The International Classification of Functioning, Disability and Health (ICF) - Standardizing patient-centred assessment

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After this workshop, you will be able to:

- explain what functioning and disability means in the context of the bio-psycho-social model of the ICF
- identify the components of the ICF and corresponding terminology
- describe how the ICF and ICF Core Sets can be applied in clinical practice
Understanding Functioning and Disability
Grandma Priya had a stroke

**Stroke:**
“rapid loss of brain function due to disturbance in the blood supply to the brain. This can be due to ischemia (lack of blood flow) caused by blockage (thrombosis, arterial embolism), or a hemorrhage...

...might result in an inability to move one or more limbs on one side of the body, inability to understand or formulate speech, or an inability to see one side of the visual field.”

Grandma Priya had a stroke

**ICD: G46.3; G46.4; I64**

**G46.3** Brain stem stroke syndrome (I60-I67+)
Incl.:
Syndrome:
• Benedikt
• Claude
• Foville
• Millard-Gubler
• Wallenberg
• Weber

**G46.4** Cerebellar stroke syndrome (I60-I67+)

**I64 Stroke, not specified as haemorrhage or infarction**
Incl.: Cerebrovascular accident NOS
Excl.: sequelae of stroke (I69.4)
Grandma Priya had a stroke

(ICD: G46.3; G46.4; I64)

Figure 22: Age-standardized stroke prevalence rates for men and women in 17 WHO regions, the GBD2000

Truelsen et al. The global burden of cerebrovascular disease. PDF take from WHO website
Grandma Priya had a stroke

However:

What **problems and needs** is **Grandma Priya dealing with** in relation to her functioning on an everyday basis?
The bio-medical model of disease

Health Condition
(disease, trauma)

Functioning
The bio-medical model of disease

Stroke I64
The bio-medical model of disease

Health Condition (disease, trauma)

Functioning

Environmental Factors

Personal Factors
Bio-psycho-social model of functioning and disability

Stroke I64

Environmental Factors

Personal Factors
International Classification of Functioning, Disability and Health

Approved by the World Health Assembly in May 2001
Bio-psycho-social model of functioning and disability

Health Condition (disease, trauma)

Body Functions
Body Structures

Functioning

Activities

Participation

Environmental Factors

Personal Factors

ICF Research Branch

LMU

Ludwig-Maximilians-Universität München
Functioning and disability is reflected at the levels of...

**Participation**
Crafts and socializing

**Activities**
Hand and arm use

**Body Functions**
Sensation of pain

**Body Structures**
Upper extremity
Shoulder region

...in interaction with the environment
Pain medication,
Provision of health services,
Support and relationships
The definitions of the components of the ICF model with the example of Mrs. Priya K.
A **health condition** is an umbrella term for disease, disorder, injury or trauma.

A health condition may also include other circumstances, such as ageing, stress, pregnancy, congenital anomaly, or genetic predisposition.

Health conditions may be coded using the ICD-10.
“I was walking with my daughter in the park and suddenly got a severe headache. At home the headache became worse. An hour later I couldn’t move my right arm and then the whole right side of my body. Shortly afterwards I was unable to speak properly. I got really scared, and my daughter said that I became really confused and started screaming until I collapsed. That was 6 months ago. My right arm and hand are still weak and the right side of my face droops a little. Worse of all is the shoulder pain.”

Bio-psycho-social model of functioning and disability

I64 Stroke

Body functions/Body structures

Activities

Participation

Environmental factors

Personal factors

ICF Research Branch
**Body functions** are physiological functions of body systems, including psychological functions.

**Body structures** are anatomical parts of the body, such as organs, limbs and their components.

**Impairments** are problems in body functions or structure such as a significant deviation or loss.

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![Diagram](image_url)

**Bio-psycho-social model of functioning and disability**

Body functions/Body structures → Activities → Participation

Environmental factors → Personal factors

Stroke

I64
Mrs. K: “Since my stroke I get irritated more quickly than I used to. I am also tired all the time, since the problems in my right side and pain take a lot out of me and I do not sleep well.

Doctor: “Beside Mrs. K’s reduced muscle power in her right upper extremity, specifically arm and hand, she is experiencing moderate to severe pain in her right shoulder, largely due to reduced mobility of her arm and hand and stiffness in the muscles of the upper extremity.”
**Activity** is the execution of a task or action by an individual.

**Participation** is involvement in a life situation.

**Activity limitations** are difficulties an individual may have in executing activities.

**Participation restrictions** are problems an individual may experience in involvement in life situation.

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**Bio-psycho-social model of functioning and disability**

- **Health condition**
- **Environmental factors**
- **Personal factors**
- **Activities**
- **Participation**

**Stroke**

- l64

- b1263 Psychic stability
- b1300 Energy level/b4552 Fatiguability
- b134 Sleep
- b28014 Sensation of pain in upper limb
- b710 Mobility of joint functions
- b730 Muscle power functions
- b7800 Sensation of muscle stiffness
- s730 Structure of upper extremity

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**LMU**
Mrs. K: “My problems especially my shoulder pain make it difficult for me to **dress** and **bathe** by myself. I get frustrated because I am dependent on others. I also have problems **using the (squat) toilet**, since someone has to help me **stand up**. This is especially embarrassing. Since I cannot go out anymore, my **friends visit me** a lot, even though I have trouble **doing crafts with them** like before. Problem is, these visits cause some **tension with my daughter in law**; she says that she has no time to serve tea and fruit to my friends every day.”
**Environmental factors** make up the physical, social and attitudinal environment in which people live and conduct their lives.

These factors are external to individuals and can have a positive or negative influence on the individual’s performance as a member of society, on the individual’s capacity to execute actions or tasks, or on individual’s body function or structure.

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**Bio-psycho-social model of functioning and disability**

---

**Environmental factors**
- b1263 Psychic stability
- b1300 Energy level/b4552 Fatiguability
- b134 Sleep
- b28014 Sensation of pain in upper limb
- b710 Mobility of joint functions
- b730 Muscle power functions
- b7800 Sensation of muscle stiffness
- s730 Structure of upper extremity

**Personal factors**
- d540 Dressing
- d510 Washing oneself
- d530 Using the toilet
- d4101 Squatting
- d750 Informal relationships
- d760 Family relationships
- d9203 Crafts
- d9205 Sozializing

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**Stroke**
- I64

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**ICF Research Branch**
“My daughter helps where she can, like bringing me to the doctor, but since I live with my son and family, my daughter-in-law helps me to get dressed, bathed and go to the toilet. It is too much for her, so a female neighbour also comes by 3 days a week. The doctor is nice and and gives me pain medication and other medicines to get better.”
**Personal factors** are the particular background of an individual’s life and living, and comprises features of the individual that are not part of a health condition or health state.

These factors may include gender, race, age, other health conditions, fitness, lifestyle, habits, coping styles, social background, education, profession, past and current experience,...

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The diagram illustrates the bio-psycho-social model of functioning and disability, showing the interrelations and dependencies between various factors such as psychological stability, energy levels, fatigue, sleep, sensation of pain, joint and muscle functions, immediate family, personal care providers, health professionals, informal relationships, family relationships, crafts, and socializing, all influenced by personal factors.
Medical Doctor:

“Mrs. K is a 75 year old widow and used to be a seamstress. I have been seeing her for many years for her hypertension. Although she does have some problems keeping to her diet, Mrs. K is compliant with taking medications and is motivated to get better.”

Bio-psycho-social model of functioning and disability

**Stroke**

I64

- b1263 Psychic stability
- b1300 Energy level/b4552 Fatiguability
- b134 Sleep
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- d540 Dressing
- d510 Washing oneself
- d530 Using the toilet
- d4101 Squatting

- d750 Informal relationships
- d760 Family relationships
- d9203 Crafts
- d9205 Sozializing

- e310 Immediate family
- e340 Personal care providers and personal assistants
- e355 Health professionals
- e5800 Health services
- e1101 Drugs

- Age
- Used to be a seamstress
- Co-morbidity -Hypertension

- Problems keeping to her diet
- Compliant with taking meds
- Motivated
There is a **dynamic interaction** between the entities: Changes in one entity have the potential to modify one or more of the other entities.
ICF categories

Health Condition (disease, trauma)

- Body Functions (493)
- Body Structures (310)
- Environmental Factors (253)
- Activities
- Personal Factors
- Participation (384)
The classification – Structure and Codes

ICF categories

Health Condition
(disease, trauma)

493 Body Functions
310 Body Structures

Activities

384 Participation

253 Environmental Factors

Personal Factors
The ICF for Children and Youth (ICF-CY) is derived from the ICF and designed to describe the **characteristics of the developing child** and influence of his/her environment.
The classification – Structure and Codes

One-level classification

ICF

Body Functions

Body Structures

Activities & Participation

Environmental Factors

Personal Factors

b

s

d

e

b1 – b8

s1 – s8

d1 – d9

e1 – e5

Chapters
The classification – Structure and Codes

Two-level classification

Body Functions

Body Structures

Activities & Participation

Environmental Factors

Personal Factors

ICF

b – b8

s1 – s8

d1 – d9

e1 – e5

Chapters

b110 – b899

s110 – s899

d110 – d999

e110 – e599

2nd level

b1 – b8 s1 – s8 d1 – d9 e1 – e5
Two-level classification

Chapter b2 Sensory functions and pain

b210 Seeing functions…
b230 Hearing functions
b235 Vestibular functions…
b250 Taste function
b255 Smell function
b260 Proprioceptive function…
b280 Sensation of pain…
Chapter b2 Sensory functions and pain

b280 Sensation of pain
Sensation of unpleasant feeling indicating potential or actual damage to some body structure.

Inclusions: sensations of generalized or localized pain in one or more body part, pain in a dermatome, stabbing pain, burning pain, dull pain, aching pain; impairments such as myalgia, analgesia and hyperalgesia

Some categories have exclusion criteria as well.
The classification – Structure and Codes

Detailed-classification

ICF

Body Functions

Body Structures

Activities & Participation

Environmental Factors

Personal Factors

b1 – b8
s1 – s8
d1 – d9
e1 – e5

b110 – b899
s110 – s899
d110 – d999
e110 – e599

b1100 – b7809
s1100 – s8309
d1150 – d9309
e1100 – e5959

b11420 – b54509
s11000 – s76009

Chapters

2nd level

3rd level

4th level

ICF Research Branch
The classification – Structure and Codes

ICF

Body Functions
- b
  - b1 – b8
    - b110 – b899
      - b1100 – b7809
        - b11420 – b54509
      - s110 – s899
        - s1100 – s8309
          - s11000 – s76009
      - d1 – d999
        - d1150 – d9309
      - e1 – e599
        - e110 – e5959
  - s1 – s8
  - d1 – d9
  - e1 – e5

Body Structures
- s
  - s110 – s899
    - s1100 – s8309
      - s11000 – s76009
  - s1 – s8
  - d1 – d9
  - e1 – e5

Activities & Participation
- d
  - d1 – d999
    - d1100 – d9309
  - s1 – s8
  - d1 – d9
  - e1 – e5

Environmental Factors
- e
  - e110 – e599
    - e1100 – e5959
  - s1 – s8
  - d1 – d9
  - e1 – e5
ICF categories - Example

b2 Sensory functions and pain
   b280 Sensation of pain
      b2800 Generalized pain
      b2801 Pain in body part
      b28010 Pain in head and neck
      b28011 Pain in chest
      ...
   b28014 Pain in upper limb
      ...

1st/Chapter level
2nd level
3rd level
4th level
ICF is an **universal model** and **applies to all people** irrespective of their culture, health condition, gender, or age.
Characteristic of the ICF

The ICF promotes a neutral etiological perspective of disability
Joint use ICF and ICD

ICF should be used complementary to the ICD

**Health conditions** and associated health problems

**Functioning** in light of environmental (and personal) factors
"To be useful, **practical ICF-based tools** need to be tailored to the need of the users without forgoing the information needed for health statistics and health reporting"

Development of ICF Core Sets

ICF Research Branch in cooperation with the
German WHO-FIC Collaborating Centre (at DIMDI)
Swiss Paraplegic Research
Ludwig-Maximilians-University

WHO
Classifications, Terminology and Standards Team

Partner-O rganizations
Development of ICF Core Sets

- Acute inflammatory arthritis
- Ankylosing spondylitis
- Breast cancer
- Cerebral Palsy in children/youth
- Chronic ischemic heart disease
- Chronic widespread pain
- Depression
- Diabetes
- Hand conditions
- Head and neck cancer
- Low back pain
- Multiple sclerosis
- Obesity
- Obstructive pulmonary diseases
- Osteoarthritis
- Osteoporosis
- Rheumatoid arthritis
- Sleep disorders
- Spinal cord injury
- Stroke
- Traumatic brain injury
- Bipolar disorders
- Inflammatory bowel diseases
- Hearing Loss
- Vertigo
- Vocational rehabilitation
- **Cardiopulmonary, musculoskeletal and neurological conditions in acute and early post-acute setting including for geriatrics**

**Current developments**

Lower limb amputees, Autism spectrum, Attention Deficit Hyperactivity Disorder (ADHD), Schizophrenia
Where to find existing ICF Core Sets

ICF Research Branch
WHO-FIC Collaborating Centre in German

ICF Core Sets Projects / Neurological Conditions / Development of ICF Core Sets for Traumatic Brain Injury (TBI)

Development of ICF Core Sets for Traumatic Brain Injury (TBI)

A major issue for professionals working with traumatic brain injury is the lack of available measures to address function and disability in TBI. Development of ICF instruments and therefore, comparison of data is quite difficult, because the measures available today do not fully capture the limitations in functioning of persons with TBI. The project was part of the WHO-FIC Research Branch and involved the World Health Organization (WHO), the International Society for Prevention and Rehabilitation (ISPRM), and the European Disability Forum (EDF). The project was sponsored by the World Health Organization (WHO) and the International Society for Prevention and Rehabilitation (ISPRM).

The preparatory phase of the project included the following steps:

- A systematic literature review was performed to identify prior work from 2002-2006 involving persons with TBI as well as to identify gaps in current measures and outcomes using the ICF as a reference.
- A qualitative study with persons with TBI and their caregivers and caregivers was performed at the Guttmann Institute to identify concepts of functioning and health important to them.
- An Internet-based expert survey was performed to gather information from nurses, social workers, physiotherapists, occupational therapists, and other professionals involved in treatment and rehabilitation of persons with TBI.

Brief ICF Core Set for Traumatic Brain Injury

<table>
<thead>
<tr>
<th>ICF Code</th>
<th>ICF Category Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>b164</td>
<td>Higher-level cognitive functions</td>
</tr>
<tr>
<td>b142</td>
<td>Emotional functions</td>
</tr>
<tr>
<td>b140</td>
<td>Energy and drive functions</td>
</tr>
<tr>
<td>b170</td>
<td>Control of voluntary movement functions</td>
</tr>
<tr>
<td>b144</td>
<td>Memory functions</td>
</tr>
<tr>
<td>b120</td>
<td>Sensation of pain</td>
</tr>
<tr>
<td>b140</td>
<td>Attention functions</td>
</tr>
<tr>
<td>b110</td>
<td>Consciousness functions</td>
</tr>
<tr>
<td>s110</td>
<td>Structure of brain</td>
</tr>
<tr>
<td>d230</td>
<td>Carrying out daily routine</td>
</tr>
<tr>
<td>d350</td>
<td>Conversation</td>
</tr>
<tr>
<td>d450</td>
<td>Walking</td>
</tr>
<tr>
<td>d720</td>
<td>Complex interpersonal interactions</td>
</tr>
<tr>
<td>d845</td>
<td>Acquiring, keeping and terminating a job</td>
</tr>
<tr>
<td>d5</td>
<td>Self care</td>
</tr>
<tr>
<td>d920</td>
<td>Recreation and leisure</td>
</tr>
<tr>
<td>d780</td>
<td>Family relationships</td>
</tr>
<tr>
<td>e310</td>
<td>Immediate family</td>
</tr>
</tbody>
</table>
Bringing the ICF into practice

ICF Core Sets for patients with neurological conditions in the acute hospital and early post-acute rehabilitation facilities

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Institute for Medical Informationprocessing, Biometrics and Epidemiology and German Center for Vertigo and Balance Disorders
Ludwig-Maximilians Universität München
Munich, Germany
brief icf core set for neurological conditions in post-acute care

Download «brief_icf_core_set_neurological_conditions_post_acute_care.pdf»

If you need comprehensive information on these conditions, you can download the comprehensive version:

comprehensive icf core set for neurological conditions in post-acute care

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For conditions that are more acute, there are also core sets available:

brief icf core set for neurological conditions in acute care

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And the comprehensive version:

comprehensive icf core set for neurological conditions in acute care

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ICF Core Sets Manual

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Applications of the ICF

- To establish a **common language** to improve communication between disciplines and sectors
- To provide a **systematic coding scheme** for health care information systems
- To provide a **scientific basis** for understanding the consequences of health conditions on a people’s lives
- To **enable data comparison**
- To stimulate the **development of services**
ICF IMPLEMENTATION IN INDIA

DR ALAKANANDA BANERJEE
DHARMA FOUNDATION OF INDIA
Thank you very much for your attention!
QUESTIONS ?