ICF and EBP: Thinking Beyond

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WHO definition of Health

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

Communication disorders may be caused by disease but it is not itself a disease

Our clients are not necessarily “sick”

Health as ability to live life to its fullness

2016 Scope of Practice for Speech-Language Pathology – 1st page

“The practice of speech-language pathology continually evolves. SLP’s play critical roles in health literacy; screening, diagnosis, and treatment of autism spectrum disorder; and the use of the International Classification of Functioning, Disability, and Health (ICF, World Health Organization) to develop functional goals and collaborative practice.

“...”

2016 Scope of Practice for Speech-Language Pathology – cont.

“The overall objective of speech-language pathology services is to optimize individuals’ abilities to communicate and to swallow, thereby improving quality of life. As the population of the United States continues to become increasingly diverse, SLP’s are committed to the provision of culturally and linguistically appropriate services and to the consideration of diversity in scientific investigations of human communication and swallowing”
The domains of speech-language pathology service delivery complement the ICF, the WHO multipurpose health classification system (WHO, 2014). The classification system provides a standard language and framework for the description of functioning and health. The ICF framework is useful in describing the breadth of the role of the SLP in the prevention, assessment, and habilitation/rehabilitation of communication and swallowing disorders and the enhancement and scientific investigation of those functions.

Evidence Based Practice

Beginnings

- Archibald Cochrane, epidemiologist, started writing about it in 1970’s
- David Sackett, epidemiologist in Canada
- First in Canada and U.K., then 1992 U.S. joined the party with publication in journal Journal of American Medical Association (JAMA)

Expanded Definition of EBP- Sackett, Strauss, Richardson, Rosenberg, and Haynes, 2000

Evidence Based Practice

Clinical
Best Current
Research
Client Values

ASHA’s magic triangle of EBP

Clinical expertise

Evidence Based Practice

Clinical Decision Making

Research evidence

Patient values

Application of EBP to Communication Disorders

- Research – often not there in classic sense of randomized controlled trials
  - Fight our own game - e.g. single subject designs
- Clinical expertise- Time does not make better but reflective time can, expert panels that truly objective.
- Client preferences- One of principle ethical tenets in health care is autonomy.
  - Communication is personal level- not objective like blood pressure

EBP- Clinical Expertise and Patient Values- The Neglected 2/3rd

- Clinical Expertise
  - Doing it a long time does not make one automatically better
  - Read the literature, follow the protocol, see if it works for clients as a whole or a subset of clients. If it does, great. If not, drop it. Comparing it to success before
  - Your own single subject design
  - Conference- let’s discuss what has worked and not worked
  - Use the patient and family as resources on where to go, what works best at home
  - When something works, think “How could I make it better?” or “How can I make it work in less time?”
  - If conflicts with research, go with the clinical process in a real person in front of you.
Patient values

- Research shows better the mutual respect of the relationship better the outcomes
- Do you think you have gotten better? How? Does this make you happy
- How do things seem to be going
- How well do some skills
- How often need or wish to do
- How much miss not doing
- On scale how much miss
- Rank ordered what frustrates you the most
- How upset are you usually about not being able to do as well on this task
- Any new activities taken up to make up for ones can no longer do? How is that working?

Best multicultural assessment-Tell me about your life before your stroke and how it is now. But only works if mutual respect established

If can’t get from patient and families what they want or what change would mean the most to their quality of life, then cannot have the best possible outcomes.

Responsibilities of Clinical Researchers

- Clinical researchers should pick relevant clinical topics, including recognizing inherent complexity.
- Clinical researchers should include enough information in articles to fully understand all aspects of the study
- Clinical researchers should write in a way that clinicians can understand and implement if wish

EBP reporting in journals

- Cannot do meta-analysis if authors writing of results varies too widely
- Cannot easily review abstracts for possible further study if no consistent structure of abstracts

Oxford Centre for Evidence-based Medicine Levels (2001)

- Therapy/Prevention, etiology, harm
- Prognosis
- Diagnosis
- Differential diagnoses/symptom prevalence study
- Economic and decision analysis

Classic Levels of Evidence-Intervention

1a -- Meta-analysis of >1 randomized controlled trial
1b -- Well-designed randomized controlled study without randomization
1b -- Well-designed quasi-experimental study
II -- Well-designed non-experimental studies, i.e., correlation and case studies
IV -- Expert committee report, consensus conference, clinical experience of respected authorities

Message often missed -
  - May be a hierarchy but all above are evidence

EBP and all clinical fields

- Without evidence, funds can be cut at will
- More data kept centrally means more accountability, easier for governments to do comparisons among facilities, regions, settings
- Can also see who has given outcomes for the least cost
Evidence based practice and cultural/personal variation

- Not just for bleeding hearts anymore
- Can look, technically, at syndromes and diseases without looking at culture- but cannot look at functioning in one’s chosen life and quality of life without examining all aspects of culture
- Cannot achieve meaningful real life outcomes without examining the person in their life contexts

Bad EBP Questions

- Bad questions
  - Does therapy work?
    - As bad as “Does surgery work?”
    - Or “Is private school good for children?”
  - What does mean? At Body Function level? Which Body Function level? At Activity/Participation level? At Environmental Factors level?
  - What does work mean? Is statistical significance enough or effect sizes or neither? Is it patient satisfaction? Is it quality of life? Is it able to go back to work?
  - Quality of therapist
    - Does therapy X better than therapy Y?
      - Better for whom?
      - Better for which conditions?
      - Better for which time frames?
      - Quality of therapist

One aspect of Function-Use of ICF

- Need more than just HOW to do a study but need direction on WHAT and WHY study
- Understand different aspects of functioning and how interact with each other

What can guide EBP efforts

- Can get from philosophy or theory
- Can get from models of functioning and disability
- Can also get from frameworks
- Can even get from dreaded classification system if classification has as its goal not merely to count but to challenge and to improve conditions

International Classification of Functioning, Disability, and Health (ICF)

- 2001 publication of the World Health Organization
- Significantly revised and expanded version of the 1980 International Classification of Impairments, Disabilities, and Handicaps (ICIDH)

US Department Health and Human Services

- National Committee on Vital and Health Statistics (NCVHS)
  - CLASSIFYING AND REPORTING FUNCTIONAL STATUS, 2001
The point has already been made that administrative data generally do not include information on functional status. The significance of this fact is that information on this dimension of health -- increasingly the sine qua non for understanding health -- is not available to the health care system (e.g., insurers and health plans), nor to the researchers, public health workers, and policy makers who depend on administrative data (p. 6).

Most diagnoses alone convey little about their effects on people’s daily activities or the impact of people’s social or physical environments. Diagnosis does not reveal or predict function -- and function has an enormous effect on utilization rates and is a good indicator of quality of care, among other things. (p.6)

Without functional status information, the researchers, policy makers, and others who are already using administrative data have at best a rough idea of how people, individually and collectively, are doing -- and at worst they are making erroneous assumptions and decisions. (p.7)

We have concluded that, in the long-term, the most feasible payment model for outpatient therapy services is one that is based on the episode of care. Provider payments should be influenced by underlying beneficiary characteristics, as Congress has requested. To assure appropriate payment for needed services, the outcomes resulting from provider interventions must be incorporated in payment models. Also, a well-designed long-term payment policy will maintain the clinician’s ability to use clinical judgment to provide medically necessary services.

However, clinicians will need to communicate standardized information using a function and/or outcomes reporting tool that could be used for quality and/or risk-adjustment payment policy purposes. The tool should align with the International Classification of Diseases, 10th revision (ICD-10) and International Classification of Function (ICF) systems to improve standardization of reporting and documentation. Many of the burdensome granular policies that serve to control utilization without regard to the patient’s clinical presentation (e.g., edits) may (and should) be eliminated since the emphasis of payment policy will have shifted from managing procedures billed to the management of patient progress or outcomes.
ICF and ASHA

- In Scope of Practice since 2001, and in 2016 version as framework for field
- Has section on ASHA website page
  - [http://www.asha.org/slp/icf/](http://www.asha.org/slp/icf/)

The International Classification of Functioning, Disability and Health (ICF) (WHO, 2001)

- Describes functioning of persons 18 years and older

The International Classification of Functioning, Disability, and Health for Children and Youth (ICF-CY) -2007

- Describes functioning for persons from birth to age 17

Aims of ICF

ICF is a multipurpose classification designed to serve various disciplines and different sectors. Its specific aims can be summarized as follows:

- To provide a scientific basis for understanding and studying health and health-related states, outcomes and determinants;
- To establish a common language for describing health and health-related states in order to improve communication between different users, such as health care workers, researchers, policy-makers and the public, including people with disabilities;
- To permit comparison of data across countries, health care disciplines, services and time;
- To provide a systematic coding scheme for health information systems.
Applications of ICF

As a statistical tool – in the collection and recording of data (e.g. in population studies and surveys or in management information systems);

- As a research tool - to measure outcomes, quality of life or environmental factors;

Applications - 2

- As a clinical tool – in needs assessment, matching treatments with specific conditions, vocational assessment, rehabilitation and outcome evaluation;

- As a social policy tool – in social security planning, compensation systems and policy design and implementation;

- As an educational tool – in curriculum design and to raise awareness and undertake social actions.

ICF endorsements/adoption

- American Occupational Therapy Association
- Association of Rehabilitation Nurses
- American Physical Therapy Association
- International Society of Physical Medicine and Rehabilitation
- Institute of Medicine
- National Library of Medicine- USA
- Centers for Disease Control and Prevention- USA

WHO Classification

- ICF and ICF-CY combined into one

- Ultimately ICD and ICF form one document capturing all components of health

ICF Framework

Health Condition (disorder/disease)

Body function&structure (Impairment)

Activities (Limitation)

Participation (Restriction)

Environmental Factors

Personal Factors
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

- Age
- Race
- Gender
- Food preferences
- Individual psychological assets
- Fitness
- Lifestyle
- Habits
- Upbringing
- Coping Styles
- Education
- Social Background
- Other health conditions
Body Structure
- s11000 Frontal lobe
- s11001 Temporal lobe
- s1105 Structure of brain stem
- s1106 Structure of cranial nerves

Body Function
- b1402 - Dividing attention
- b1442 - Retrieval of memory
- b1644 - Insight
- b1646 – Problem solving
- b16700 – Reception of spoken language
- b176 - Mental function of sequencing complex movements

Activity/Participation-
- d2200 - Carrying out multiple tasks
- d2302 - Completing the daily routine
- d2401 - Handling stress
- d730 – Relating with strangers
- d8451 – Maintaining a job

Activity/Participation -2
- d3150 Communicating with – receiving – body gestures
  Comprehending the meaning conveyed by facial expressions, hand movements or signs, body postures, and other forms of body language.
- d3151 Communicating with – receiving – general signs and symbols
  Comprehending the meaning represented by public signs and symbols, such as traffic signs, warning symbols, musical or scientific notations, and icons

Environmental Factors-
- e500 Sound intensity
- e310 Immediate family
- e330 People in positions of authority
- e355 Health professionals
- e450 Individual attitudes of health professionals
- e460 Societal attitudes

Universal Qualifier Denotes severity
- xxx.0 NO problem (none, absent, negligible) 0-4%
- xxx.1 MILD problem (slight, low...) 2.24%
- xxx.2 MODERATE (medium, fair) 25-49%
- xxx.3 SEVERE (high, extreme, ...) 50-95%
- xxx.4 COMPLETE (total...) 96-100%
- xxx.8 not specified
- xxx.9 not applicable

E.g. 100.2 would indicate a moderate problem in this area
Activity/Participation Qualifiers

- Uses Universal Qualifier ranges for all four qualifiers
  - Performance - how person does in their natural environment
  - Capacity without assistance - how person does in clinical setting without assistance
  - Capacity with assistance - how person does in clinical setting with assistance
  - Performance without assistance - how person would perform in environment without assistance

Environmental Factors Qualifiers

- Can either be a Facilitator or Barrier
  - Universal qualifier applies to barriers or impediments to function
    - Facilitating qualifiers
      - +0 - No facilitator
      - +1 - Mild facilitator
      - +2 - Moderate facilitator
      - +3 - Substantial facilitator
      - +4 - Complete facilitator

US Federal Government and ICF Qualifiers

- Flirtation with G codes, ICF lite
- Will be seven point scale
- Current chaos

Body Structure and Function

- Amyloid plaques and neurofibrillary tangles
- Decreased memory, problem solving, agitation

Activity/Participation

- Poor academic performance, reduced ability to participate in conversations, difficulty interacting with peers, impaired psycho-social growth, difficulty later becoming employed.

Environmental Factors

- Barriers: Noise in room, poor hearing of spouse/partner, attitudes of others that speech indicates reduced intelligence and/or competence
- Facilitators: Supportive family, availability therapy services, better management of disease

Motor speech disorder (e.g., Parkinson's Disease)

- Reduced ability to participate in conversations, enjoy social events such as weddings, social isolation possible

Developmental language disorder

- Theorized disruption of neural structures for developing language
- Speech sound disorders, difficulty learning syntax, difficulty learning to read
- Poor academic performance, reduced ability to participate in conversations, difficulty interacting with peers, impaired psycho-social growth, difficulty later becoming employed.
- Theorized impairment of regions that contribute to speech production
- Reduced ability to participate in conversation, enjoy social events such as weddings, social isolation possible

Personal factors

- Personality, co-morbid factors, reaction to disability, family socio-economic status, culture
- Personality, co-morbid factors, reaction to disability, financial resources

Activity/Participation

- Performance - how person does in their natural environment
- Capacity without assistance - how person does in clinical setting without assistance
- Capacity with assistance - how person does in clinical setting with assistance
- Performance without assistance - how person would perform in environment without assistance
Dysphagia (swallowing disorder) - Medical Condition
- Can lead to aspiration pneumonia
- Can lead to malnutrition
- Can lead to dehydration
- Can lead to decreased functioning of pulmonary system
- Can interfere with ability to take medications per oral
- Can increase likelihood of bacteria infections in oral cavity secondary to decreased ability to clear saliva

Dysphagia - Disability
- Is often a chronic condition
- Patients and/or significant others could view the person as less competent
- Can limit social interactions
- Can cause depression
- Can limit ability to participate in family/community events

Body Structure- Swallowing
- S320 Structure of mouth
  - Teeth
  - Gums
  - S3202 Structure of palate
  - S3203 Tongue
  - S3204 Structure of lips
- S3208 Structure of mouth, other specified
- S3209 Structure of mouth, unspecified
- S310 Structure of salivary glands
- S520 Structure of oesophagus

Body Functions- Influences on Eating/Drinking behaviors
- B110 Consciousness functions
- B117 Intellectual functions
- B1301 Motivation
- B1302 Appetite
- B1303 Craving
- B1670 Reception of language
- B2102 Quality of vision
- B250 Taste function

Activity/Participation Codes-Swallowing
- D5201 Caring for teeth- Looking after dental hygiene, such as by brushing teeth, flossing, and taking care of a dental prosthesis or orthotics.
- D550 Eating – Carrying out the coordinated tasks and actions of eating food that has been served, bringing it to the mouth and consuming it in a culturally acceptable ways, cutting or breaking foods into pieces, opening bottles and cans, and using eating implements, having meals, feasting or dining.

Body Function Codes-Swallowing
- B510 Ingestion Functions
  - B5100 Sucking
  - B5101 – Biting
  - B5102 – Chewing
  - B5103 – Manipulation of food in mouth
  - B5104 - Salivation

- B510 Swallowing
  - B51050- Oral swallowing
  - B51051 – Pharyngeal swallowing
  - B51052 Oesophageal swallowing
  - B51058 Swallowing, other specified
  - B51059 Swallowing, unspecified

Body Functions- Influences on Eating/Drinking behaviors
- B140 Attention functions
- B144 Memory functions
- B147 Psychomotor functions
- B156 Perceptual functions
- B1644 Insight
- B1646 Problem-solving
- B255 Smell function
Activity/Participation Codes - Swallowing - 2

- d560 Drinking- Taking hold of a drink, bringing it to the mouth, and consuming the drink in culturally acceptable ways, mixing, stirring, and pouring liquids for drinking, opening bottles and cans, drinking through a straw or drinking running water such as from a tap or a spring; feeding from the breast.

Activity/Participation Codes - Related to Eating/Drinking

- d630 Preparing meals
- d850 Remunerative employment
- d9100 Informal associations
- d9191 Ceremonies
- d920 Recreation and leisure
- d9300 Organized religion

Environmental Factors - Swallowing

- e1100 Food – Any natural or human-made object or substance gathered, processed, or manufactured to be eaten, such as raw, processed and prepared food and liquids of different consistencies, herbs and minerals.
- e115 Products and technology for personal use in daily living
- e240 Light
- e250 Sound

Environmental Factors - Swallowing - 2

- e310 Immediate family
- e320 Friends
- e330 People in positions of authority
- e340 Personal care providers and personal assistants
- e355 Health Professionals
- e410 Individual attitudes of immediate family members
- e450 Individual attitudes of health professionals

Environmental Factors - Systems - Swallowing - 3

- e580 Health services, systems and policies
  - Health services
  - Health systems
  - Health policies

Personal Factors influence on Eating/Drinking

- Age
- Race
- Gender
- Food preferences
- Individual psychological assets
- Fitness
- Lifestyle
- Habits
- Upbringing
- Coping Styles
- Education
- Social Background
- Other health conditions
Example of ICF framework intervention - Case presentation

70 year old woman who has had a stroke, resulting in: 1) Mixed aphasia, 2) flaccid dysarthria, 3) pharyngeal stage dysphagia, 4) left side paresis for arm and leg, 5) pre-stroke hearing loss and glaucoma, 6) relatively intact cognitive abilities but trouble maintaining attention for long periods.

ICF framework example – Intervention Goal

- Beginning at the end
- Important life activity for this devout Catholic woman is going to Mass
  - Activity/Participation code – d9300 Organized religion-Engaging in organized religious ceremonies, activities, and events

ICF framework example – Intervention of Body Function

- Sampling of Body Function abilities that could effect life functioning
  - b16701 Reception of written language
  - b340 Articulation functions
  - b5105 Swallowing
  - b770 Gait pattern functions
  - d440 Fine hand use
  - b2100 Visual acuity functions
  - b230 Hearing functions

ICF framework example – Intervention of Activity/Participation

- Associated Activity/Participation areas
  - d310 Communicating with-receiving messages
  - d350 Conversation
  - d4102 Kneeling
  - d440 Fine hand use
  - d450 Walking
  - d7502 Informal relationships with acquaintances

ICF framework example – Environmental Factors

- e1251 Assistive products and technology for communication
- e145 Products and technology for the practice of religion and spirituality
- e2501 Sound quality
- e310 Immediate family
- e330 People in positions of authority
- e445 Individual attitudes of strangers

ICF framework example – Personal Factors

- Age
- Individual psychological assets
- Upbringing
- Coping Styles
- Social Background
- Other health conditions
Transdisciplinary intervention

- What effects could other health conditions have (e.g., urinary urgency)?
- What could be side effects of medication (e.g., dizziness)?
- Vision and hearing needs?
- What fine motor skills needed in Mass, such as turning pages of book, shaking hands?
- What communication skills needed in Mass, such as understanding homily, directions, verbal interactions, recitations?
- What gross motor skills needed, such as being able to get in church, stand, kneel, walk?
- Taking food and drink for Holy Communion

Environmental Factors with case

- Determining physical environment of church such as steps, accessibility
- Noise/acoustic characteristics of church
- Adaptive needs for vision and hearing impaired
- Attitudes/support of church members

Transdisciplinary intervention with this patient

After working on specific goals, then clinician can work to see if they can all be coordinated and produced with acceptable approximation together. For example, can she stand up from kneeling with a book in her hand.

Brief ICF Core Set for Stroke

- b110 Consciousness functions
- b114 Orientation functions
- b167 Mental functions of language
- b730 Muscle power functions
- d330 Speaking
- d450 Walking
- d530 Toileting
- d550 Eating
- e310 Immediate family

EBP and ICF – Challenging us to do better

- Evidence based practice challenges the status quo and demands higher accountability for all professionals providing clinical service. Essentially, prove that really helping anybody or that providing the most help possible.

- International Classification of Functioning, Disability, and Health (ICF) challenges the medical and educational establishments to view health in a broader scheme and to hold both systems to higher accountability to the functional health of the population.
EPB and ICF

- Broader view of evidence because broader view of what is improvement
- Complexity of questions to be answered
- Standard yardstick by which to do judge clinical effectiveness and to do meta-analysis
- Same language clinicians and researchers
- Highest goal- improved quality of life

Take Home Messages

1. Functional Health IS Health
2. Communication Disorders interfere with achieving full health
3. Disability studies require comprehensive approach

Bottom Line- EBP and ICF

- Sackett, Rosenberg, Gray, Haynes, and Richardson (1996) state -
  "Evidence based medicine is not "cookbook" medicine. Because it requires a bottom up approach that integrates the best external evidence with individual clinical expertise and patient’s choice, it cannot result in lavish, cookbook approaches to individual clinical expertise. External clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all, and, if so, how it should be integrated into a clinical decision (p. 72).

Science plus meaning and purpose, with goal of helping persons with disabilities improve their quality of life and more fully participate in society

https://www.ted.com/talks/rupal_patel_synthetic Voices as unique as fingerprints