

PT, OT, and SLP Services and the International Classification of Functioning, Disability, and Health (ICF)

Mapping Therapy Goals to the ICF

Disclaimer

Contents of this presentation are for educational purposes only.

Clinicians should refer to Medicare manuals and contractor instructions for current policies.

Presentation Outline

- Part 1 – Introduction to the ICF
- Part 2 – ICF Resources
- Part 3 – Mapping PT, OT, and SLP intervention goals to the ICF
- Part 4 – Summary

Part 1 – Introduction to the ICF

ICF Background

- The ICF provides a standard language and framework for the description of health and health-related states.
- It is a classification of health and health-related domains, that help to describe:
 - Changes in body function and structure,
 - What a person can do in a standard environment (level of capacity), and
 - What a person can do in their usual environment (level of performance).

ICF Background (cont.)

- ICF is the World Health Organization's (WHO) framework for health and disability.
- ICF is named to stress health and functioning, rather than disability.
- ICF belongs to the WHO family of international classifications (including ICD-10)
- ICF is complimentary to ICD-10 and WHO encourages their use together as ICD-10 classifies mortality, and ICF classifies states of health.
- ICF is a classification system not a clinical measurement tool.

ICF Background (cont.)

- ICF was endorsed in May 2001 by 191 nations, including the United States.
 - Superseded the International Classification of Impairment Disability and Handicap (ICIDH).
- Large international and multidisciplinary participation in development of ICF.
- ICF endorsed by the APTA, AOTA, and ASHA as well as other American healthcare organizations.
- Growing body of outpatient therapy clinical research using ICF since 2001.

Key ICF Definitions

- **Body functions** are the physiological functions of body systems.
- **Body structures** are anatomical parts of the body.
- **Impairments** are problems in body function or structure such as a significant deviation or loss.
- **Activity** is the execution of a task or action.
- **Participation** is involvement in a life situation.
- **Activity limitations** are difficulties in executing activities.
- **Participation restrictions** are problems in involvement in life situations.
- **Environmental factors** make up the physical, social and attitudinal environment in which people live.

Conceptual Model of ICF

- ICF has two *parts*, each with two *components*:

Part 1. Functioning and Disability

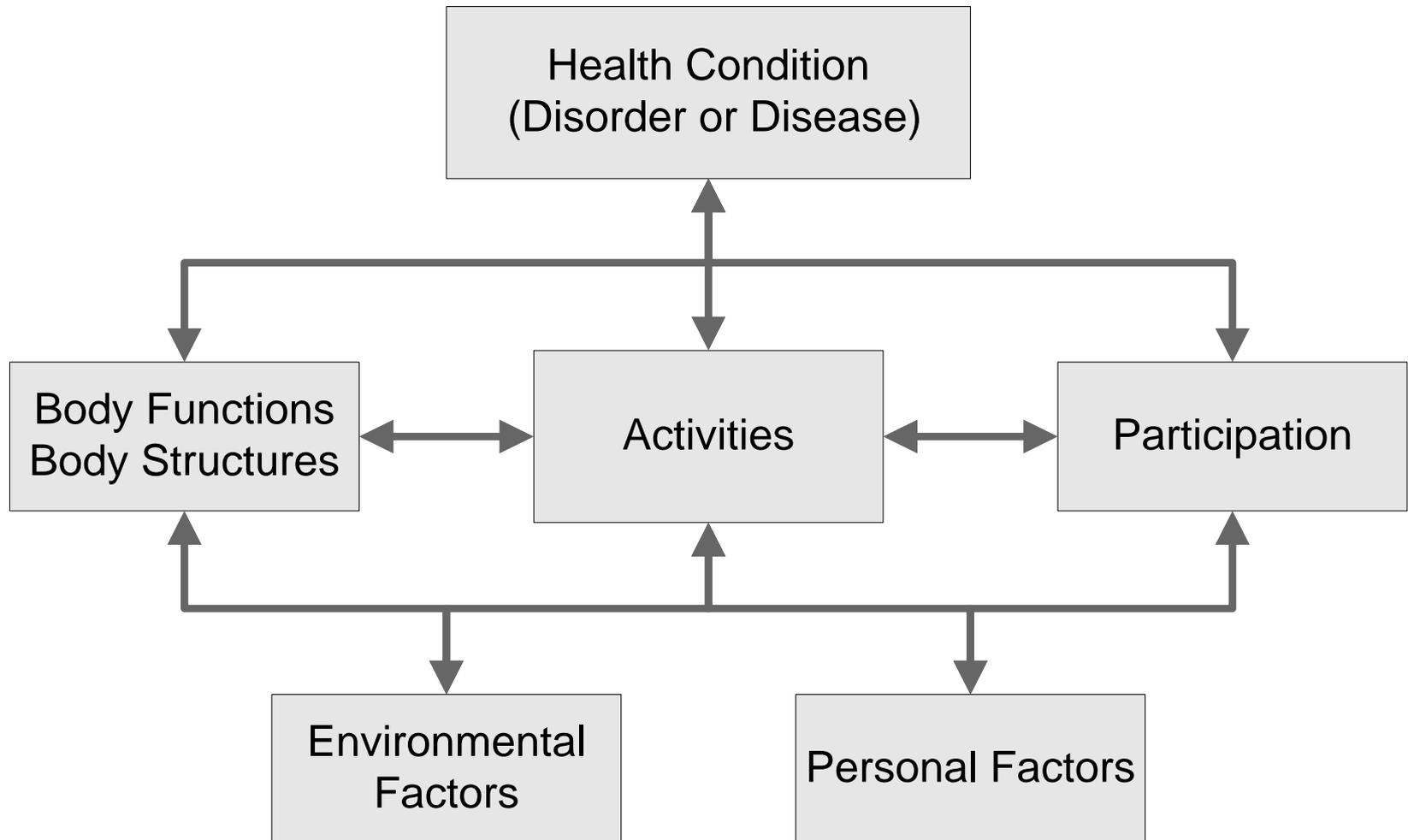
- (a) Body Functions and Structures
- (b) Activities and Participation

Part 2. Contextual Factors

- (c) Environmental Factors
- (d) Personal Factors

- ICF components interact (next slide)

Interaction of ICF Components



Adapted from the World Health Organization *International Classification of Functioning, Disability and Health* (ICF) model, WHO 2001.

Interaction of ICF Components (cont.)

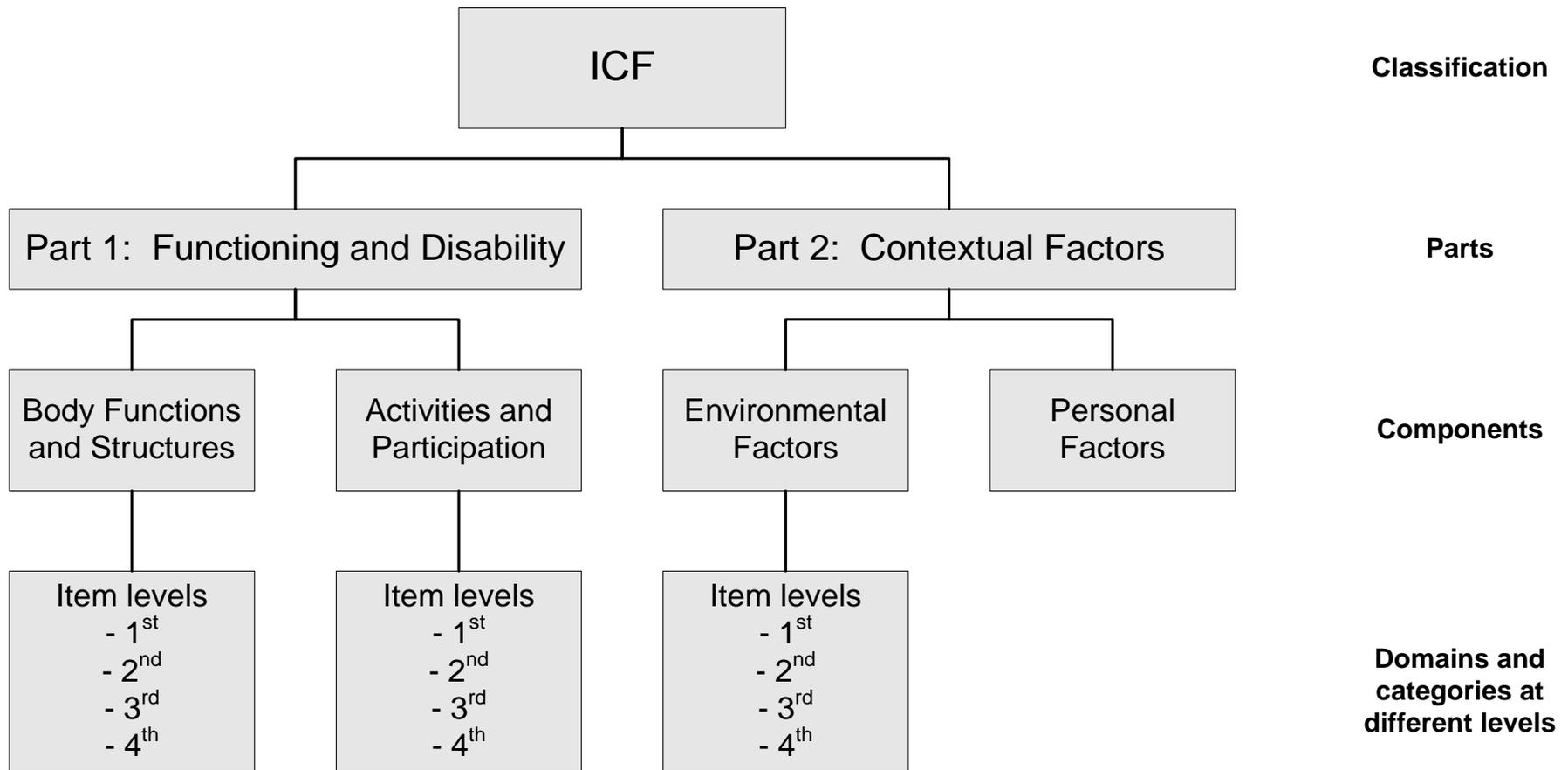
- ICF components can be expressed in both positive and negative terms.

	Positive Term	Negative Term
Overall Health Condition	Function	Disability
Body Functions and Structures	Functional and Structural integrity	Impairment
Activities	Activities participation	Activity limitation, Participation restriction
Environmental Factors	Facilitators (fixed or modifiable)	Barriers (fixed or modifiable)
Personal Factors	Not applicable	Not applicable

Each ICF Component has Multiple Domains

- A domain is a practical and meaningful set of related physiological functions, anatomical structures, actions, tasks, or areas of life.
 - Domains can be described at up to four levels of detail depending on the user's needs.
- Within each component, there is an exhaustive list of domain categories that serve as the units of the classification.
- ICF levels are hierarchically organized and are denoted by unique alphanumeric codes. The categories are arranged in a stem/branch/leaf scheme within each component.
 - For example, the first level comprises all the second level items (next slide).

Each ICF Component has Multiple Domains (cont.)



Adapted from the World Health Organization *International Classification of Functioning, Disability and Health* (ICF) model, WHO 2001.

First Level Classification for ICF Components

- At present there are over 1,400 categories in the ICF so understanding the classification hierarchy is important.
- The first-level classification of domains is at the chapter level.
 - Body Functions = 8 chapters
 - Body Structures = 8 chapters
 - Activities and Participation = 9 chapters
 - Environmental Factors = 5 chapters
 - Personal Factors = Not yet classified
- The following five slides list the chapter names.

Body Structures

CHAPTER 1 - Structures of the nervous system

CHAPTER 2 - The eye, ear and related structures

CHAPTER 3 - Structures involved in voice and speech

CHAPTER 4 - Structures of the cardiovascular,
immunological and respiratory systems

CHAPTER 5 - Structures related to the digestive,
metabolic and endocrine systems

CHAPTER 6 - Structures related to the genitourinary
and reproductive system

CHAPTER 7 - Structures related to movement

CHAPTER 8 - Skin and related structures

Body Functions

CHAPTER 1 - Mental functions

CHAPTER 2 - Sensory functions and pain

CHAPTER 3 - Voice and speech functions

CHAPTER 4 - Functions of the cardiovascular,
hematological, immunological and
respiratory systems

CHAPTER 5 - Functions of the digestive, metabolic and
endocrine systems

CHAPTER 6 - Genitourinary and reproductive functions

CHAPTER 7 - Neuromusculoskeletal and movement
related functions

CHAPTER 8 - Functions of the skin and related structures

Activities and Participation

CHAPTER 1 - Learning and applying knowledge

CHAPTER 2 - General tasks and demands

CHAPTER 3 - Communication

CHAPTER 4 - Mobility

CHAPTER 5 - Self-care

CHAPTER 6 - Domestic Life

CHAPTER 7 - Interpersonal interactions and relationships

CHAPTER 8 - Major life areas

CHAPTER 9 - Community, social and civic life

Environmental Factors

CHAPTER 1 - Products and technology

CHAPTER 2 - Natural environment and human-made
changes to environment

CHAPTER 3 - Support and relationships

CHAPTER 4 - Attitudes

CHAPTER 5 - Services, systems and policies

Personal Factors

- Not coded in ICF because of wide international variability and thus could not agree upon codes.
- Still is included in framework because of its importance to understanding functioning and disability.
- Personal factors include variables such as:

Age	Race
Gender	Food preferences
Individual psychological assets	Fitness
Lifestyle	Habits
Upbringing	Coping Styles
Education	Social Background

ICF Qualifiers

- The ICF domain list becomes a classification when qualifiers are used.
 - Qualifiers record the presence and severity of a problem in functioning at the body, person, and societal levels.
 - One or two qualifiers may apply per ICF domain (next slide).
- ICF has identified the following generic qualifier scale:
 - NO problem (none, absent, negligible) 0-4%
 - MILD problem (slight, low...) 2-24%
 - MODERATE (medium, fair) 25-49%
 - SEVERE (high, extreme, ...) 50-95%
 - COMPLETE (total...) 96-100%
- Generic qualifiers describe the extent of problems in the respective component.
 - Generic qualifiers are used as the 1st qualifier for Body Functions & Structures and Environmental Factors domains.
 - Generic qualifiers are also used as the 1st (performance) and 2nd (capacity) qualifiers for Activities and Participation.
- The 2nd qualifier for Body Structures domains indicate the nature of the body structure change.

ICF Qualifiers (cont.)

Construct	First Qualifier	Second Qualifier
Body Functions	Generic qualifier • Extent or magnitude of impairment	None
Body Structures	Generic qualifier • Extent or magnitude of impairment	Indicates nature of body structure change, e.g. absence, deviating position
Activities & Participation	Generic qualifier • Performance - extent of problem in current environment	Generic qualifier • Capacity - limitation without assistance
Environmental Factors	Generic qualifier • Extent of barriers or facilitators	None

ICF Core Sets

- Clinicians and researchers have identified that more than 1,400 ICF categories is not practical in daily use.
- To facilitate a systematic and comprehensive description of functioning and the use of the ICF in clinical practice and research, *ICF Core Sets* have been developed.
 - Core Sets help users better define high-risk populations by limiting the number of potential ICF categories reported for similar groups of individuals (cohorts).
 - Core Sets help users continually improve their quality processes.
 - Core sets reduce variability in describing the health condition of similar patient cohorts.
 - Core sets support outcomes research for targeted populations.

Type of Core Sets

- Comprehensive
 - Guide for multi-professional comprehensive assessment.
- Brief
 - Minimal standard for assessment and reporting of functioning for clinical studies and clinical reports and encounters.
- Numerous Core Sets have been developed and validated for specific outpatient therapy patient populations.

Part 2 – ICF Resources

World Health Organization (WHO)

ICF Resources

- ICF home page: www.who.int/classifications/icf/
- ICF Training Beginner's Guide (18 pages)
 - At ICF home page, click on 'Application and Training Tools link in the MORE INFORMATION section. The full text link is in the TRAINING MATERIALS section.
- International Classification of Functioning, Disability and Health: ICF (299 pages):
http://www.handicapincifre.it/documenti/ICF_18.pdf
 - Comprehensive ICF manual.
- ICF Research Branch: www.icf-research-branch.org
 - Information about ongoing ICF research and publications including the development of ICF Core Sets.
- ICF Online: Contains interactive ICF Browser tool:
<http://apps.who.int/classifications/icfbrowser/>
 - Can search all ICF categories by the stem/branch/leaf scheme within each component or by keyword (next slide).

ICF Browser Tool

ICF Browser - Windows Internet Explorer

http://apps.who.int/classifications/icfbrowser/

File Edit View Favorites Tools Help

ICF Browser

ICF Browser Language/Version : ICF - English

ICF

- + b BODY FUNCTIONS
- + s BODY STRUCTURES
- + d ACTIVITIES AND PARTICIPATION
- + e ENVIRONMENTAL FACTORS

BODY FUNCTIONS

Search Fields

[\[Search\]](#)

Check the fields to be included in the search

Titles Descriptions Inclusions Exclusions

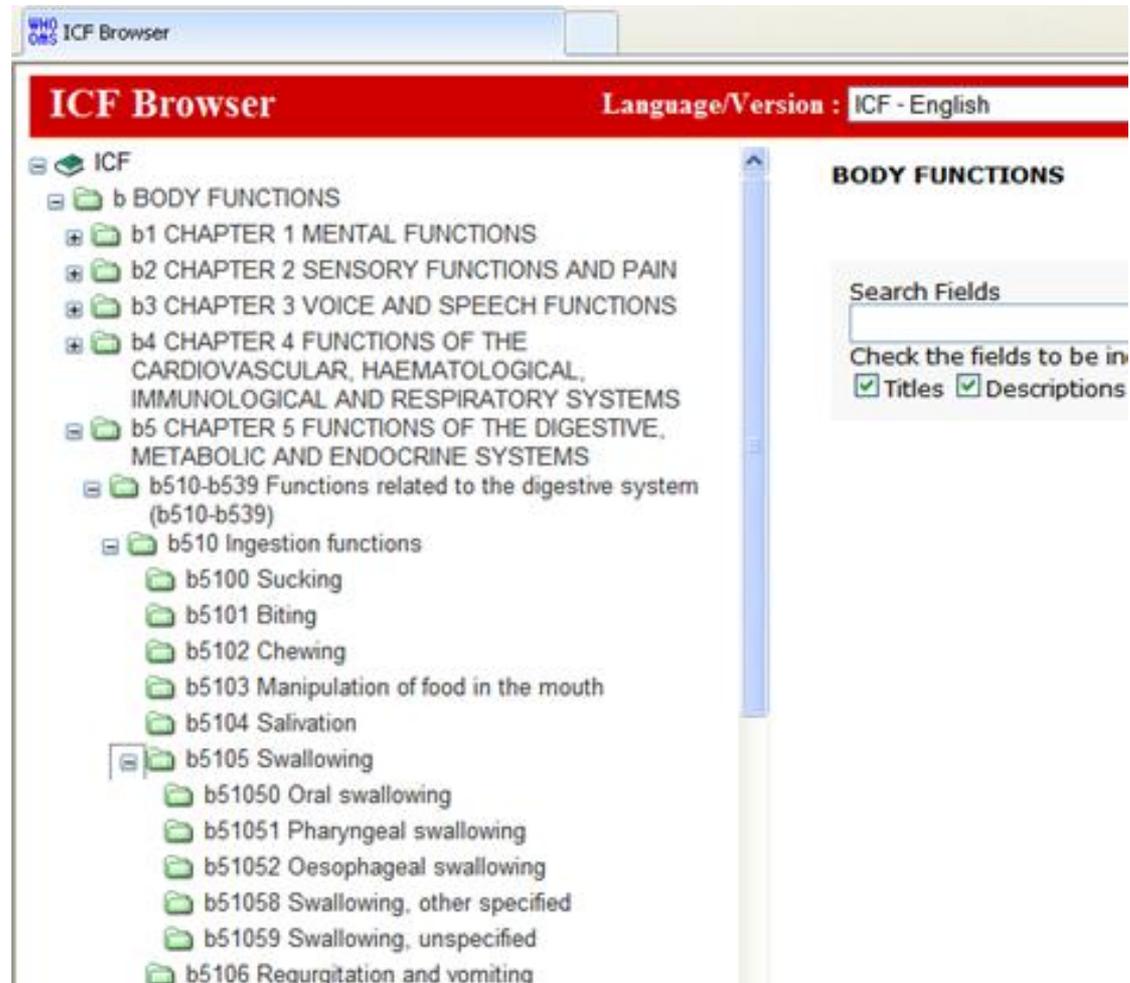
Click on '+' symbol to filter stem/branch/leaf within each component.

or

Enter keyword in search box and check desired fields for domains containing keyword.

ICF Browser Tool: Stem/Branch/Leaf Filter Example

The red arrow indicates the 5 ICF swallowing categories under the Body Functions component located by filtering on the left side of the ICF Browser screen by clicking on successive '+' symbols.



WHO ICF Browser

ICF Browser Language/Version : ICF - English

- ICF
 - b BODY FUNCTIONS
 - b1 CHAPTER 1 MENTAL FUNCTIONS
 - b2 CHAPTER 2 SENSORY FUNCTIONS AND PAIN
 - b3 CHAPTER 3 VOICE AND SPEECH FUNCTIONS
 - b4 CHAPTER 4 FUNCTIONS OF THE CARDIOVASCULAR, HAEMATOLOGICAL, IMMUNOLOGICAL AND RESPIRATORY SYSTEMS
 - b5 CHAPTER 5 FUNCTIONS OF THE DIGESTIVE, METABOLIC AND ENDOCRINE SYSTEMS
 - b510-b539 Functions related to the digestive system (b510-b539)
 - b510 Ingestion functions
 - b5100 Sucking
 - b5101 Biting
 - b5102 Chewing
 - b5103 Manipulation of food in the mouth
 - b5104 Salivation
 - b5105 Swallowing
 - b51050 Oral swallowing
 - b51051 Pharyngeal swallowing
 - b51052 Oesophageal swallowing
 - b51058 Swallowing, other specified
 - b51059 Swallowing, unspecified
 - b5106 Regurgitation and vomiting

BODY FUNCTIONS

Search Fields

Check the fields to be in

Titles Descriptions

ICF Browser Tool: Keyword Search Example

WHO ICF Browser

ICF Browser Language/Version : ICF - English

ICF

- b BODY FUNCTIONS
- s BODY STRUCTURES
- d ACTIVITIES AND PARTICIPATION
- e ENVIRONMENTAL FACTORS

BODY FUNCTIONS

Search Fields
Swallowing [Search]

Check the fields to be included in the search
 Titles Descriptions Inclusions Exclusions

The red arrow indicates the 'Swallowing' keyword was entered.

WHO ICF Browser

ICF Browser Language/Version : ICF - English

ICF

- b BODY FUNCTIONS
- s BODY STRUCTURES
- d ACTIVITIES AND PARTICIPATION
- e ENVIRONMENTAL FACTORS

Search Results

- b510 Ingestion functions
- b5105 Swallowing
- b51050 Oral swallowing
- b51051 Pharyngeal swallowing
- b51052 Oesophageal swallowing
- b51058 Swallowing, other specified
- b51059 Swallowing, unspecified

The red arrow indicates the search results for ICF categories that contain the keyword 'Swallowing'.

Therapy Professional Association ICF Resources

- APTA: www.apta.org
 - From home page ‘Areas of Interest’ section, click on ‘Practice’ link, then ‘Clinical Practice Resources’ link, then ‘ICF Resources’ link.
- AOTA: www.aota.org
- ASHA: www.asha.org/slp/icf.htm

Part 3 – Mapping PT, OT, and SLP intervention goals to the ICF

PT, OT and SLP Case Scenarios

- Using standardized ICF terminology to describe patient function and intervention goals can enhance interdisciplinary communication and comparison of outcomes.
- Case scenarios demonstrate how clinicians can map patient problems to ICF categories to describe;
 - Prior function,
 - Current function, and
 - Intervention goals
- The following slides contain outpatient therapy case scenarios for:
 - PT – Knee pain,
 - OT – Multiple Sclerosis (MS), and
 - SLP – Left hemisphere stroke
- The case scenarios include;
 - Brief clinical vignettes, and
 - Mapping of case scenario from examination, to ICF classification, to intervention goals.
- Note: These are examples and all potential goals are not detailed in the goal mapping scenarios.

PT Case Scenario: ICF Mapped to Knee Pain

Background

- 75 year old active female with R knee pain past two weeks after gardening. No prior pain history.
- Lives alone in ranch home but encounters stairs in community.
- Pain on visual analog scale is 4/10 ascending and descending stairs and when squatting. Pain is 1-2/10 when walking on level surfaces and when driving. Unchanged past two weeks.
- Activity tolerance reduced from over 60 minutes to 30 minutes.
- X-rays reveal mild degenerative changes.
- History of mild hypertension (controlled with medication) and occasional low back pain.

Diagnosis

- Primary – Osteoarthritis, localized, primary, lower leg (715.16)
- Secondary – Pain in joint, lower leg (719.46)

PT Case Scenario (cont): ICF Mapped to Knee Pain

Patient goals

- Return to pain-free prior activity level.

Examination

- Pain 4/10 walking up and down stairs and when squatting, and 1-2/10 walking on level and when driving .
- Mild R quadriceps atrophy without edema.
- R quadriceps strength 4/5.
- R knee active and passive range-of-motion (ROM) 0-125 degrees.
- Gait pattern without deviation.

Intervention goals

- R knee pain-free with activity
- R knee quadriceps strength restored to 5/5
- R knee active and passive ROM increased to 0-135 degrees

PT Case Scenario (cont): ICF Mapped to Knee Pain

Examination	Pain on visual analog scale is 4/10 when ascending and descending stairs and when squatting. Pain is 1-2/10 when walking on level surfaces and when driving.
ICF classification selected	b28016 - pain in joints
ICF category – definition	Sensation of unpleasant feeling indicating potential or actual damage to some body structure felt in one or more joints, including small and big joints.
ICF category with qualifier– prior function	b28016.0 – Pain in joints, no problem
ICF category with qualifier – current function	b28016.2 – Pain in joints, moderate problem
ICF category with qualifier – goal function	b28016.0 – Pain in joints, no problem
PT goal	Right knee pain-free with activities, walking on level surfaces, ascending and descending stairs, squatting, and driving.

PT Case Scenario (cont): ICF Mapped to Knee Pain

Examination	Strength in right quadriceps 4/5
ICF classification selected	b7300 – Power of isolated muscles and muscle groups
ICF category – definition	Functions related to the force generated by the contraction of specific and isolated muscles and muscle groups.
ICF category with qualifier– prior function	b7300.0 – Power of isolated muscles and muscle groups, no impairment
ICF category with qualifier – current function	b7300.1 – Power of isolated muscles and muscle groups, mild impairment
ICF category with qualifier – goal function	b7300.0 – Power of isolated muscles and muscle groups, no impairment
PT goal	R knee quadriceps strength restored to 5/5.

OT Case Scenario: ICF Mapped to Multiple Sclerosis

Background

- 54 year old female with secondary multiple sclerosis (MS).
- Lives in ranch home with husband and two college-age children.
- Diagnosed with MS 15 years, with progressive weakening past 5 years. Increased falls in past year and began using power wheelchair one month ago but has difficulty with transfers and maneuvering wheelchair in home. Also, now requires assistance with activities of daily living (ADL) and has reduced social activities in past year.

Diagnosis

- Primary – Multiple sclerosis (ICD-9: 340.0)
- Secondary – Abnormality of gait (ICD-9: 781.2) and Muscle weakness, generalized (ICD-9: 728.87)

OT Case Scenario (cont.): ICF Mapped to Multiple Sclerosis

Patient goals

- Regain independence with ADLs, transfers, and wheelchair mobility, and return to prior social activities.

Examination

- Normal cognition, with mild depression and anxiety.
- Lower extremity range-of-motion within normal limits with spasticity and mild ataxia, and strength is generally 3-/5. Endurance to activity is poor.
- Currently feeding, bathing and upper body dressing are modified independent. Lower body dressing, toileting, and bed/toilet/wheelchair transfers require moderate assist. Able to stand and take few steps with moderate assist. These all affect ability to manage household.
- Household environment has numerous barriers limiting mobility and ADLs.

Intervention goals

- Bed, toilet, and wheelchair transfers with modified independence using adaptive equipment after home modifications.
- Toileting with modified independence after home modifications.
- Meal preparation independently for self and family using compensatory strategies and adaptive equipment after home modifications.

OT Case Scenario (cont.): ICF Mapped to Multiple Sclerosis

Examination	Bed, toilet, and wheelchair transfers require moderate assist. Environmental barriers are present.
ICF classification selected	d4200 – Transferring oneself while sitting
ICF category – definition	Moving from a sitting position on one seat to another on the same or a different level, such as moving from a chair to a bed.
ICF category with qualifier– prior function	d4200.0 – Transferring oneself while sitting, no activity limitation
ICF category with qualifier – current function	d4200.2 – Transferring oneself while sitting, moderate activity limitation
ICF category with qualifier – goal function	d4200.0 – Transferring oneself while sitting, no activity limitation
OT goal	Bed to chair transfers with modified independence using adaptive equipment after home modifications.

OT Case Scenario (cont.): ICF Mapped to Multiple Sclerosis

Examination	Household environment has numerous barriers limiting mobility.
ICF classification selected	e1201 Assistive products and technology for personal indoor and outdoor mobility and transportation.
ICF category – definition	Adapted or specially designed equipment, products and technologies that assist people to move inside and outside buildings, such as walking devices, special cars and vans, adaptations to vehicles, wheelchairs, scooters and transfer devices.
ICF category with qualifier– prior function	e1201.0 – Assistive products and technology for personal indoor and outdoor mobility and transportation, no barrier.
ICF category with qualifier – current function	e1201.2 – Assistive products and technology for personal indoor and outdoor mobility and transportation, moderate barrier.
ICF category with qualifier – goal function	e1201+4 – Assistive products and technology for personal indoor and outdoor mobility and transportation, complete facilitator
OT goal	Adaptive equipment provided and environmental modifications complete to facilitate mobility independence.

SLP Case Scenario:

ICF Mapped to L Hemisphere Stroke

Background

- 82 year old male with history of hypertension, COPD and depression .
- Suffered a L hemisphere stroke six weeks ago affecting R upper and lower limbs, ability to swallow, and ability to speak clearly.
- Lives with supportive wife in 3-bedroom bungalow and has very supportive children, grandchildren and church in community.

Diagnosis

- Primary – Left hemisphere stroke (ICD-9: 436)
- Secondary – Dysarthria (ICD-9: 438.13), Dysphagia, late effects (ICD-9: 438.82), Dysphagia, oropharyngeal stage (ICD-9:787.22), and Aphasia, late effects (ICD-9: 438.11)

SLP Case Scenario (cont.): ICF Mapped to L Hemisphere Stroke

Patient goals

- Desire to return to teaching bible study at church.

Examination

- Moderate dysarthria with reduced intelligibility in short phrases and sentences.
- Moderate spoken language comprehension deficit.
- Moderate oropharyngeal dysphagia with decreased bolus manipulation, delayed swallow initiation, pharyngeal residue after the swallow, and laryngeal penetration with thin liquids that is cleared spontaneously.

Intervention goals

- Increase intelligibility of simple phrases and sentences in a structured environment.
- Respond correctly to questions about daily activities with decreased need for visual cues.
- Patient will tolerate trials of regular diet and thin liquids with the SLP with no signs or symptoms of dysphagia.

SLP Case Scenario (cont.): ICF Mapped to L Hemisphere Stroke

Examination	Moderate dysarthria with reduced intelligibility in short phrases and sentences.
ICF classification selected	b320 – Articulation functions
ICF category – definition	Functions of the production of speech sounds.
ICF category with qualifier– prior function	b320.0 – Articulation functions, no impairment
ICF category with qualifier – current function	b320.2 – Articulation functions, moderate impairment
ICF category with qualifier – goal function	b320.1 – Articulation functions, mild impairment
SLP goal	Patient will increase intelligibility of simple phrases and sentences in a structured environment.

SLP Case Scenario (cont.): ICF Mapped to L Hemisphere Stroke

Examination	Moderate oropharyngeal dysphagia with decreased bolus manipulation, delayed swallow initiation, pharyngeal residue after the swallow, and laryngeal penetration with thin liquids that is cleared spontaneously.
ICF classification selected	b5105 – Swallowing
ICF category – definition	Functions of clearing the food and drink through the oral cavity, pharynx and oesophagus into the stomach at an appropriate rate and speed.
ICF category with qualifier– prior function	b5105.0 – Swallowing, no impairment
ICF category with qualifier – current function	b5105.2 – Swallowing, moderate impairment
ICF category with qualifier – goal function	b5105.1 – Swallowing, mild impairment
SLP goal	Patient will tolerate trials of regular diet and thin liquids with the SLP with no signs or symptoms of dysphagia.

Part 4 – Summary

The Goals of the ICF

- To provide a scientific basis for the consequences of health conditions.
- To establish a common language to improve communications.
- To permit comparisons of data across:
 - Countries,
 - Health care disciplines,
 - Services, and
 - Time.
- To provide a systematic coding scheme for health information systems.

ICF Emphasizes Function

- The ICF provides a biopsychosocial (rather than a biomedical) framework to understand phenomena related to function.
- Problems that rehabilitation professionals address involve interactions among multiple factors, including the individual's;
 - Body structures and functions,
 - Ability to perform activities and participate in society,
 - Environmental barriers and facilitators present, and
 - Personal factors unrelated to the health condition, but that may influence function and disability.

ICF is Useful for Clinical Purposes

- Guide thinking and clinical decision-making.
 - Individual and interdisciplinary care plan development.
- Assist when communicating with patients, clients, families, students, and colleagues.
 - Common terminology reduces misunderstandings.
- Plan research that is consistent with a whole view of the person in his or her environment.
 - Measurement tools and clinical documentation can be mapped to ICF permitting comparison study.

Mapping Therapy Goals to the ICF

- ICF highlights a range of intervention targets;
 - Over 1,400 available ICF categories, and
 - Disease, setting, and other Core Sets provide lists of clinically relevant ICF categories.
- ICF category terminology can be used to define functional problems, which can help identify intervention goals.
- ICF qualifier terminology can be used to describe the extent of problems a person may be having, which can help demonstrate need for services.
- ICF terminology can describe function-specific outcomes of therapy interventions in a standardized language, which can support comparative outcomes research and payment decisions .