance and quality that is sufficient for daily living</td>
<td>General mental functions of periodic, reversible and selective physical and mental disengagement from one's immediate environment accompanied by characteristic physiological changes.</td>
</tr>
<tr>
<td>b455</td>
<td>运动耐受功能</td>
<td>Exercise tolerance</td>
<td>...能够持续进行一定时长和强度的运动能力</td>
<td>refers to the ability required for enduring a certain duration or intensity of exercise</td>
<td>Functions related to respiratory and cardiovascular capacity as required for enduring physical exertion.</td>
</tr>
<tr>
<td>b730</td>
<td>肌肉力量功能</td>
<td>Muscle power</td>
<td>...肌肉或肌群收缩产生力量的能力</td>
<td>the ability to generate strength by the contraction of a muscle or muscle groups.</td>
<td>Functions related to the force generated by the contraction of a muscle or muscle groups.</td>
</tr>
<tr>
<td>d530</td>
<td>如厕</td>
<td>Toileting</td>
<td>...以恰当的方式完成大小便和经期护理。</td>
<td>refers to managing urination, defecation, and menstruation in an appropriate way</td>
<td>Planning and carrying out the elimination of human waste (menstruation, urination and defecation), and cleaning oneself afterwards.</td>
</tr>
<tr>
<td>d540</td>
<td>穿着</td>
<td>Dressing</td>
<td>...根据气候和环境选择衣物和鞋袜，并以适当的方式穿脱</td>
<td>refers to choosing, putting on and taking off clothes and footwear appropriately according to specific weather and environmental conditions</td>
<td>Carrying out the coordinated actions and tasks of putting on and taking off clothes and footwear in sequence and in keeping with climatic and social conditions, such as by putting on, adjusting and removing shirts, skirts, blouses, pants, undergarments, saris, kimono, tights, hats, gloves, coats, shoes, boots, sandals and slippers.</td>
</tr>
</tbody>
</table>

**Examples of simple, intuitive description**
# Model Case for Europe – Italy

**Lead:** SIMFER  
**Support:** CARM, ICF Research Branch  
**Cooperations:** UEMS

<table>
<thead>
<tr>
<th>ICF Code</th>
<th>Title Italian</th>
<th>Title English</th>
<th>Final description Italian</th>
<th>Final description English</th>
<th>Description of the category as in the ICF</th>
</tr>
</thead>
<tbody>
<tr>
<td>b130</td>
<td>Funzioni dell’energia e delle pulsioni (G)</td>
<td>Energy and drive functions</td>
<td>Energia psichica e spinta motivazionale per raggiungere obiettivi, soddisfare bisogni e controllare gli impulsi.</td>
<td>Psychological energy and motivational drive to move towards goals, satisfy needs and control impulses</td>
<td>General mental functions of physiological and psychological mechanisms that cause the individual to move towards satisfying specific needs and general goals in a persistent manner</td>
</tr>
<tr>
<td>b710</td>
<td>Funzioni della mobilità dell’articolazione</td>
<td>Mobility of joint functions</td>
<td>l’ampiezza e la facilità di movimento di un’articolazione</td>
<td>Range and ease of movement of a joint</td>
<td>Functions of the range and ease of movement of a joint</td>
</tr>
<tr>
<td>d230</td>
<td>Eseguire la routine quotidiana (G)</td>
<td>Carrying out daily routine</td>
<td>pianificare, gestire e completare le attività rutinarie della vita quotidiana</td>
<td>Planning, managing and completing routine daily life activities</td>
<td>Carrying out simple or complex and coordinated actions in order to plan, manage and complete the requirements of day-to-day procedures or duties, such as budgeting time and making plans for separate activities throughout the day</td>
</tr>
<tr>
<td>d420</td>
<td>Trasferirsi</td>
<td>Transferring oneself</td>
<td>Muoversi da una superficie d'appoggio ad un'altra mantenendo sempre la stessa posizione corporea.</td>
<td>Moving from one surface to another while maintaining the same body position</td>
<td>Moving from one surface to another, such as sliding along a bench or moving from a bed to a chair, without changing body position</td>
</tr>
<tr>
<td>d530</td>
<td>Bisogni corporali</td>
<td>Toileting</td>
<td>gestione della minzione, della defecazione e delle mestruazioni incluso il pulirsi</td>
<td>Management of urination, defecation and menstruation including cleaning oneself</td>
<td>Planning and carrying out the elimination of human waste (menstruation, urination and defecation), and cleaning oneself afterwards.</td>
</tr>
</tbody>
</table>

*Examples of simple, intuitive description (pre-final English version)*
“To successfully apply the **ICF** in *Rehabilitation* we need to implement the **ICF** in the *Health Care System*”

Prof. Jianan Li, MD
President ISPRM
Nanjing, August 2014
Towards the System-wide Implementation of the ICF in Rehabilitation in China

Gerold Stucki, QIU Zhuo-ying, LI Jian-an, LI Jian-jun, WU Xian-guang
Lucerne, Switzerland
Additional Slides
Standards
“There are medical and scientific benefits that cannot be obtained without standardizing and coding medical record data.”

Chute C.
Coding Patient Information, Reimbursement for Care, and the ICD Transition
• Application of statistical graphics to facilitate selection of health status measures for clinical practice and evaluative research.
• G Stucki, Matthew H Liang, S Stucki, JN Katz, RA Lew
• Clinical Rheumatology
• Impact Factor: 1.7). 02/1999; 18(2):101-5. DOI: 10.1007/s100670050065 Source: Pubmed
Health Information Standards Populations

• Comparability – Monitoring & Research
  – Along the continuum of care
  – Across health conditions
  – Across health systems
  – Over time (legacy data)
Health Information Standards
Populations

• Comparability
  – Along the continuum of care
  – Across health conditions
  – Across health systems
  – Over time (legacy data)
Health Information Standards

• Basis for electronic health records
• Fundamental to the application of “smart systems”
Value of standardized reporting

• Monitoring clinical pathways
• Transparency within and across interdisciplinary teams and multiple care settings
• Fundamental to the application of smarter systems

“There are medical and scientific benefits that cannot be obtained without standardizing and coding medical record data.”

ICHI
ICHI Alpha Content
Medical/Surgical

ICD-9-CM* the base: public domain, ICPM related
Systematic updating and expansion based on national classifications
Editorial review
Ongoing review by WHO-FIC experts

*ICD-9 Clinical Modification (ICD-9-CM) is based on WHO's 9th Revision of the International Classification of Diseases (ICD-9). ICD-9-CM is the official system of assigning codes to diagnoses and procedures associated with hospital utilization in the United States.
ICHI Alpha Content : Functioning

No appropriate starting base

Decision to use ICF Body Functions, Activity and Participation and Environmental Factors domains as base for Targets

Progressive development and review, of axes and content

Nursing interventions have been mapped, and ICHI content expanded

Informal review by a range of individuals/groups in 2015; result: substantial updates and expansion
ICHIMs Alpha 2015: ICHI Tabular List

- Interventions on Body Systems and Functions
  - Chapters arranged by Body system. Each includes interventions on relevant Body functions
- Interventions on Activities and Participation Domains
  - Chapters arranged by ICF A&P chapters
- Interventions to Improve the Environment and Health-related Behaviour
  - Chapters on Interventions on the environment and on health behaviours

Options for the future

• Identify and engage with interested parties
  – Organizations in collaboration with WHO

• Systematic review of content

• Specific use proposals
  – WHO: Disability Action Plan, Rehabilitation guidelines
  – Specific applications, perhaps with development of more detailed content
Health Intervention

1. Target

2. Action

3. Means