Development, implementation and use-case driven modernization of the International Classification of Functioning, Disability and Health (ICF)

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World Health Organization
Overview

- **Where do we come from?**
  - History (genesis) of ICF and disability/functioning concept

- **Where are we?**
  - Current status and use of ICF

- **Where are we going?**
  - Outlook on further development and use of ICD-11
## Disability vs. Health problem

<table>
<thead>
<tr>
<th></th>
<th>DISABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Health</td>
<td>No</td>
</tr>
<tr>
<td>Problem</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Case 1: Blind person
Case 2: Person with flu – cannot work for 10 days
Case 3: Person with epilepsy – not allowed to drive
Case 4: HIV positive person (a-symptomatic) – work denied
Case 5: Coronary Infarct - cannot walk +200 meters for 3 month
Case 6: Paraplegic person - using wheelchair to move around
Case 7: Ex-Depression patient – difficulties in engaging in community activities
Evolution of the disability category

The disabled include “the sick, insane, defectives, aged and infirm”
English Poor Law 1834, 1601, 1388

A disabled person is someone who “because of his physical or mental condition is neither in a position to perform regularly his previous work nor to earn the minimum invalidity pension through other work corresponding to his strengths and capabilities and existing job opportunities”. German Invalidity and Pension Law 1889

Medical determination of disability by applying the clinical concept of impairment 20th century

"Disability refers to the physical or organic handicap of a person due to natural deformity or deficient functioning of any limb resulting from accident, disease, etc. It includes blind, deaf and dumb, crippled, mentally retarded and insane."
Disability definition used in 1981 census
Evolution of the disability category

“Persons with disabilities include those who have long-term physical, mental, intellectual, or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.”

"In the context of health. Disability is an umbrella term for impairments, activity limitations and participation restrictions. It denotes the negative aspects of the interaction between an individual (with a health condition) and that individual’s contextual factors (environmental and personal factors)."
Evolution of the health category

19th Century and before
  Health = absence of death & disease
  Classification of Causes of Death (ICD)

20th Century
  WHO Constitutional Definition: "a state of complete mental and social well-being not merely the absence of disease or infirmity."

  BUT operationalisation focused on
    • Mortality & morbidity (ICD)
    • Consequences of disease (ICIDH 1980)

21st Century
  Health operationalised with ICF
  ICF classifies health and health related domains
International Classification of Impairments, Disabilities, and Handicaps (ICIDH)

- Conceptual model of disablement in the ICIDH disentangled disability from disease
- Published by WHO in 1980 for field testing
Development of the International Classification of Functioning, Disability and Health (ICF)

- **Pre-Alpha Draft Development 1990-1995**
  - Needs and scoping assessment (update vs. revision)
  - Setting up governance structure (WHO CC NCHS, Canada, France, Nordic Centre, Dutch; DPI, Tasks Forces)

- **Alpha Drafting and testing 1996**
  - Development of main components: Impairment, Disability, Social Participation, Environmental Factors
  - Testing via In-house and expert consultation

- **Beta 1 Drafting and testing 1997 – 1999**
  - Empirical testing (CAR study) in 15 countries: Translation/linguistic analysis, Basic questions, Item Evaluation, Concept mapping, Pile sorting, Focus groups

- **Beta 2 Drafting and testing 1999-2000**
  - Uniform qualifier for severity provided, Use of blocks, and residuals throughout, EF chapters reordered
  - Field testing: Translation and linguistic evaluation, Basic Questions, Feasibility and Reliability

- **Pre-Final, Final draft, WHA approval 2000-2001**
  - Revision Meeting with WHO Member States
  - Change in the name of the classification to “International Classification of Functioning, Disability and Health”
Historical significance of ICF
Conversion point for Health and Disability

- Health and Disability categories have different origins and have taken different evolutionary lines.
- ICF has brought the two lines in consilience.
- Non-fatal Health Outcomes = DISABILITY = Health State less than Perfect Health.
ICF **Definition of Disability**

"In the context of health. Disability is an umbrella term for **impairments**, **activity limitations and participation restrictions**. It denotes the negative aspects of the **interaction** between an individual (with a health condition) and that individual’s **contextual factors** (environmental and personal factors)."

CRPD **Definition of Persons with Disability**

“Persons with disabilities include those who have **long-term** physical, mental, intellectual, or sensory **impairments** which in **interaction with various barriers** may hinder their full and effective participation in society on an equal basis with others.”
Monitoring CRPD

- Article 9 Accessibility
- Article 19 Living independently and being included in the community
- Article 20 Personal mobility
- Article 21 Freedom of expression and opinion, and access to information
- Article 23 Respect for home and the family
- Article 24 Education
- Article 25 Health
- Article 26 Habilitation and rehabilitation
- Article 27 Work and employment
- Article 28 Adequate standard of living and social protection
- Article 29 Participation in political and public life
- Article 30 Participation in cultural life, recreation, leisure and sport

Data needed on ICF activity & participation domains & environmental factors
ICF

What is it?

– Hierarchical list of categories that classify the universe of human functioning in a mutually exclusive and jointly exhaustive manner.
– Conceptual model for understanding health and disability

Why do we need it?

Provides a common language and understanding
– Definition of disability
– Definition of categories (e.g. walking)

Enables counting & reporting in an efficient and comparable manner
– Transform complex and long text into alphanumeric codes
– Data aggregation and comparability
The structure and codes of the classification

ICF

Functioning and Disability

Body functions and Structures

Body functions

Body structures

Activities and Participation

Contextual factors

Environmental factors

Personal factors

Body functions

Body structures

d1

d2

d3

d4

d5

d6

d7

d8

d9 Community, social and civic life

d910

d920 Recreation and leisure

Engaging in games with rules or unstructured or unorganized games and spontaneous recreation, such as playing chess or cards or children’s play

d9200 Play

d930

d940

d950

d998

d999

Environmental factors

Personal factors
ICF conceptual model

Functioning/Disability is **UNIVERSAL** not minority
not a dichotomy (black/white) it is a placed on **CONTINUUM**

**Seeing Functions**

- **10/20**
  - Mild-Moderate vision impairment:
    - Needs eye glasses, contact lenses…

- **2/20**
  - Severe vision impairment:
    - Needs operation

- **1/20**
  - Complete vision impairment (blind):
    - Needs assistance – pension, device, assistant
    - environmental modifications

**Who is disabled?**

[Diagram showing seeing functions and their corresponding impairments]
ICF conceptual model

Functioning is **MULTI-DIMENSIONAL** not uni-dimensional
ICF conceptual model

Functioning/Disability: Context inclusive not person alone

Medical Report & Investigation Request

- **Employee Name:** .........................

<table>
<thead>
<tr>
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<tr>
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<tr>
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<td>O.F.No</td>
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<td>Nationality:</td>
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**Clinical Diagnosis & Examination:**

She was in special needs school.
Significant family depends on her family in managing basic life needs.

**Diagnosis:**

*Disability:  Intellectual Disability*

<table>
<thead>
<tr>
<th>No</th>
<th>learning</th>
<th>intellectual</th>
<th>motor</th>
<th>physical</th>
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**Severity:**

Mild - Moderate - Severe - Unclassified
ICF conceptual model: Functioning is not only about what a person *can’t do* but also what the person *can do*
Capturing the impact of health conditions in terms of functioning is NOT new….

- **Generic functioning measures**
  - Activity of daily living (ADL) scales
    - Barthel index (1955)
    - Katz index (1957)
  - Instrumental Activities of Daily Living (IADL) scales
    - Fries’s Health Assessment Questionnaire (HAQ) (1980)
    - Granger’s Functional Independence Measure (FIM) (1987)

- **Condition-specific functioning instruments** e.g. Parkinson
  - Parkinson: Webster scale
  - United Parkinson disease rating scale
  - Self assessment Parkinson’s disease Disability scale
  - Parkinson symptom Diary
  - Parkinson Disease Questionnaire (PDQ-39)

**BUT they**

- often do not capture functioning as multidimensional experience
- remain in a DATA SILO because they are not derived or linked and coded with an international data standard and conceptual framework.
In health and social service settings ICF allows to ....

- identify functioning problems & potentials
- set treatment goals & plan interventions
- monitor & evaluate change over time
- determine treatment/care needs
ICF: What difference does it make?
Identify and compare
where the problem is and where the solution lies

<table>
<thead>
<tr>
<th>Body Functions &amp; Structures</th>
<th>Activities &amp; Participation</th>
<th>Environmental Factors</th>
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<tbody>
<tr>
<td>IMPAIRMENTS</td>
<td>ACTIVITY LIMITATIONS PARTICIPATION RESTRICTION</td>
<td>Barriers &amp; Facilitators</td>
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<td>✓ Pain</td>
<td>✓ Walking</td>
<td>✓ Buildings</td>
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<tr>
<td>✓ Seeing</td>
<td>✓ Communication</td>
<td>✓ Work equipment</td>
</tr>
<tr>
<td>✓ Breathing</td>
<td>✓ Washing</td>
<td>✓ Attitudes</td>
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<tr>
<td>✓ Heart function</td>
<td>✓ Domestic responsibilities</td>
<td>✓ Support &amp; Relationships</td>
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<tr>
<td><strong>Intervention:</strong></td>
<td>✓ Work &amp; Education</td>
<td><strong>Intervention:</strong></td>
</tr>
<tr>
<td>✓ Medication</td>
<td>✓ Community life</td>
<td>✓ Ramps</td>
</tr>
<tr>
<td>✓ Eye glasses</td>
<td></td>
<td>✓ Workplace modification</td>
</tr>
<tr>
<td>✓ Surgery</td>
<td></td>
<td>✓ Destigma. Campaign</td>
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<tr>
<td>✓ Functional stimulation</td>
<td></td>
<td></td>
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<tr>
<td>devices</td>
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</tr>
</tbody>
</table>

**ACTIVITIES LIMITATIONS PARTICIPATION RESTRICTION**

- Walking
- Communication
- Washing
- Domestic responsibilities
- Work & Education
- Community life

**Intervention:**
- Prostheses
- Wheelchair
- Rehab
- Exercise
Documentation of functioning information at in health care settings

Physician\textsuperscript{\textdagger} diagnosis & interventions

Nurses\textsuperscript{\textdagger} diagnosis & interventions

Physiotherapist diagnosis & interventions

Social worker SW Interventions

Occupational therapists diagnosis & interventions

Patient

Physician documentation

Nursing documentation

PT documentation

OT documentation

World Health Organization

ICF | Klasifikon 2019 | 22-23 October 2019, Praha, Czech Republic
ICF provides a common language to **improve communication** across the continuum of care.
REHABILITATION 2030
a call for action

1. Creating strong leadership and political support for rehabilitation at sub-national, national and global levels.
2. Strengthening rehabilitation planning and implementation at national and sub-national levels.
3. Improving integration of rehabilitation into the health sector to effectively and efficiently meet population needs.
5. Building comprehensive rehabilitation service delivery models to progressively achieve equitable access to quality services, including assistive products, for all the population.
6. Developing a strong multidisciplinary rehabilitation workforce that is suitable for country context and promoting rehabilitation concepts across all health workforce education.
7. Expanding financing for rehabilitation through appropriate mechanisms.

Health information systems and rehabilitation

Key messages

- Health information systems (HIS) underpin decision-making in health policy, management and clinical care through the collection, standardization, coding and management of information relevant to indicators of health status, determinants of health, and health systems.
- Improving the capacity of national HIS to collect reliable and comprehensive information is crucial for health systems strengthening, both nationally and internationally.
- WHO has developed a framework and standards for national HIS and a global reference list of 100 core health indicators to support countries to strengthen their HIS. There are opportunities to further expand this framework to capture the information needs of rehabilitation.
- Including information on functioning in HIS is essential for strengthening rehabilitation in the health system. Functioning, as introduced in WHO’s International Classification of Functioning, Disability and Health (ICF), refers to the impact of health conditions (injuries, diseases, ageing) on a person’s experience in every aspect of his/her life.
- As well as information on functioning, systems level information about all aspects of the delivery and financing of rehabilitation services is necessary. This includes inputs (e.g. policy, financing, human resources and infrastructure) to, and outputs (e.g. service availability and quality) and outcomes (e.g. service coverage and utilization) of rehabilitation.
- The WHO meeting on Rehabilitation 2030: A call for action calls for stakeholders to enhance HIS by including system level rehabilitation data and information on functioning, utilizing the ICF.
Disability Evaluation process

- **Purpose:** decide about eligibility of an individual for to receive benefits or services

- **Scope varies** according to the states disability policy:
  - health & rehab services incl. access to assistive technology
  - social or income security & pensions
  - health and social insurance benefits
  - short and long term sick leaves
  - general social benefits incl. income support and access to transportation, housing or education services,
  - employment-related benefits incl. workers’ compensation, vocational rehabilitation

- **Disability assessment** is an essential component in the disability evaluation process
Impairment approach in Disability Assessment: ‘Bareme’ Assessment (1638-1703)

<table>
<thead>
<tr>
<th>Hand Amputation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thumb, including metacarpal</td>
<td>20.</td>
</tr>
<tr>
<td>Thumb, both phalanges</td>
<td>15.</td>
</tr>
<tr>
<td>Thumb, one phalanx</td>
<td>10.</td>
</tr>
<tr>
<td>Finger, index</td>
<td>5.</td>
</tr>
<tr>
<td>Finger, index at P.I.P.</td>
<td>4.</td>
</tr>
<tr>
<td>Finger, index at distal</td>
<td>2.</td>
</tr>
<tr>
<td>Finger, middle</td>
<td>4.</td>
</tr>
<tr>
<td>Finger, middle at P.I.P.</td>
<td>3.2</td>
</tr>
<tr>
<td>Finger, middle at distal</td>
<td>1.6</td>
</tr>
<tr>
<td>Finger, ring</td>
<td>3.</td>
</tr>
<tr>
<td>Finger, ring at P.I.P.</td>
<td>2.4</td>
</tr>
<tr>
<td>Finger, ring at distal</td>
<td>1.2</td>
</tr>
<tr>
<td>Finger, little</td>
<td>2.</td>
</tr>
<tr>
<td>Finger, little at P.I.P.</td>
<td>1.6</td>
</tr>
<tr>
<td>Finger, little at distal</td>
<td>.8</td>
</tr>
</tbody>
</table>
AMA Guidelines for the Evaluation of Permanent Impairments
Problems with “traditional” Disability Assessment approaches

- **Indirect assessment of functioning:** Inferences are made from
  - health condition & impairment type/degree -> whole person disability
  - health condition & impairment type/degree -> ADLs/IADLs
  - Specific ADLs/IADLs -> work capacity

- **Comparability problems:**
  - how to quantitatively rate loss of limb with depression in terms of disability?
  - same impairment may have different impacts in terms persons functioning

- **Socially wasteful and in-efficient**
  - Focus on impairments / basic activities ignores what can be changed to making working feasible

- **Unfair to the individual**
  - Focus on deficits (body and activity level) ignores assets that can be developed

- **Overall too costly:**
  - disputed results, wasted working capacity, increased cost of benefits when employment is possible, inflexibility

- **Assessment ignores the impact of environmental factors (barriers/facilitators) on the persons functioning**

- **No linkage with classification:**
  - no or limited possibilities to compare and aggregate data

- **Validity, reliability, transparency and standardization of the assessment are often compromised by policy objectives or legal rules that govern the evaluation procedure**
ICF in Social Medicine
Country Example: France

- The legal frame of the French disability policy is the **2005-102 Act “For equal rights and opportunities, participation and citizenship of persons with disabilities”**, based on two major principles: accessibility and disabled persons’ support needs.

- In each of the 101 French administrative territorial entities (departments), the authority competent to carry out the disability policy is the ‘**Departmental House for Disabled Persons’** (Maison Départementale des Personnes Handicapées).

In each Department two bodies are operating:

- a **multidisciplinary team** (including medical doctors, occupational therapists, psychologists, social workers,...) in charge of assessing the difficulties the person faces and his/her needs;

- an executive board, the ‘**Commission for the rights and autonomy of persons with disabilities’**, taking all decisions related to the provision of aids on the basis of the assessment. The network of local authorities is monitored by a national central authority (National fund of solidarity for autonomy – Caisse Nationale de Solidarité pour l’Autonomie, CNSA) in charge of the implementation of the disability policy throughout the country.

- In order to promote a uniform application of the law and assessment of the needs of persons the central authority has provided the local assessment teams with a **multidimensional assessment guide (called ‘GEVA’)**.
ICF in Social Medicine
Country Example: France (2)

- **Multidimensional assessment guide (called ‘GEVA’)** entails 7 sections (touching upon the various components of a person’s situation: social, financial, medical, etc.). The basic component related to ‘activities and functional capacities’ is composed of 8 ICF A&P domains and includes **142 ICF items**.

- Each item is **linked to a series of 5 environmental factors** (human environment, technical aids, animal aids, housing, services) assessed in terms of facilitator or obstacle/lack of).

- Thus each A&P item can be assessed (using the ICF 5 **grades generic scale**) in terms of Capacity and Performance.

- An additional qualifier of performance (activity performed alone; performed partially with human assistance; performed with continued assistance; not performed) allows to assess what performance would require in terms of environmental facilitators and support.
ICF in Social Medicine
Country Example: Taiwan

Procedure of Disability Eligibility

1. Needs assessment
2. Determination of the eligibility qualification
3. To determine necessary companion person, mobility restriction, transportation for disabilities
Local social bureau

Hospital

Medical Assessment

Functional assessment
d Activity & Participation
e Environmental

Medical examination

b Body function

Medical assessment report

Appraisal by local health bureau

District office

Application

Expressive needs

Further needs or other assessments by a team to provide home-based care, assistive technology, disability pension and vocational training etc.
ICF in Social Medicine
Country Example: Argentina

- Enfoque bio-psico-social
- Equipo evaluador Interdisciplinario
- Normativas Específicas:
  - listas cortas por condición de salud
  - reglas de codificación generales y específicas por componente
  - Calibración de calificadores
  - Concepto: líneas de corte
**ICF in Social Medicine**  
**Country Example: Cyprus - Reform of Disability Assessment System**

<table>
<thead>
<tr>
<th>Situation <strong>BEFORE</strong> reform</th>
<th>Situation <strong>AFTER</strong> reform</th>
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</thead>
<tbody>
<tr>
<td>- Absence of clinical &amp; functional assessment</td>
<td>- A home for ICF “Assessment Center”</td>
</tr>
<tr>
<td>- Multiple clinical assessments</td>
<td>- Assessment mechanism stages: Preparation (File / vignette, assessment (med/Func) &amp; completion</td>
</tr>
<tr>
<td>- Absence of any protocols</td>
<td>- Six Focused protocols for disability assessment</td>
</tr>
<tr>
<td>- Delays between the application &amp; the decision</td>
<td>- Medical assessment by disability physicians (30 min)</td>
</tr>
<tr>
<td>- Decision only without rehabilitation plan</td>
<td>- Functional assessment by rehabilitators (80 min)</td>
</tr>
<tr>
<td>- Weak legislative platform</td>
<td>- Qualifiers Mechanism</td>
</tr>
<tr>
<td>- Lack of data for disability population</td>
<td>- Final Report</td>
</tr>
<tr>
<td>- Lack for structuring policies</td>
<td>- Medical &amp; Rehabilitative equipment</td>
</tr>
</tbody>
</table>
ICF in Social Medicine
Country example: Switzerland- ICF-based Eligibility Procedure for Education
Reasons for using ICF in social medicine

- ICF as an optimal reporting structure provides a state of the art model of disability, structure and dimensions of what to measure, comprehensive platform to monitor UN-CRPD implementation, Rosetta stone for functioning and disability information.

- ICF as the basis for process legitimacy: Fairness, Transparency, Impartiality, Comparability.
Lessons Learned from using ICF

It entails a process of institutional and policy reform which requires:

- formal regulation and legislation
- Implementation through institutional and organizational structures
- involvement of a cadre of professionals implementing the rules and in response to legitimate interests of multiple stakeholders
- management of a technical and political process
- consideration of financial implication (i.e. disability assessment is an important fiscal “gatekeeper”)
- careful planning and persistent implementation
Who is assessing?

- As disability assessors MDs have different roles (therapist vs neutral expert) and objectives (help and heal vs. make informed decision in a admin/legal context)

- MDs vs interdisciplinary teams

- Doctors do not learn disability evaluation
  - No Education in Medical Schools
  - Self-education by a brochure, which is open to the public
  - No studies or investigations on the disability evaluation schemes
Functioning information & ICF & in reimbursement (case-mix) systems

Clinical homogenous
i.e. patients with treatment need

Economic homogenous
i.e. patients similar costs
Functioning information & ICF & in reimbursement (case-mix) systems (cont.)

Clinical classification and predictive indicators

References:
Dunstan et al. 1996; Sahadevan et al. 2004; Covinsky et al. 1997; Chuang et al. 2003; Pilotto et al. 2011

How much will someone with this profile cost the health system next year?

How much will this population cost the health system next year?
Functioning information & ICF & in reimbursement (case-mix) systems (cont.)

Clinical homogenous
i.e. patients with treatment need

Outcome homogenous
i.e. patients similar improvement in functioning

Economic homogenous
i.e. patients similar costs
Use of ICF in Health and Disability Statistics

Data collection
- Multi-Country Studies: Global Study on Ageing (SAGE), World Mental Health Survey (WMHS), World Health Survey (WHS), WHO Multi-Country Survey Study (MCSS)
- National surveys

Data compilation and analysis
- WHO World Report on Disability: ICF based disability prevalence and multi-domain functioning levels
- EU funded Project on Measurement of Health and Disability in Europe (MHADIE)
- Australian Data Dictionary

Module & question set development
- WHO Model Disability Survey (MDS)
- EUROSTAT Survey Module on “Disability and Social Integration"
- Washington Group City Group on Disability Statistics
Advantages of using an ICF based approach in Health and Disability Statistics

- **Impairment based: "counting the disabled"**
  - Numbers are **limited** in terms of accuracy and comparability
    - Certain groups are missed
  - Data sets have **limited utility**
    - Fixed prevalence rate data set cannot be used for further exploration
    - Statistics do not indicate the service need

- **Based on ICF: Multidimensional, universal & continuum**
  - Numbers are **more accurate** and comparable
    - Include different life domains
    - Capture multiple groups of disability - irrespective of cause
  - Data sets have **more utility**
    - Measurement can be tailored to suit the purpose
    - Choices for threshold can be explicitly stated at point of analysis (posteriori definition)
    - Multiple and scalable prevalence rates same data set can be used for various purposes
    - Can be linked with health & disability surveys
    - Integration and aggregation of population and service-based data sources
Counting disability in the WDR
Achievements & Findings

- Disability is a major public health issue
  - 1,000,000,000 people with disabilities (15% of global population)
  - 110-190 million (2%) have severe or extreme difficulties in functioning
  - First global disability prevalence rate after 40 years

- Comparable measurement of disability
  - using data standards -> ICF

- To improve the quality & utility of national reported prevalence data countries need to measure
  - functioning levels at multiple domains
  - use a comprehensive measures
Disability data is multidimensional...

- Information about functioning of basic body parts or organs **IMPAIRMENT**
  
  +

- Information about capacity of person to do basic or complex actions **ACTIVITY**
  
  +

- Information about extent of person’s participation in society **PARTICIPATION**
  
  +

- Information about the impact of person’s **ENVIRONMENT**

...but:

Only 70 out of 193 countries surveyed in 2011 collect A/P information in census and disability surveys

WRD 2011
Counting disability in the WDR

Triangulation of three data sources:
• country reported data
• GBD estimates
• World Health Surveys

• country reported data from LMIC is under-estimating disability

• Variation of prevalence data
Order & wording of Disability survey and census questions

Examples

"God forbid someone should have a disability, but if they do are they: blind, deaf/dumb, crippled, mentally retarded/insane, multiple, other?"

"Are you blind?"
If Yes, do you have any difficulty with the following activities...?"

How did they become disabled?"

"Do you need someone to help with, or be with them for, self care activities?"

"Do you have any difficulty with the following activities...?"
If Yes, are you blind?"

Do you need someone to help with, or be with them for, self care activities?
For example: doing everyday activities such as eating, showering, dressing or toileting". 
Counting and Reporting starts with a code.

Mortality

Morbidity

Functioning / Disability

Trends in cause-of-death reporting by ICD revision

<table>
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<tr>
<th>Reference year of data</th>
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<th>KCD-9</th>
<th>KCD-10</th>
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Technical appendix A
Disease & Disorders are ICD coded...

Clinical Anamnesis

Diagnoses relevant for Rehabilitation

Quelle: Dr Wolfgang Seger
Functioning profiles are often “only” documented with ICF
ICF Implementation

- Use of ICF as *conceptual* framework
- Use of ICF categories and definitions for *documentation*
- **Coding** with ICF and *reporting* of ICF coded data
The need for ICF coded functioning data will increase because ...

- **Epi transition**
  - Aging & Super-aging societies
  - Increased life expectancies & comorbidities and
  - Decline in infectious disease, raise in NCDs
  - Prolonged and alternating functioning
  - Personalised Medicine (Genetics & EF interaction)

- **Big data, technology & predictive analytics allows**
  - to understand comorbidities (pattern, drivers, causal mechanisms)
  - to identify an individual’s disease and functioning trajectory
  - to know where on the trajectory an individual’s is
  - to change an individual’s disease and functioning trajectories
Problems with (BIG) data in health

- Are international data standards used? If yes, how?
- Integration & interoperability
- Governance issues
  - Transparency
  - Open source vs. closed source
  - Privacy & Ethics
- Others
To respond to this needs ICF has to be modernized

The Family – integrated health information

- Needed ICF developments
  - Foundation layer
  - Index terms
  - Unique Identifiers
  - Tooling environment (e.g. coding tool, APIs)

- Reality 1: (individual detail)
  - Free Text (Diagnostic information)
  - ICD-11 & ICF index terms
  - ICD-11 & ICF Categories

- Reality 2: (public health, clinical, administrative needs)
Why a supplementary section for functioning in ICD-11

- Using the Functioning section in ICD-11
  - Option 1: **Structured assessment** with WHO-DAS 2.0 allowing to generate an overall and domain specific functioning score
  - Option 2: **Selection of generic functioning domains** allowing to generate a functioning profile

- **Enable**
  - **joint use** of ICD & ICF (code once – use multiple times)
  - **coding** of functioning data & **reporting** of coded
  - **standardization** & international **comparability** of functioning data using global public goods

- **Entry point** ICD users to understand the “value proposition” of ICF - **not recreating ICF in ICD**.
# International Classification of Health Interventions (ICHI) (in development)

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### Extension codes (Use when needed)

| A Therapeutic products        | KBO.JK.AA – Appendicectomy |
| B Assistive products          | KBO - Appendix            |
| C Medicaments                 | JK - Excision, total      |
| D Telehealth                  | AA - Open approach        |
| E Other (optional) codes      |                          |
Developing ICF index

- Itemization of exiting ICF inclusion and exclusion terms

- Identify and analyze resources
  - Raw functioning terms from “real life” records e.g.
    - The patient ambulates with front wheeled walker for 300ft
    - 'pulls', 'move', 'straighten', 'pushed', 'pushing', 'pulled', 'push', 'lift', 'pulling' -> frequency of
  - Standardized vocabularies
  - Linguistic and ontological resources

- Development of ICF tooling environments

- Develop and validate the ICF index terms
Thank you