KlasifiKon 2019

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

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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

		DISABILITY	
		No	Yes
Health Problem	No		
	Yes		

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)*

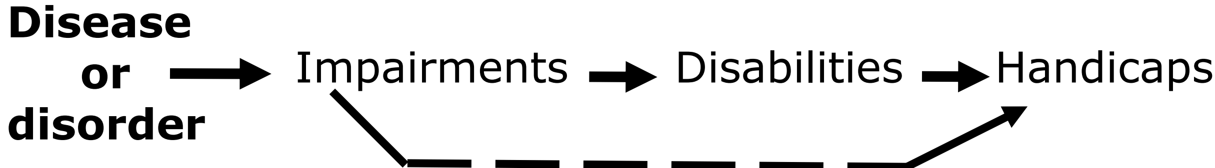
21ST Century

Health operationalised with ICF
ICF classifies health and health related domains

International Classification of Impairments, Disabilities, and Handicaps (ICIDH)

Philip Wood

- Conceptual model of disablement in the ICIDH disentangled disability from disease



- Published by WHO in 1980 for field testing

World Health Organization

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
  - Definitions added, Neutral language: BF,BS, A&P, P, EF
  - 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

Conceptualization of Disbility
ICF vs CRPD

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**

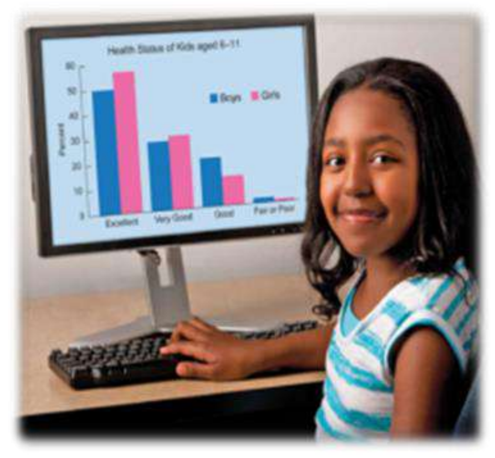
"Persons with disabilities include those who have **long-term** physical, mental, intellectual, or sensory **impairments** which in **interaction with various barriers** may hinder their full and effective participation in society on an equal basis with others."

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
-

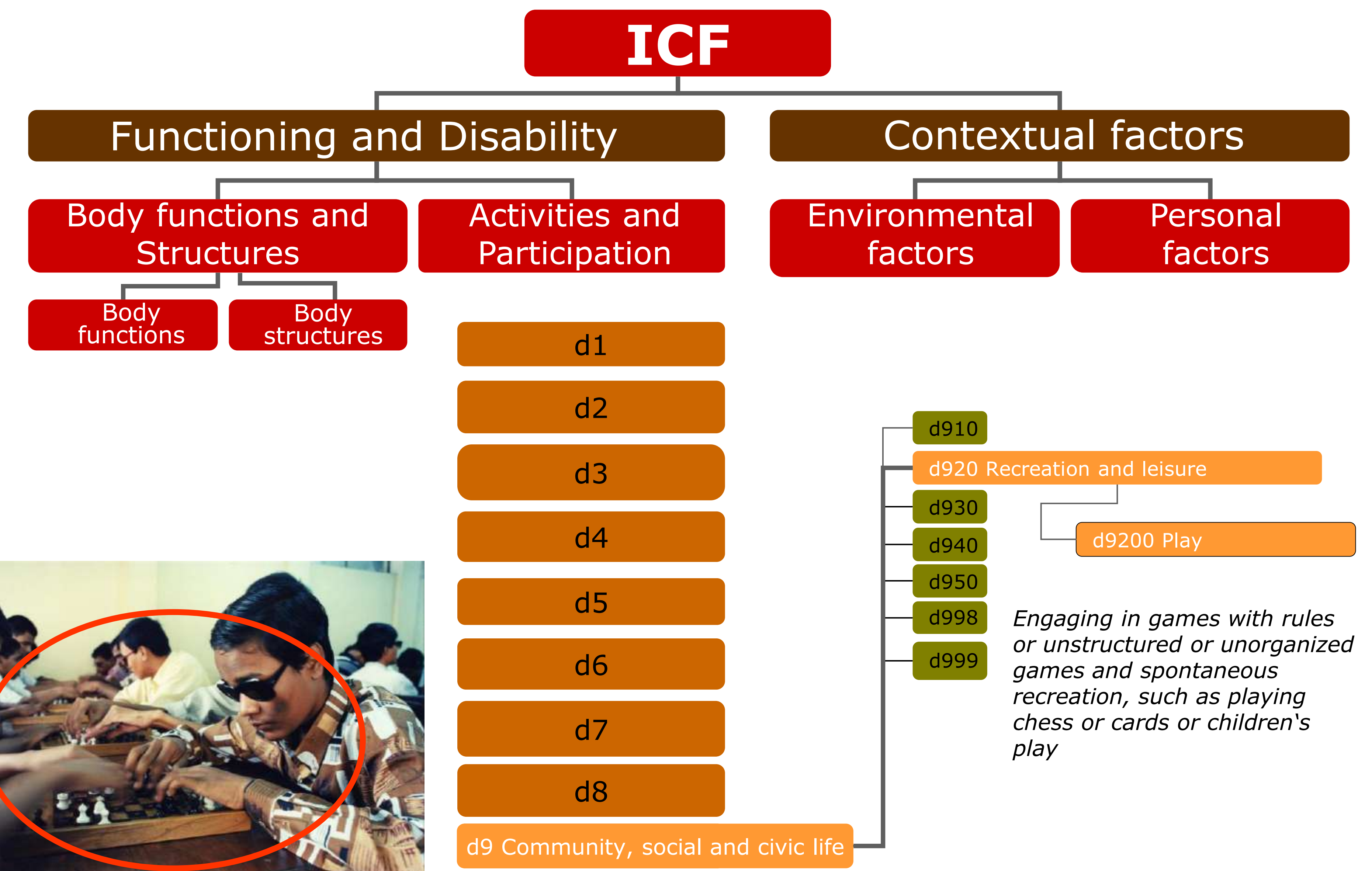
Why do we need it?

Provides a **common language and understanding**

- Definition of disability
- Definition of categories (e.g. walking)

Enables **counting & reporting** in an efficient and comparable manner

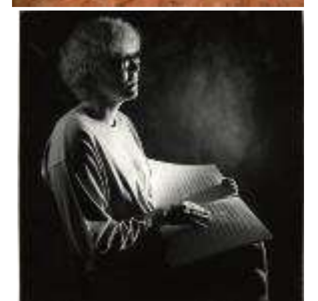
- **Transform** complex and **long text into alphanumeric codes**
- Data **aggregation** and comparability


The structure and codes of the classification
ICF
Functioning and Disability
Contextual factors
Body functions and Structures
Activities and Participation
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
d930
d940
d950
d998
d999
d9200 Play
Engaging in games with rules or unstructured or unorganized games and spontaneous recreation, such as playing chess or cards or children's play

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

Who is disabled?

Single domain



Seeing Functions

10/20

Mild-Moderate vision impairment:
Needs eye glasses, contact lenses…

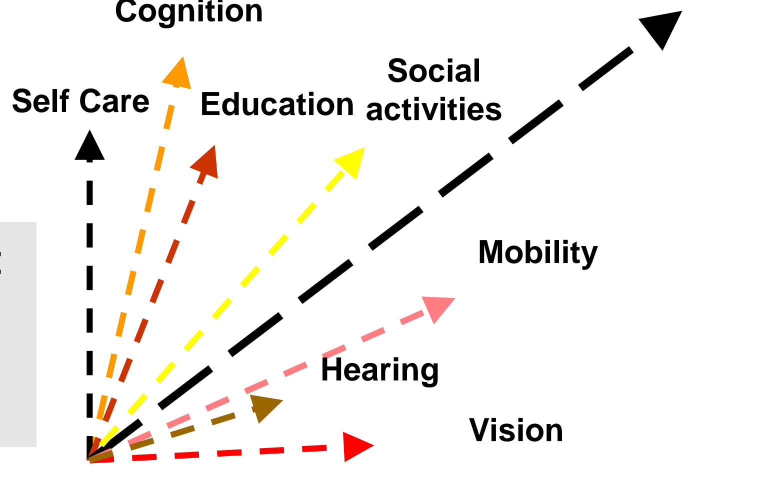
2/20

Severe vision impairment:
Needs operation

1/20

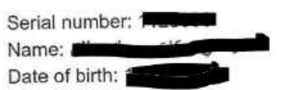
Complete vision impairment (blind):
Needs assistance –
pension, device, assistant
environmental modifications

Multiple domains



التقييم الوظيفي للكبار

Functional Assessment Profile for Adult



Serial number:
Name:
Date of birth:
Area: Block: Street: House No:
Job:

Civil ID:
Sex: ذكر
Nationality: كويتي
Tel No:

1. Communication:
1) No communication
2) Needs Interpreter
3) Communication — one Way (receives or expresses)
4) Communicates understandably (verbally or non-verbally)

2. Battling:
1) Dependent
2) Needs physical help of another person
3) Independent In alternate way (bed bath)
4) Independent In routine way (bathroom bath)

3. Dressing:
1) Dependent
2) Needs physical help from other person
3) Needs other's supervision
4) Independent

4. Toilet Activities:
1) Dependent
2) Needs help
3) Independent In alternate way (bed pan etc...)
4) Independent In routine way (as done by the society)

5. Eating:
1) Dependent
2) Does not use the affected upper extremity at all
3) Use the affected extremity also as aid along with the unaffected side
4) Independent

(Bladder/Bowel) 6. Sphincter Control
1) Incontinent-socially unacceptable (passes urine in Diwaniya or marriage parties)
2) Incontinent-socially acceptable (use collective devices)
3) Immobility producing Incontinence
4) Continent

7. Locomotion
1) Immobile and passive locomotion
2) Active-trunk parallel to ground (crawling, rolling, etc.)
3) Active-trunk vertical to ground (wheelchair, crutch, etc.)
4) Normal ambulation

Dr. Comments:

8. Mobility:
1) No transfer activities
2) Needs help
3) Transfer at same level of surface
4) Transfer at 'different. Level from basic position

9. Social Obligation
1) Unable to take part
2) Needs assistance
3) Independent in alternate way (does not sit on ground in Diwaniyas)
4) Independent in routine way

10. Religious Obligation:
1) Unable to perform
2) Needs help
3) Perform in alternate way
4) Perform in routine way

11. Vocational Performance:
1) Unemployed, lost the job, u nab led to perform the present job
2) Changed the profession
3) Regained the same profession in alternate department or job
4) Regained the original profession

12. Visual Performance:
1) Total blind
2) Can visualise objects but does not perceive
3) Needs aids
4) Normal vision

13. Locomotor Performance for Bidlorespiralary faigiilnuent
1) Confined to one position
2) Dysphnoea during routine ADL
3) Dysphnoea during walking
4) No Dysphnoea

14. Sexual Activities (when applicable)
1) Unable to indulge
2) Not interested
3) Alternate methods
4) Routine methods

15. Satisfaction of Life
1) Not satisfied
2) Satisfied but complains
3) Not satisfied but does not complain
4) Fully.satisfied

ICF conceptual model
Functioning is <u>MULTI-DIMESIONAL</u> not uni-dimensional

BODY Function/ Structure
(impairment)

PERSON Activities

(limitation)

SOCIETY Participation
(restriction)

ICF conceptual model

Functioning/Disability: Context inclusive not person alone

نموذج طلب تقرير طبى / فحوصات طبية

Medical Report & Investigation Request

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

Patient Name:		Date: 2018-09-02
Civil ID:	Sex: انثى	O.F.N:
Mobile No:	Tel No:	Nationality: كويتي

- **Clinical Diagnosis & Examination:**

She was in special needs School.
I.Q 45
Significantly depends on her family in managing basic life needs.

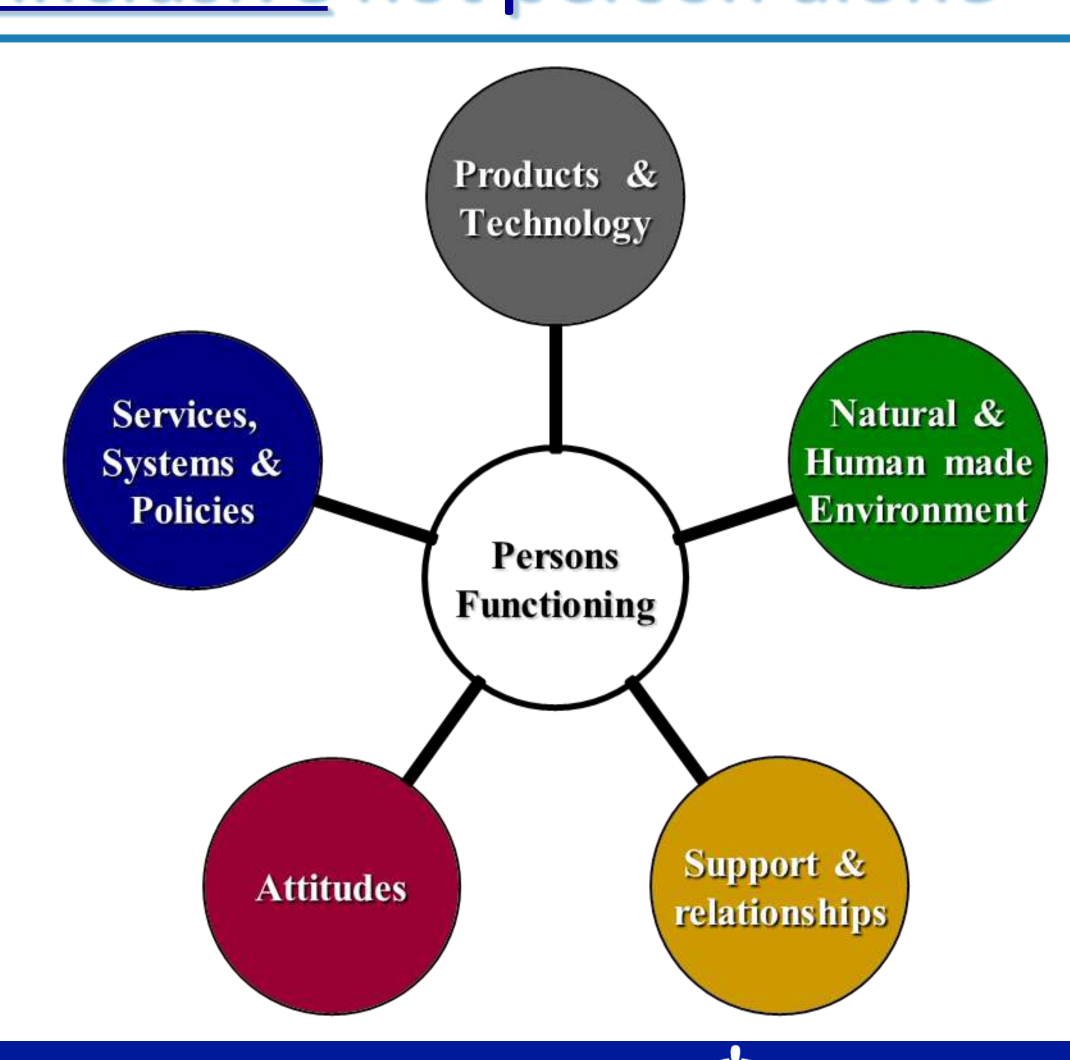
- **Diagnosis:** | ICF:

- **Disability:** Moderate Intellectual Disability.

No	learning	intellectual	motor	physical	psychological	developmental	visual	hearing
لا يوجد	تعلمية	ذهنية	حركية	جسدية	نفسية	تطورية	بصرية	سمعية

- **Severity:**

Mild - بسيطة	Moderate - متوسطة	Severe – شديدة	unclassified



Deutsche Rentenversicherung

Deutsche Rentenversicherung

Versicherungsnummer:

Geburtsdatum

Ärztliches Gutachten

Schlussblatt Teil 1

Sozialmedizinische Leistungsbeurteilung

A. Letzte berufliche Tätigkeit

Bezeichnung der Tätigkeit

Beurteilung des zeitlichen Umfanges, in dem die letzte berufliche Tätigkeit ausgeübt werden kann: ☐ 6 Stunden und mehr ☐ 3 bis unter 6 Stunden ☐ unter 3 Stunden

Die getroffenen Feststellungen gelten seit (Tag, Monat, Jahr)

Besserung unwahrscheinlich ☐ ja (Begründung zu den Angaben in der Epikrise) ☐ nein

Dauer der Leistungsminderung voraussichtlich weniger als drei Jahre: ☐ nein ☐ ja, voraussichtlich bis ____

B. Positives und negatives Leistungsbild (allgemeiner Arbeitsmarkt) Zutreffendes ankreuzen (X), Mehrfachnennungen möglich

1. Positives Leistungsbild — Folgende Arbeiten können verrichtet werden:

Körperliche Arbeitsschwere ☐ schwere Arbeiten ☐ mittelschwere ☐ leichte bis mittelschwere ☐ leichte

Arbeitshaltung im Stehen ☐ ständig ☐ überwiegend ☐ zeitweise; im Gehen ☐ ständig ☐ überwiegend ☐ zeitweise; im Sitzen ☐ ständig ☐ überwiegend ☐ zeitweise

Arbeitsorganisation ☐ Tagesschicht ☐ Früh-/Spätschicht ☐ Nachtschicht

☐ Keine wesentlichen Einschränkungen

2. Negatives Leistungsbild

Einschränkungen beziehen sich auf (Art / Ausmaß müssen differenziert unter Ziff. 3 beschrieben werden):

☐ geistige/psychische Belastbarkeit
(Zu beachten sind insbesondere Konzentrations-/Reaktionsvermögen, Umstellungs-, Anpassungsvermögen, Verantwortung für Personen und Maschinen, Publikumsverkehr, Überwachung, Steuerung komplexer Arbeitsvorgänge).

☐ Sinnesorgane
(Zu beachten sind insbesondere Seh-, Hör-, Sprach-, Sprech-, Tast- und Riechvermögen).

☐ Bewegungs-/Haltungsapparat
(Zu beachten sind insbesondere Gebrauchsfähigkeit der Hände, häufiges Bücken, Ersteigen von Treppen, Leitern und Gerüsten, Heben, Tragen und Bewegen von Lasten, Gang- und Standsicherheit, Zwangshaltungen).

☐ Gefährdungs- und Belastungsfaktoren
(Zu beachten sind insbesondere Nässe, Zugluft, extrem schwankende Temperaturen, inhalative Belastungen, Allergene, Lärm, Erschütterungen, Vibrationen, Tätigkeiten mit erhöhter Unfallgefahr, häufig wechselnde Arbeitszeiten).

3. Beschreibung des Leistungsbildes (insbesondere der unter Ziffer 2 genannten Einschränkungen).

4. Beurteilung des zeitlichen Umfanges, in dem eine Tätigkeit entsprechend dem positiven und negativen Leistungsbild ausgeübt werden kann: ☐ 6 Stunden und mehr ☐ 3 Stunden bis unter 6 Stunden ☐ unter 3 Stunden

Bitte alle Blätter ausfüllen und jeweils mit Seitenzahl und Versicherungsnummer kennzeichnen!

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....

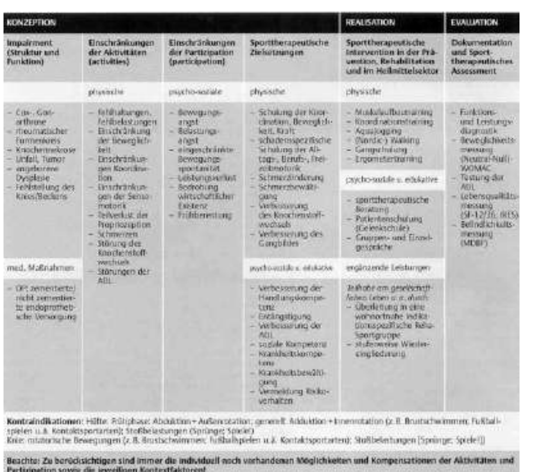
- **Generic functioning measures**
  - Activity of daily living (ADL) scales
    - Barthel index (1955)
    - Katz index (1957)
  - Instrumental Activities of Daily Living (IADL) scales
    - Fries's Health Assessment Questionnaire (HAQ) (1980)
    - Granger's Functional Independence Measure (FIM) (1987)

- **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 ….



KONZEPTION				REALISATION	EVALUATION
Impairment (Struktur und Funktion)	Einschränkungen der Aktivitäten (activities)	Einschränkungen der Partizipation (participation)	Sporttherapeutische Zielsetzungen	Sporttherapeutische Intervention in der Prävention, Rehabilitation und im Heilmittelsektor	Dokumentation und Sporttherapeutisches Assessment
	physische	psycho-soziale	physische	physische	
– Cox-, Gonarthrose – rheumatischer Formenkreis – Knochennekrose – Unfall, Tumor – angeborene Dysplasie – Fehlstellung des Knies/Beckens	– Fehlhaltungen, Fehlbelastungen – Einschränkung der Beweglichkeit – Einschränkungen der Koordination – Einschränkungen der Sensomotorik – Teilverlust der Propriozeption – Schmerzen – Störung des Knochenstoffwechsels – Störungen der ADL	– Bewegungsangst – Belastungsangst – eingeschränkte Bewegungsspontanität – Leistungsverlust – Bedrohung wirtschaftlicher Existenz – Frühberentung	– Schulung der Koordination, Beweglichkeit, Kraft – schadensspezifische Schulung der Alltags-, Berufs-, Freizeitmotorik – Schmerzlinderung – Schmerzbewältigung – Verbesserung des Knochenstoffwechsels – Verbesserung des Gangbildes	– Muskelaufbautraining – Koordinationstraining – Aquajogging – (Nordic-) Walking – Gangschulung – Ergometertraining	– Funktions- und Leistungsdiagnostik – Beweglichkeitsmessung (Neutral-Null) – WOMAC – Testung der ADL – Lebensqualitätsmessung (SF-12/36, IRES) – Befindlichkeitsmessung (MDBF)
				psycho-soziale u. edukative	
				– sporttherapeutische Beratung – Patientenschulung (Gelenkschule) – Gruppen- und Einzelgespräche	
med. Maßnahmen			psycho-soziale u. edukative	ergänzende Leistungen	
– OP: zementierte/nicht zementierte endoprothetische Versorgung			– Verbesserung der Handlungskompetenz – Eindringstigung – Verbesserung der ADL – soziale Kompetenz – Krankheitskompetenz – Krankheitsbewältigung – Vermeidung Risikoverhalten	Teilhabe am gesellschaftlichen Leben u. a. durch: – Überleitung in eine wohnortnahe indikationsspezifische Reha-Sportgruppe – stufenweise Wiedereingliederung	

Kontraindikationen: Hüfte: Frühphase: Abduktion + Außenrotation; generell: Adduktion + Innenrotation (z. B. Brustschwimmen; Fußballspielen u. ä. Kontaktsportarten); Stoßbelastungen (Sprünge; Spiele)
Knie: rotatorische Bewegungen (z. B. Brustschwimmen; Fußballspielen u. ä. Kontaktsportarten); Stoßbelastungen (Sprünge; Spiele))

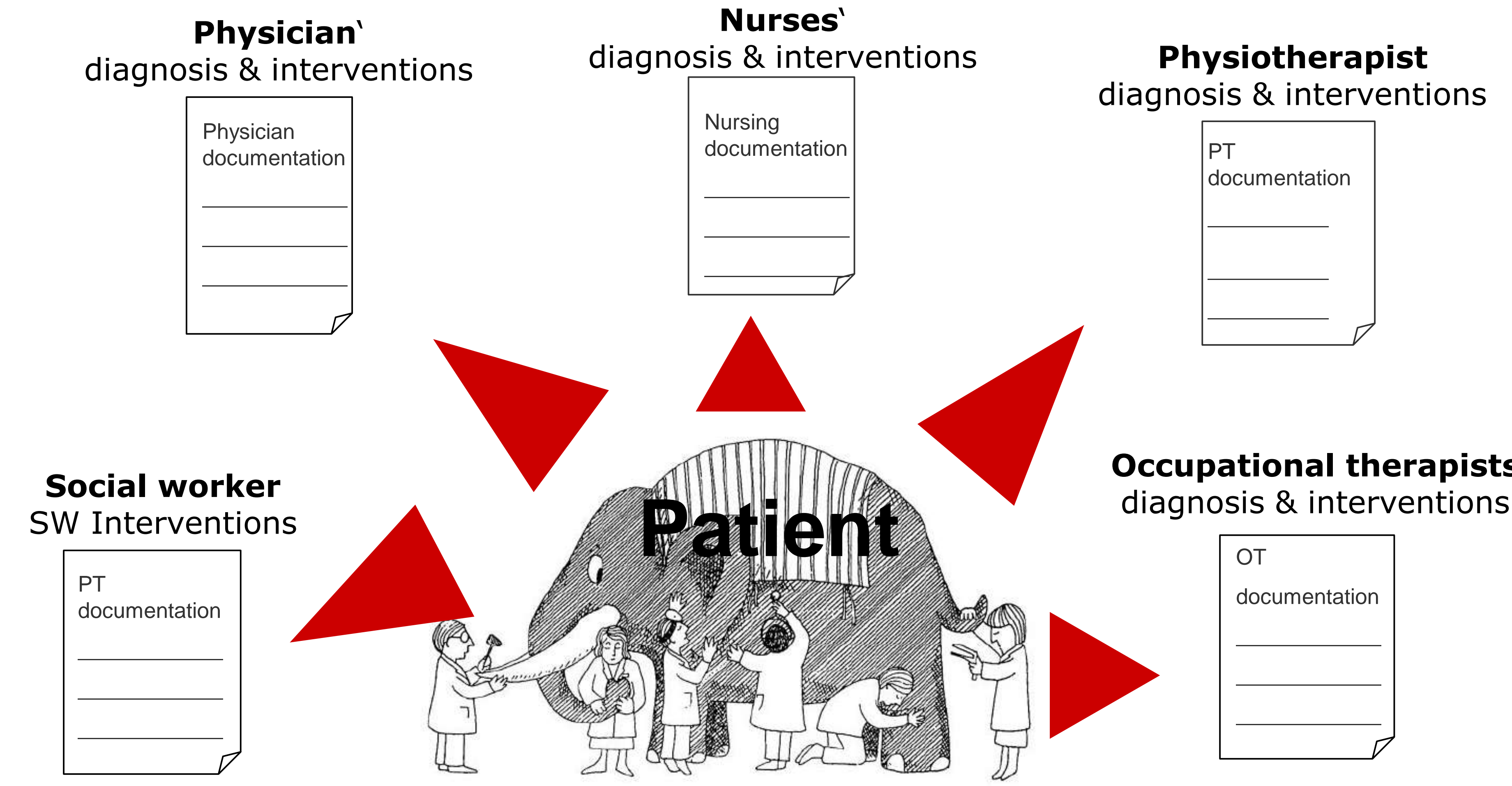
Beachte: Zu berücksichtigen sind immer die individuell noch vorhandenen Möglichkeiten und Kompensationen der Aktivitäten und Partizipation sowie die jeweiligen Kontextfaktoren!

- **identify functioning problems & potentials**
- **set treatment goals & plan interventions**
- **monitor & evalute change over time**
- **determine treatment/care needs**

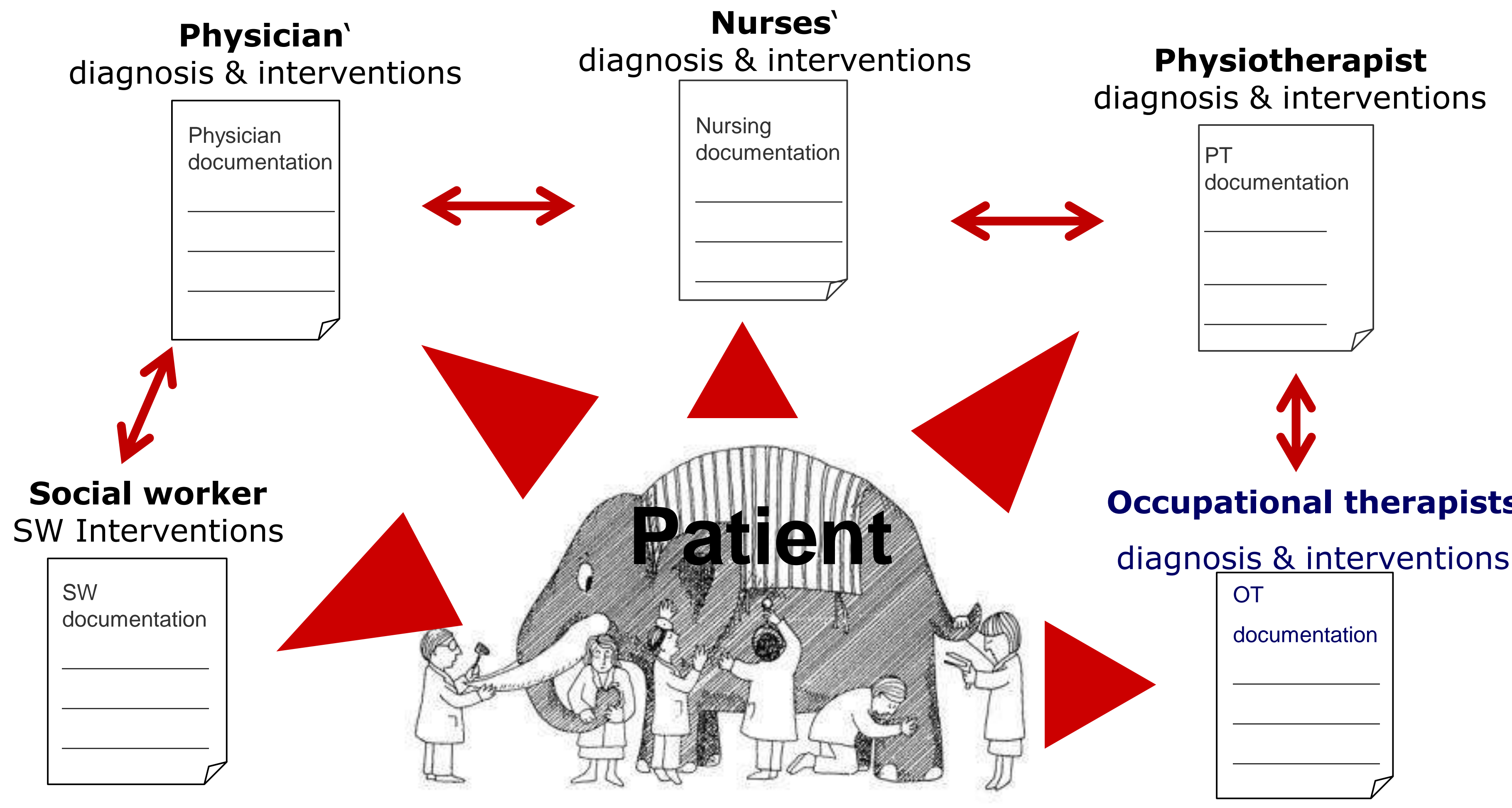
ICF: What difference does it make?
Identify and compare
where the problem is and where the solution lies

Body Functions & Structures	Activities & Participation	Environmental Factors
IMPAIRMENTS	*ACTIVITY LIMITATIONS PARTICIPATION RESTRICTION*	*Barriers & Facilitators*
✓Pain ✓Seeing ✓Breathing ✓Heart function	✓Walking ✓Communication ✓Washing ✓Domestic responsibilities ✓Work & Education ✓Community life	✓Buildings ✓Work equipment ✓Attitudes ✓Support & Relationships
Intervention: ✓Medication ✓Eye glasses ✓Surgery ✓Functional stimulation devices	**Intervention:** ✓Prostheses ✓Wheelchair ✓Rehab ✓Exercise	**Intervention:** ✓Ramps ✓Workplace modification ✓Destigma. Campaign

Documentation of functioning information at in health care settings



ICF provides a common language to improve communication across the continuum of care



World Health Organization

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.
4. Incorporating rehabilitation in Universal Health Coverage.
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.
8. Collecting information relevant to rehabilitation to enhance health information systems including system level rehabilitation data and information on functioning utilizing the International Classification of Functioning, Disability and Health (ICF).
9. Building research capacity and expanding the availability of robust evidence for rehabilitation.
10. Establishing and strengthening networks and partnerships in rehabilitation, particularly between low-, middle- and high-income countries.

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

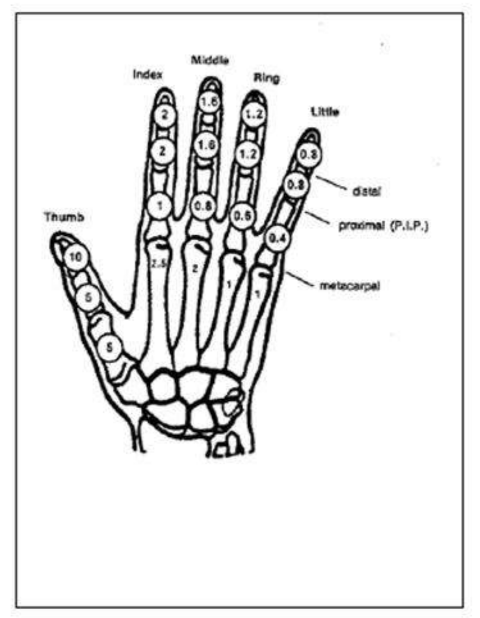
- **Scope varies** according to the states disability policy:
  - health & rehab services incl. access to assistive technology
  - social or income security & pensions
  - health and social insurance benefits
  - short and long term sick leaves
  - general social benefits incl. income support and access 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

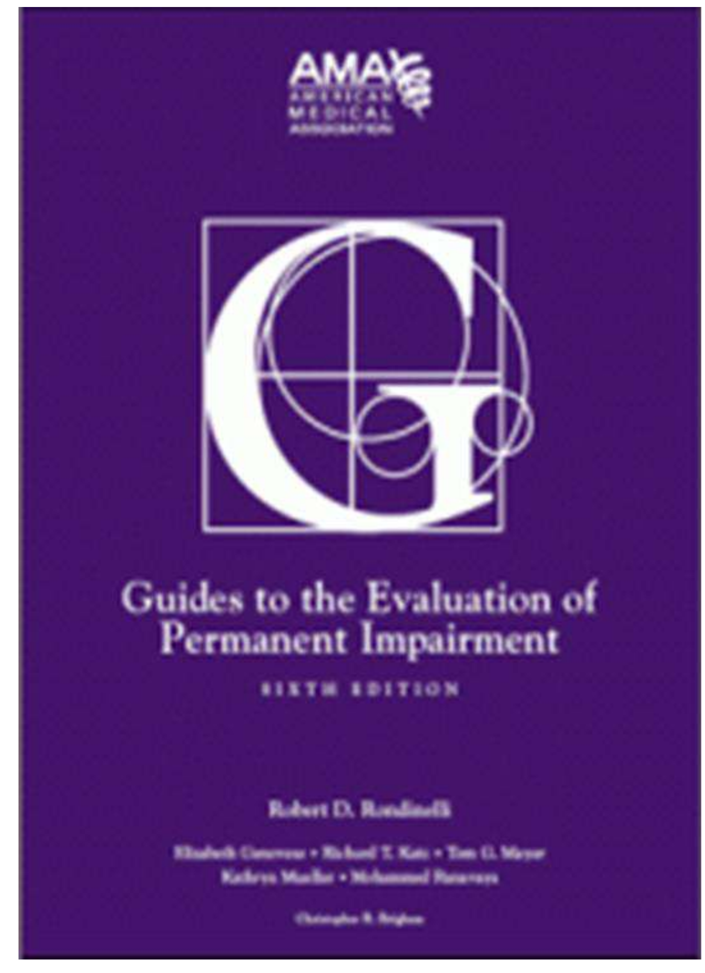
Impairment approach in Disability Assessment: ‘Bareme’ Assessment (1638-1703)

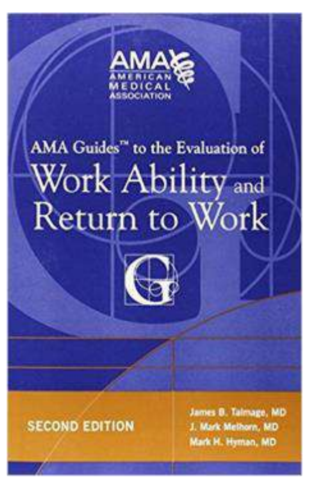
Figure 2.1: Bareme Table and Chart for the Hand

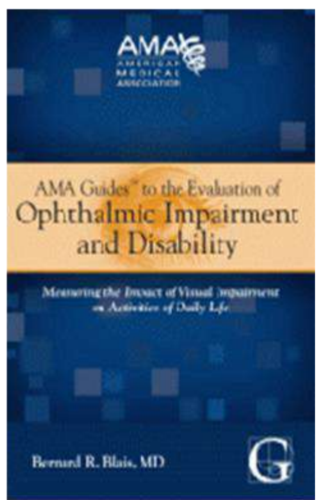
Hand	
Amputation	**Percentage**
Thumb, including metacarpal	20.
Thumb, both phalanges	15.
Thumb, one phalanx	10.
Finger, index	5.
Finger, index at P.I.P.	4.
Finger, index at distal	2.
Finger, middle	4.
Finger, middle at P.I.P.	3.2
Finger, middle at distal	1.6
Finger, ring	3.
Finger, ring at P.I.P.	2.4
Finger, ring at distal	1.2
Finger, little	2.
Finger, little at P.I.P.	1.6
Finger, little at distal	.8

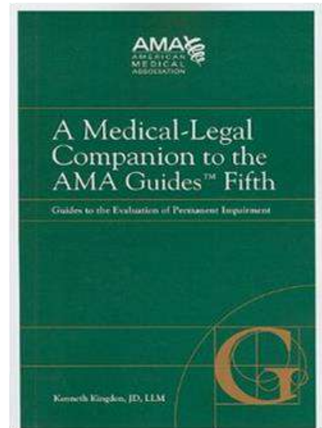


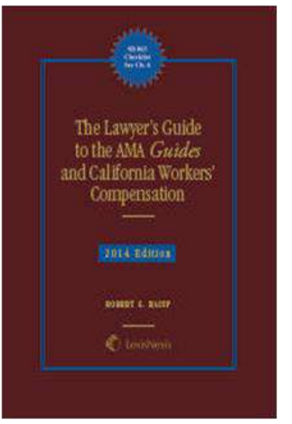
AMA Guidelines for the Evaluation of Permanent Impairments











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-effecient**
  - 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:

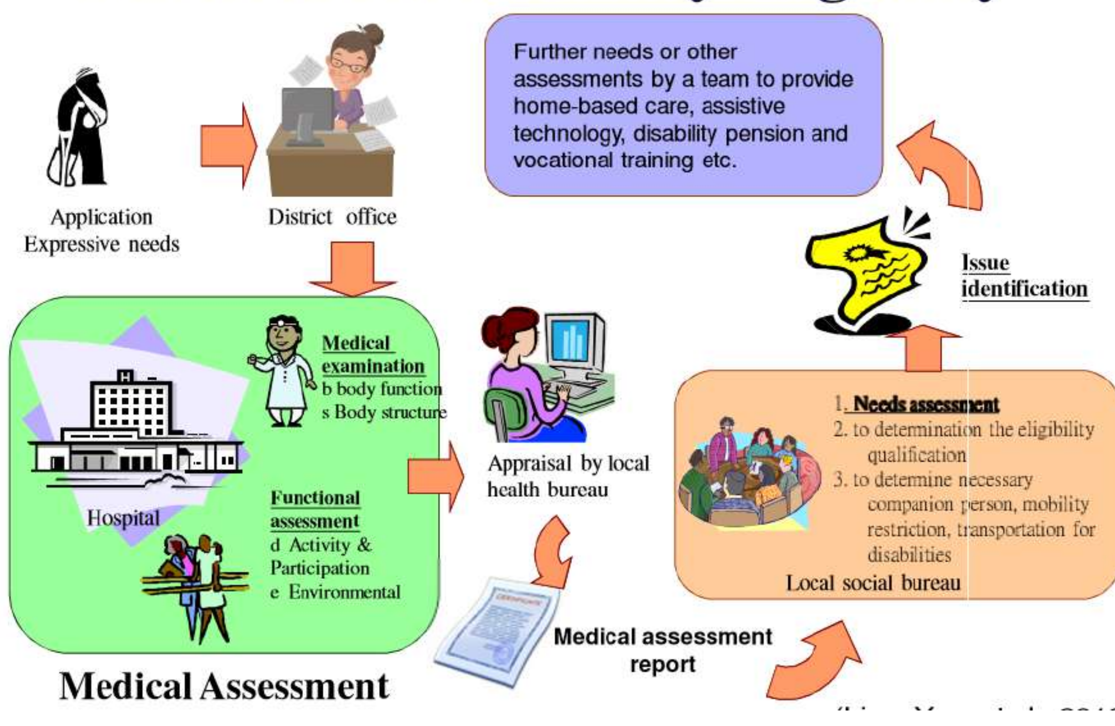
  - a **multidisciplinary team** (including medical doctors, occupational therapists, psychologists, social workers,...) in charge of assessing the difficulties the person faces and his/her needs;
  - an executive board, the '**Commission for the rights and autonomy of persons with disabilities'**, taking 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').**

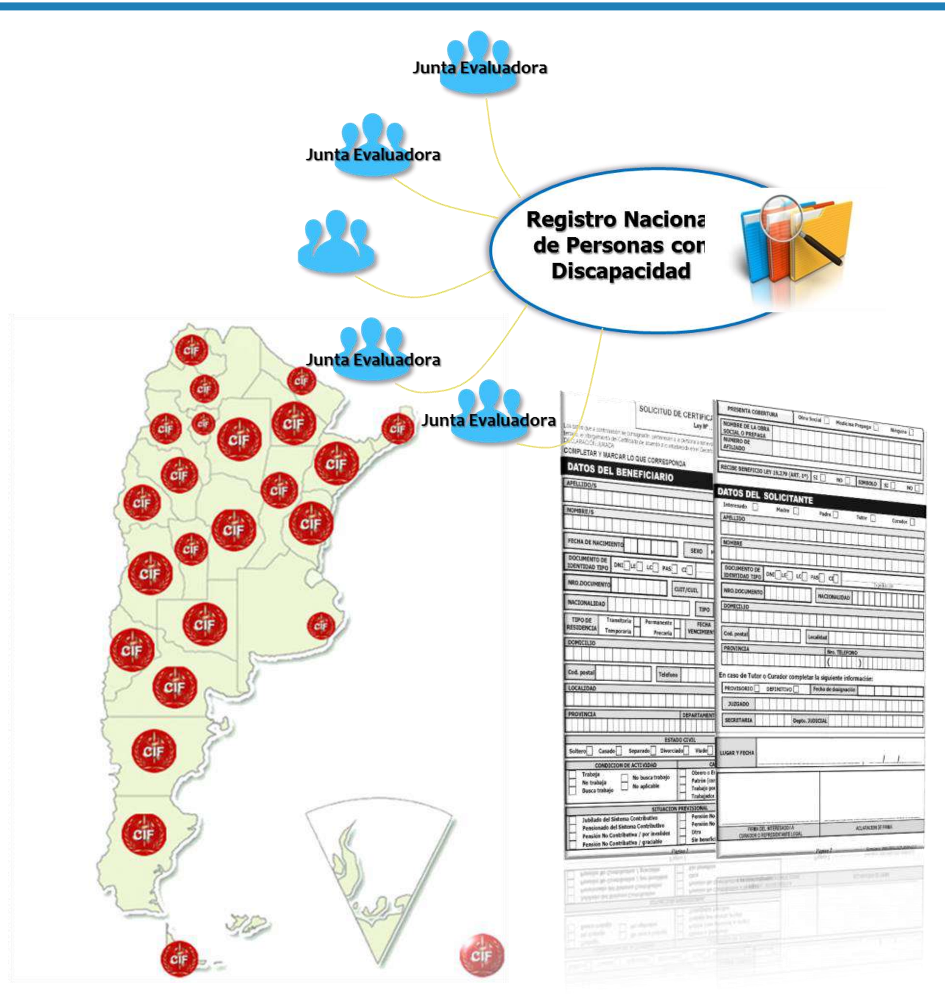
ICF in Social Medicine
Country Example: France (2)

- **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



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 especificas por componente
  - Calibración de calificadores
  - Concepto: líneas de corte

ICF in Social Medicine
Country Example: Cyprus - Reform of Disability Assessment System

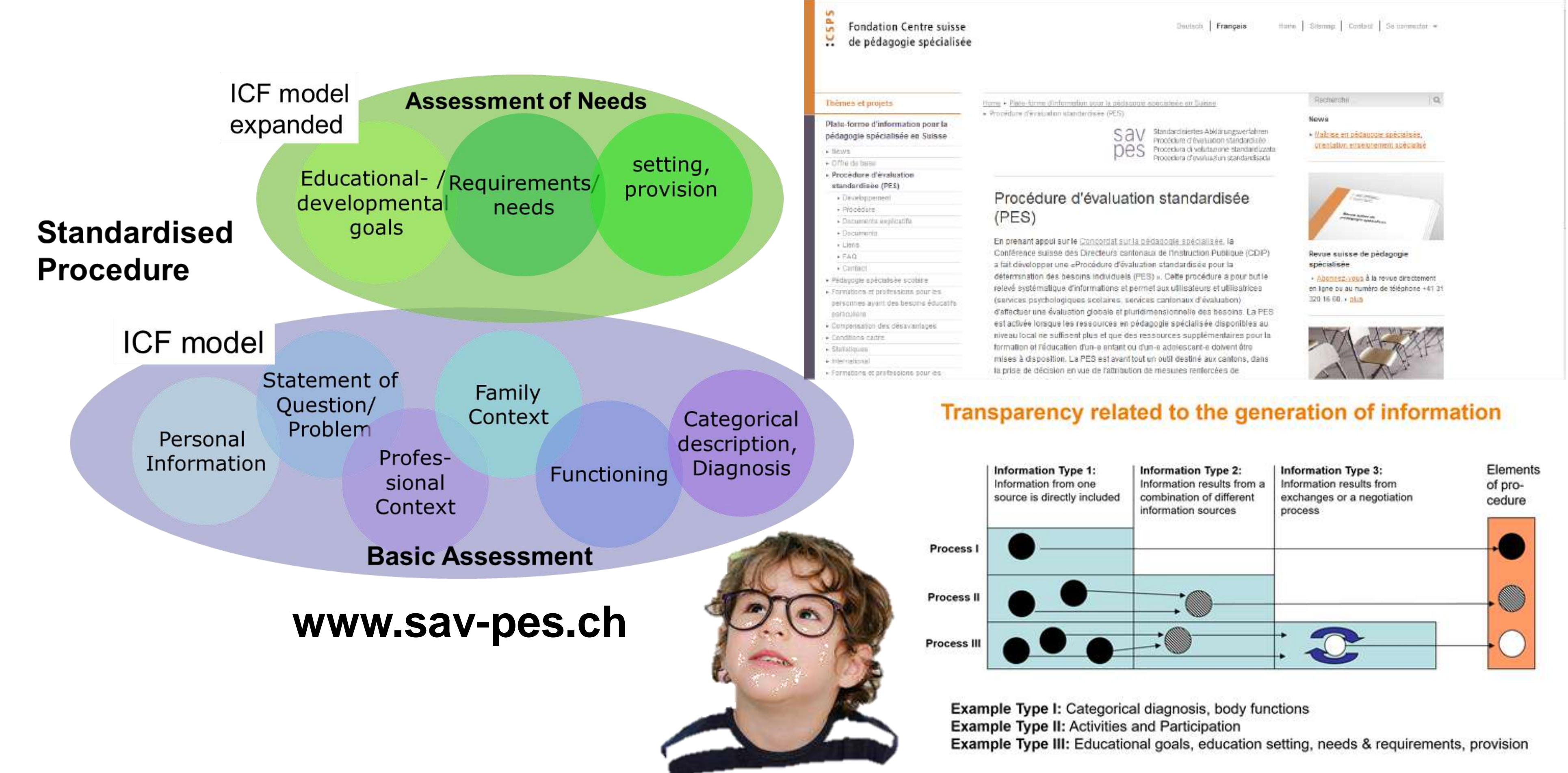
Situation **BEFORE** reform

- **Absence of clinical & functional assessment**
- **Multiple clinical assessments**
- **Absence of any protocols**
- **Delays between the application & the decision**
- **Decision only without rehabilitation plan**
- **Weak legislative platform**
- **Lack of data for disability population**
- **Lack for structuring policies**

Situation **AFTER** reform

- **A home for ICF "Assessment Center"**
- **Assessment mechanism stages: Preparation (File / vignette , assessment (med/Func) & completion**
- **Six Focused protocols for disability assessment**
- **Medical assessment by disability physicians(30 min)**
- **Functional assessment by rehabilitators (80 min)**
- **Qualifiers Mechanism**
- **Final Report**
- **Medical & Rehabilitative equipment**

ICF in Social Medicine
Country example: Switzerland- ICF-based Eligibility Procedure for Education



World Health Organization

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

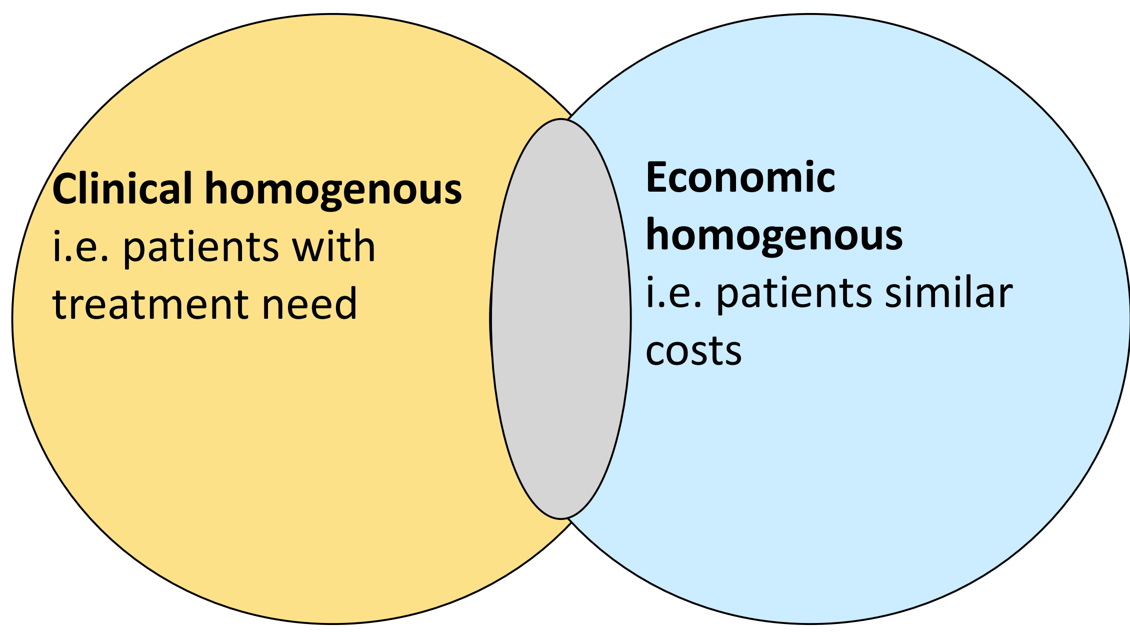
It entails a process of institutional and policy reform which requires:

- 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 "gate keeper")
- 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



Functioning information & ICF & in reimbursement (case-mix) systems (cont.)

Diagnosis

Procedure

Comorbidity

Age, Gender

+

Functioning Information

DRG

Length of stay

Without FI | With FI

13% | 19%

8% | 28%

Clinical classification and predictive indicators

57-year-old male

Hypertension

Diabetes

Depression

HPG = Diabetes

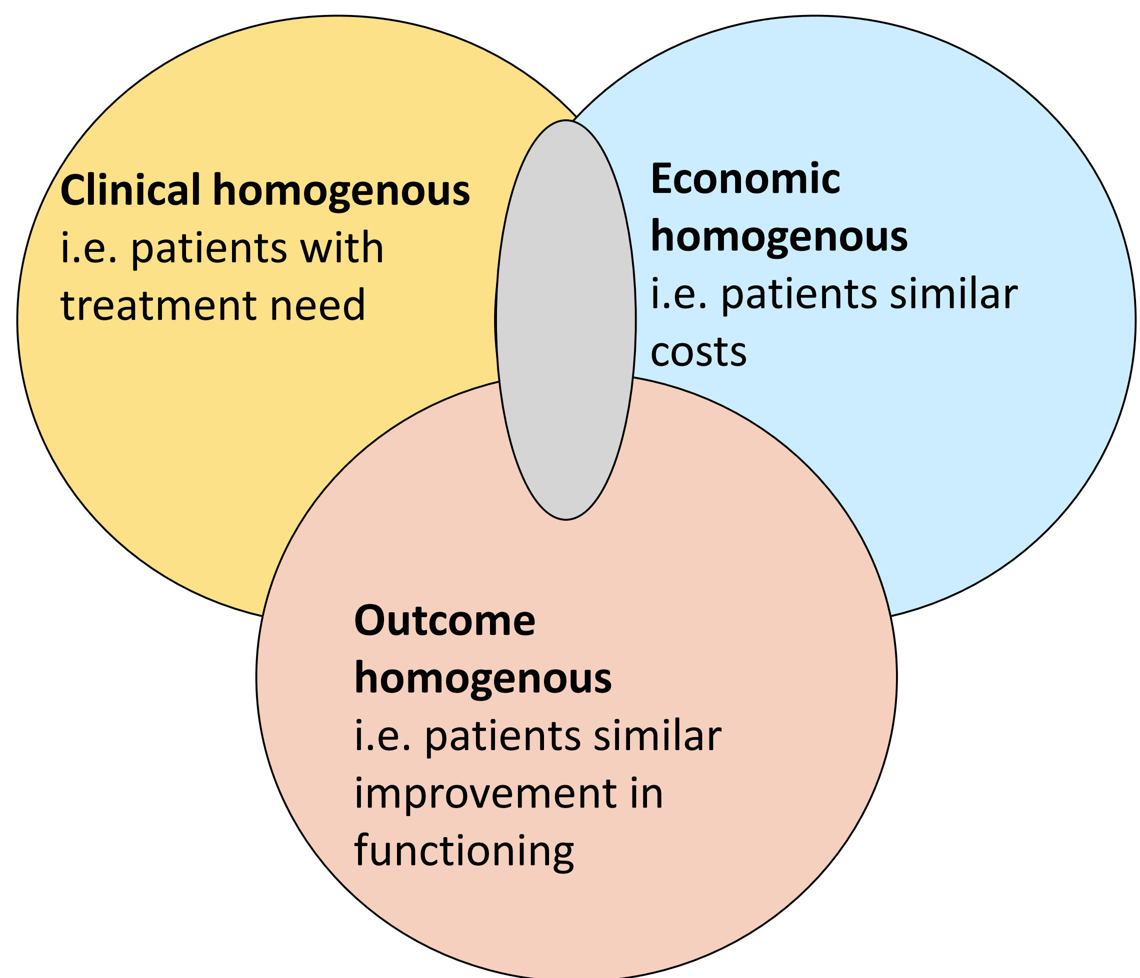
How much will someone with this profile cost the health system next year?

How much will this population cost the health system next year?

References:

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

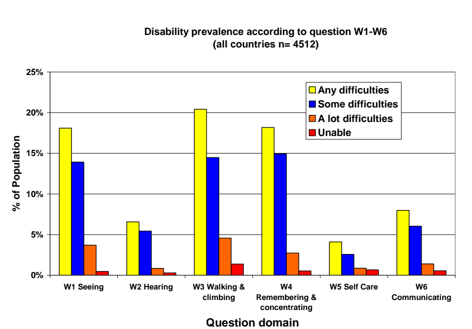
Functioning information & ICF & in reimbursement (case-mix) systems (cont.)



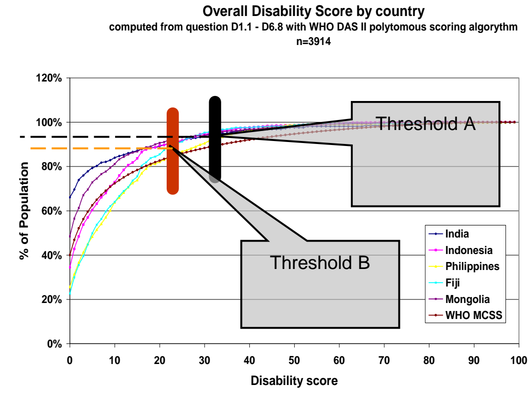
Use of ICF in Health and Disability Statistics

- **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

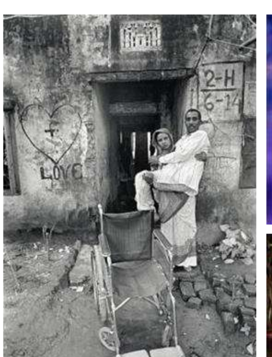


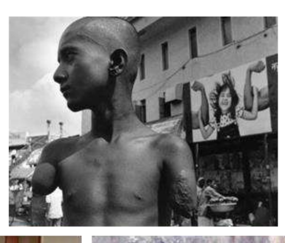
– **Impairment based: "counting the disabled"**
  - Numbers are **limited** in terms of **accuracy and comparability**
    – Certain groups are missed
  - Data sets have **limited utility**
    – Fixed prevalence rate data set cannot be used further exploration
    – Statistics do not indicate the service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

+

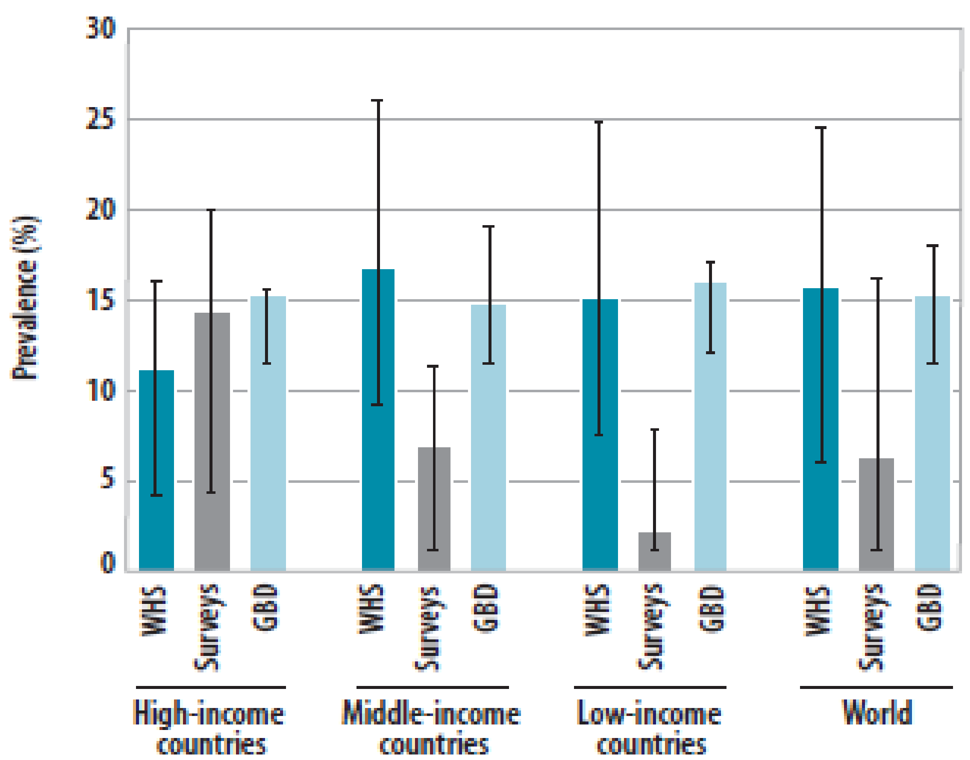
- Information about the impact of person's **ENVIRONMENT**

…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:

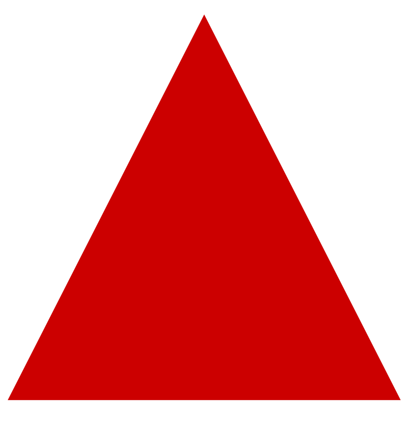
- country reported data
- GBD estimates
- World Health Surveys

- country reported data from LMIC is **under-estimating** disability

- Variation of prevalence data

Order & wording of Disability survey and census questions

Examples

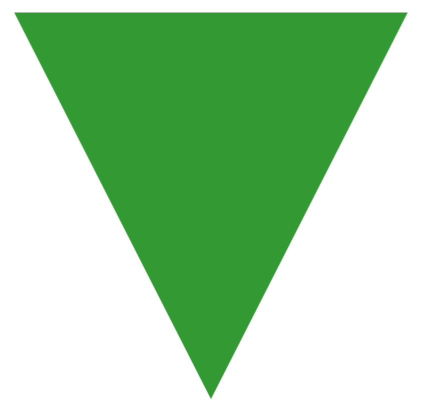


"God forbid someone should have a disability, but if they do are they: blind, deaf/dumb, crippled, mentally retarded/insane, multiple, other?

How did they become disabled?"

"Are you blind?

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



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".

"Do you have any difficulty with the following activities...?

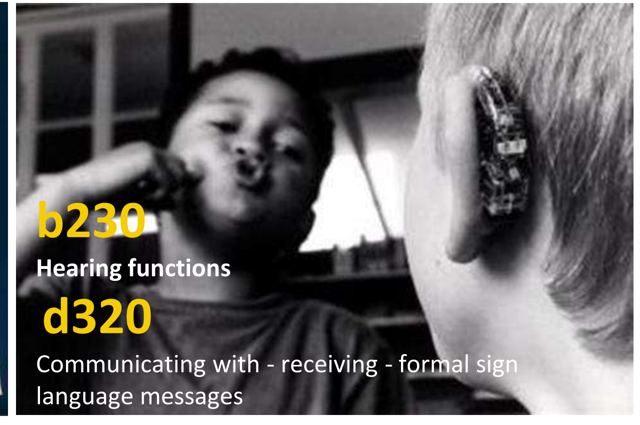
If Yes, are you blind?"

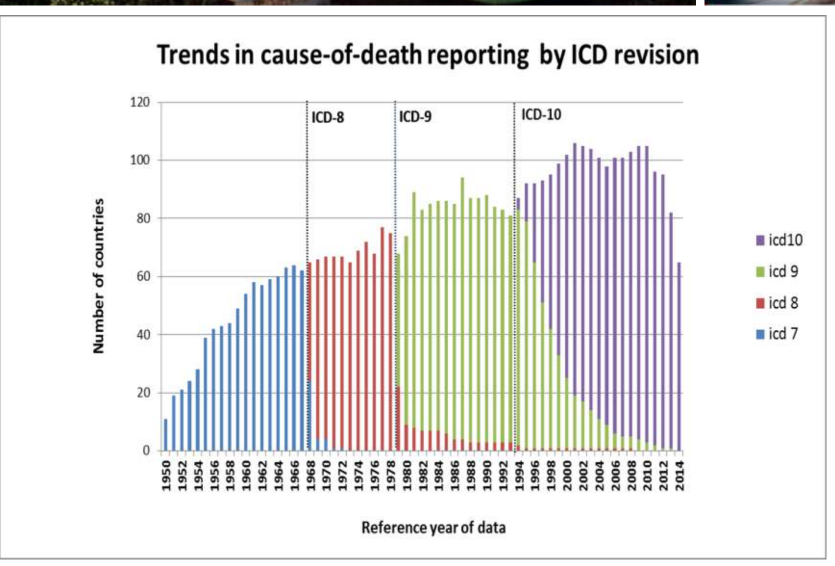
Counting and Reporting starts with a code….

Mortality

Morbidity

Functioning / Disability

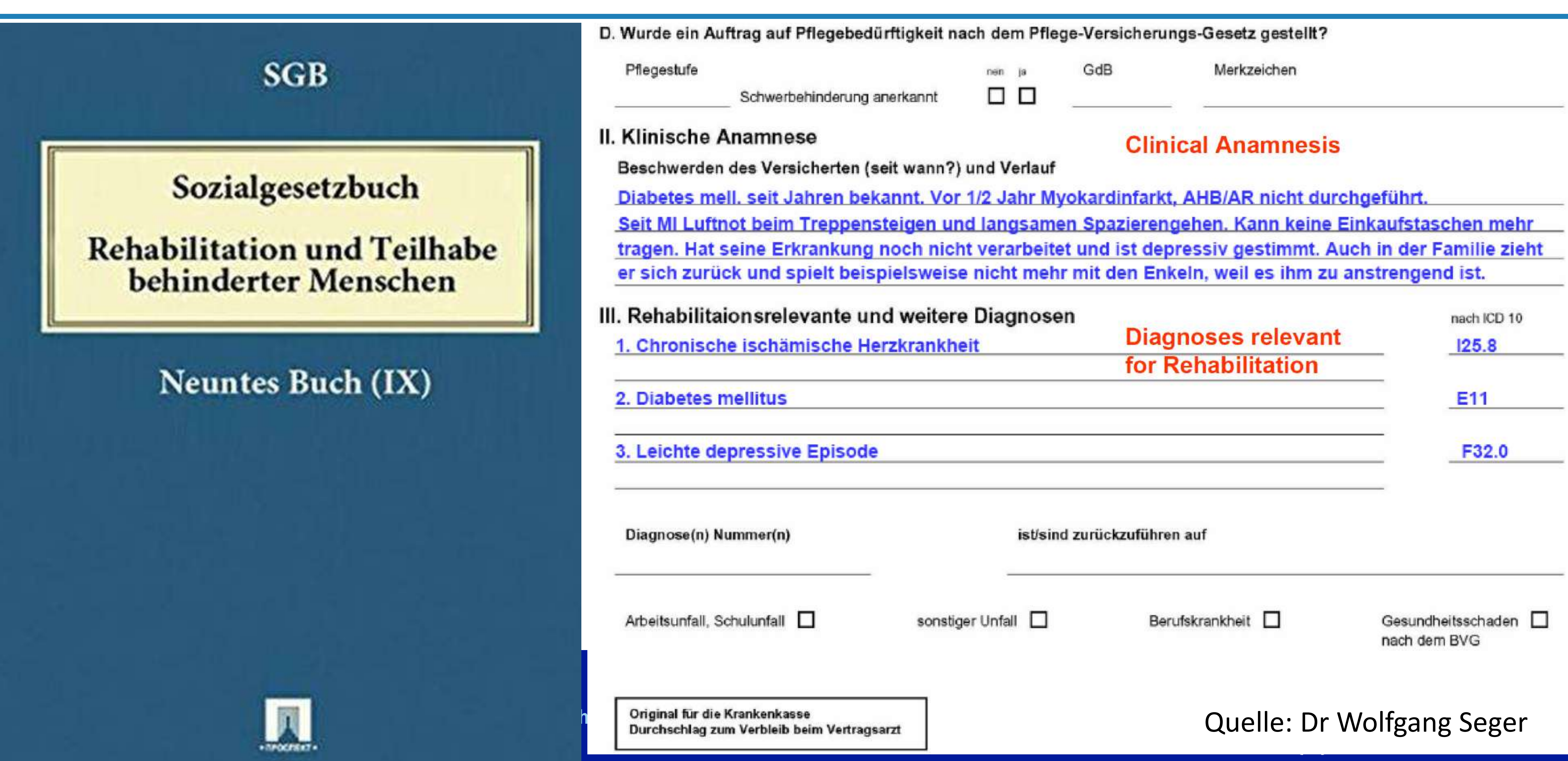




Title of GBD cause			ICD-9 4digit	ICD-10 4digit
Noncommunicable diseases			140-242, 244-259, 270-279 (minus 279.5),282-285 (minus 285.9), 286-319, 324-380, 383-459, 470-478, 490-611, 617-629, 680-759, 7980	C00-C97, D00-D48,D55-D64 (minus D 64.9) D65-D89, E03-E07, E10-E16, E20-E34, E65-E88, F01-F99, G06-G98 (minus G14), H00-H61, H68-H93, I00-I99, J30-J98, K00-K92, N00-N64, N75-N98, L00-L98, M00-M99, Q00-Q99, X41, X42, X45, R95
A.	**Malignant neoplasms**		140-208	C00-C97
	1.	Mouth and oropharynx cancers	140-149	C00-C14
		a. Lip and oral cavity	140-145	C00-C08
		b. Nasopharynx	147	C11
		c. Other pharynx	146, 148, 149	C09-C10, C12-C14
	2.	Oesophagus cancer	150	C15
	3.	Stomach cancer	151	C16
	4.	Colon and rectum cancers	153, 154	C18-C21
	5.	Liver cancer	155	C22
	6.	Pancreas cancer	157	C25
	7.	Trachea, bronchus, lung cancers	162	C33-C34
	8.	Melanoma and other skin cancers	172-173	C43-C44
		a. Malignant skin melanoma	172	C43
		b. Non-melanoma skin cancer	173	C44
	9.	Breast cancer	174, 175	C50
	10.	Cervix uteri cancer	180	C53
	11.	Corpus uteri cancer	179, 182	C54-C55
	12.	Ovary cancer	183	C56
	13.	Prostate cancer	185	C61
	14.	Testicular cancer	186	C62
	15.	Kidney and ureter cancer	189	C64-C66
	16.	Bladder cancer	188	C67

Technical appendix A

Disease & Disorders are ICD coded…



Quelle: Dr Wolfgang Seger

Functioning profiles are often “only” documented with ICF

Vorname, Name des Versicherten Albert Reiter	Kassen-Nr.	Versicherten-Nr.

61 Teil B

Verordnung von medizinischer Rehabilitation

IV. Rehabilitationsbedürftigkeit (medizinische Befunderhebung)

A. Rehabilitationsrelevante Schädigungen (ggf. Befundbögen als Anlage) Impairments of Body Functions and Structures

Hochgradig reduzierte linksventrikuläre Funktion (EF < 30%).

Mittelschwere Schädigung der kardiopulmonalen Funktion

Vorderwandaneurysma mit Thrombus, deshalb Marcumarisierung

Diabetes mellitus mäßig eingestellt

B. Nicht nur vorübergehende alltagsrelevante Beeinträchtigungen der Aktivitäten und/oder Teilhabe

Activity Limitations and Participation Restrictions with Qualifiers

	keine Beeinträchtigungen (No restrictions)	Schwierigkeiten (verlangsamt mit Hilfsmitteln) (Difficulties (retarded with Auxiliary devices))	personelle Hilfe nötig (Help by person necessary)	nicht durchführbar (No performance possible)
Kommunikation (z. B. Sprechen, Sehen, Hören, Schreiben) Communication	☒	☐	☐	☐
Mobilität (z. B. Wechsel Körperhaltung, Tragen, Hand- und Armgebrauch, Gehen, Treppensteigen, Laufen, Bücken) Mobility	☐	☒	☐	☐
Selbstversorgung (z. B. Hygiene, An-/Auskleiden, Nahrungszubereitung/-aufnahme Self-Care	☐	☒	☐	☐
Häusliches Leben (z. B. Haushaltsführung) Domestic Life	☐	☒	☐	☐
Interpersonelle Aktivitäten (z. B. Verhalten, Aufrechterhalten der sozialen Integration) Interpersonal interactions and relationships	☐	☒	☐	☐
Bedeutende Lebensbereiche (z. B. Arbeit und Beschäftigung) Major Life Areas	☐	☐	☐	☒
Sonstiges Other Items				

Aktuelle Assessment-Ergebnisse soweit vorhanden (z. B. Barthel-Index) Ergometrie: Abbruch durch Pat. bei 50 Watt

6-MGT: 180 m, HbA1c: 8,3 %, BMI 32 kg/m², PHQ-D*: 11 Punkte

* Patients-Health-Questionaire

C. Rehabilitationsrelevante positiv/negativ wirkende Kontextfaktoren, soweit noch nicht ausgeführt

Persönliches und familiäres Umfeld (z. B. familiäre Unterstützung, Wohnsituation, Beziehungskonflikte, Pflege eines Angehörigen, Tod eines nahe stehenden Angehörigen)

Eheprobleme seit MI, die Ehefrau ist zunehmend gereizt. Sie ist der Meinung, ihr Mann lasse sich zu sehr hängen.

Personal Factors and Familial Environment

Berufliches/schulisches Umfeld (z. B. drohender Arbeitsplatzverlust, Überforderungssituation)

Occupational / Scholastic Environment

Soziales Umfeld (z. B. Unterstützung durch soziale Dienste, sprachliche Verständigungsschwierigkeiten)

Pat. fühlt sich mit der Betreuung des Enkelkindes überfordert

Social Environment

Risikofaktoren Risk Factors

Nikotin ☒	Alkoholmissbrauch ☐	Übergewicht ☒	Bewegungsmangel ☒
	Drogenmissbrauch/Medikamentenmissbrauch ☐	Sonstiges ☐	

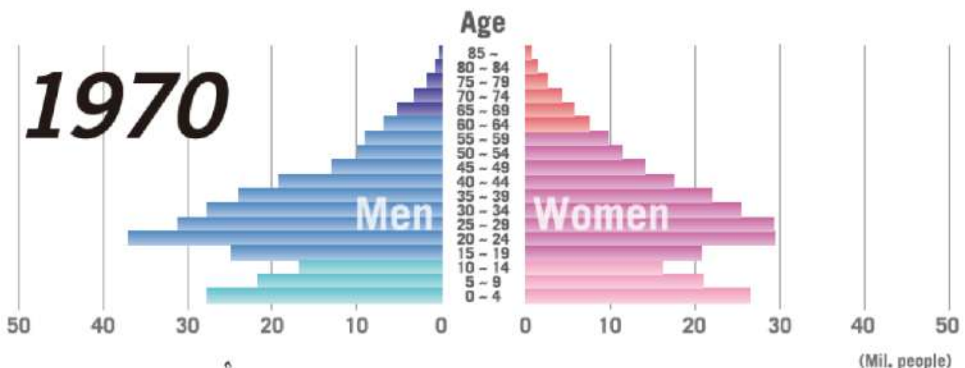
Original für die Krankenkasse
Durchschlag zum Verbleib beim Vertragsarzt

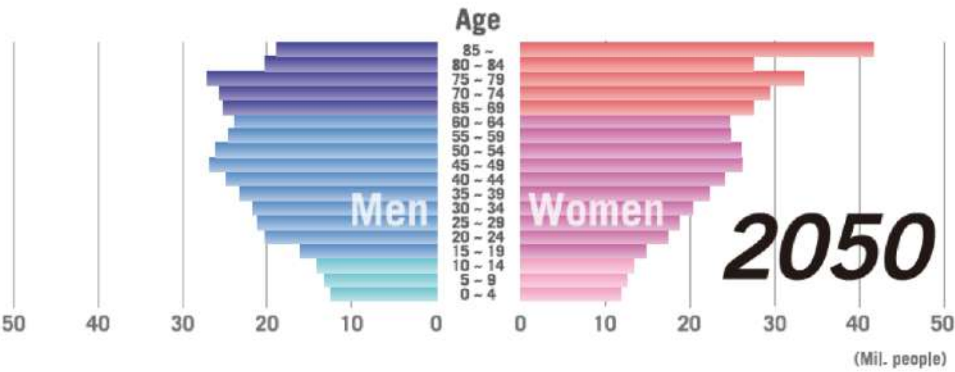
ICF Implementation

- Use of ICF as **conceptual** framework
- Use of ICF categories and definitions for **documentation**
- **Coding** with ICF and **reporting** of ICF coded data

World Health Organization

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

EHR

Wearable

?

?

Cancer Registry

?

Social Security record

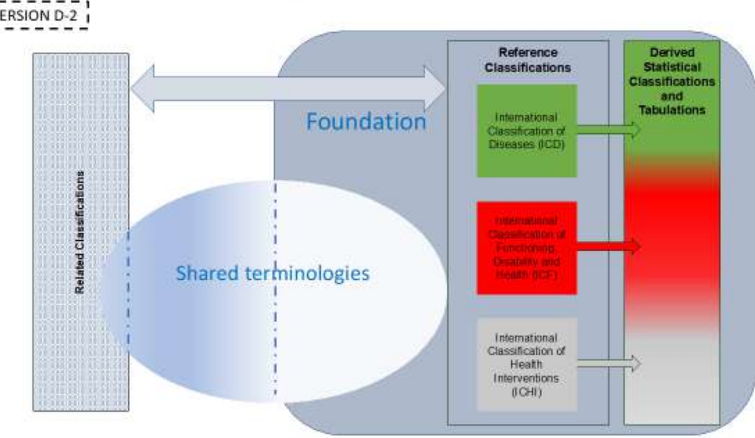
Patient

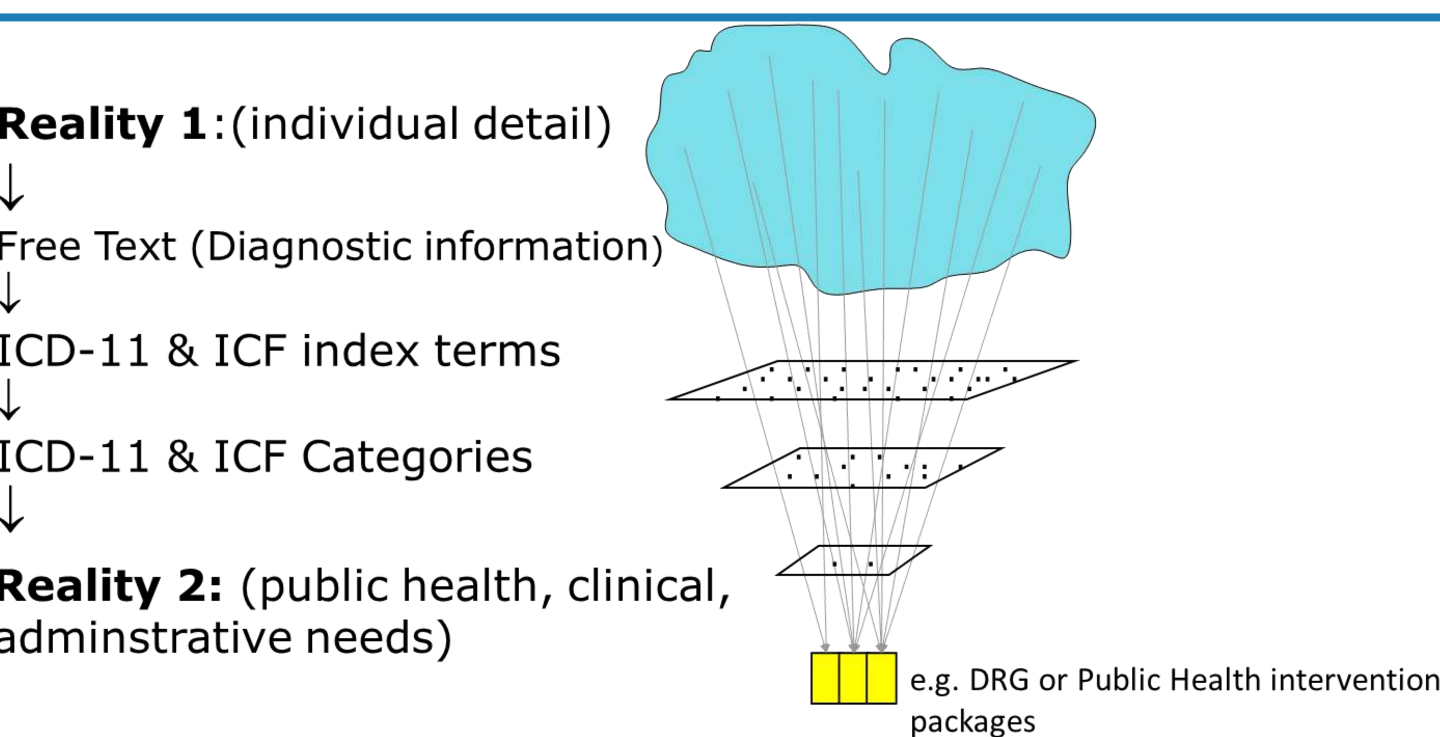
?

Smart toilet

- **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



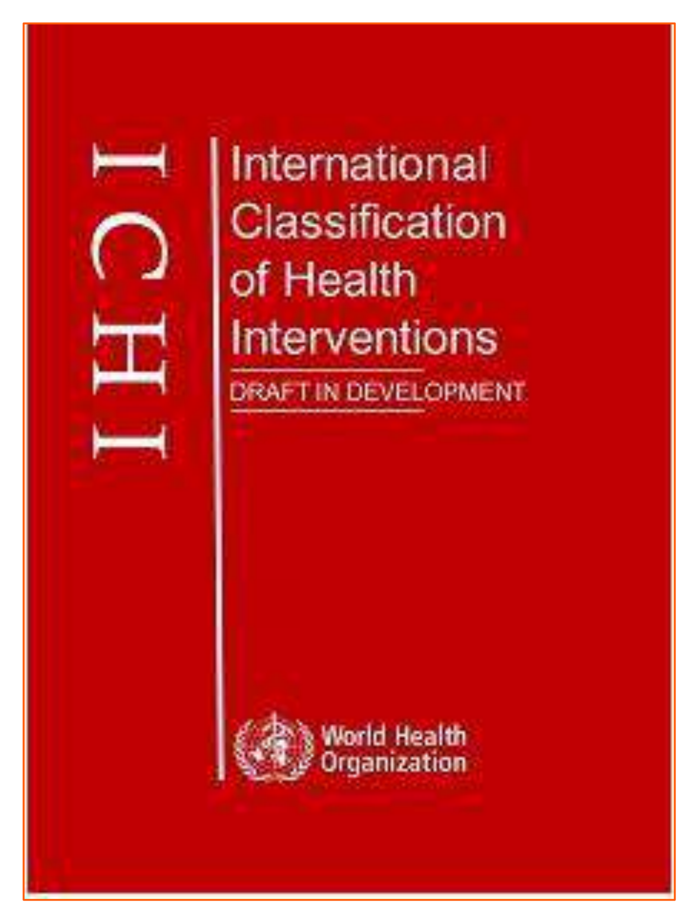


- **Needed ICF developments**
  - Foundation layer
  - Index terms
  - Unique Identifiers
  - Tooling environment (e.g. coding tool, APIs)

Why a supplementary section for functioning in ICD-11

- Using the Functioning section in ICD-11
  - Option1: **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)



Target			
A	Body Part(s) or Anatomical site(s)	D	Environment
B	Body Function	E	Health related Behaviour
C	Activities and Participation		
Action			
A	Diagnostic	C	Managing
B	Therapeutic	D	Preventing
Means			
A	Approach	C	Method
B	Technique	D	Sample
Extension codes (Use when needed)			
A	Therapeutic products		
B	Assistive products		
C	Medicaments		
D	Telehealth		
E	Other (optional) codes		

KBO.JK.AA – Appendicectomy

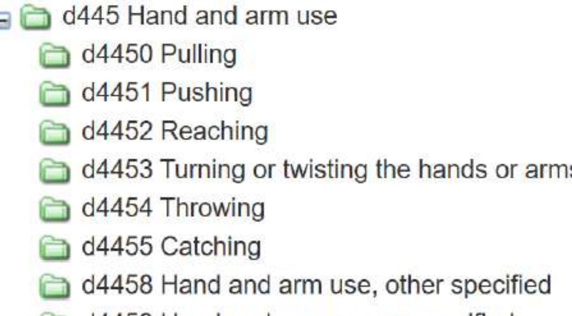
Target KBO - Appendix

Action JK - Excision, total

Means AA - Open approach

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