The International Classification of Health Interventions (ICHI) – A new tool for describing and reporting interventions in audiology

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Key Words

The World Health Organization (WHO) maintains a suite, or 'family', of classifications designed to support internationally consistent information on different aspects of health and healthcare systems (World Health Organization, n.d.). The three core members of this family are the International Classification of Diseases (ICD), the International Classification of Functioning, Disability and Health (ICF), and the International Classification of Health Interventions (ICHI). The newest member, ICHI, is currently in development and due for completion at the end of 2020. These classifications systematize health and medical concepts such as diagnosis, functioning and interventions, and provide a standard basis for collecting and exchanging information (Madden & Bundy, 2018; Zaiss & Dauben, 2018).

In regard to health interventions, there exist many national classification systems (e.g., the Australian Classification of Health Interventions, the Canadian Classification of Health Interventions) which focus largely on diagnostic, medical and surgical interventions provided to hospital in-patients. However, many countries do not have a national classification. Moreover, national classification systems tend to be narrow in focus and generally do not cover interventions related to prevention, public health, allied health, rehabilitation, and assistance with functioning. ICHI is being developed to provide a common tool for describing, reporting and analyzing health interventions for statistical purposes. It is designed to be comprehensive and describe the full range of health interventions, following the biopsychosocial model set out in the ICF. The stated aim of ICHI is "*to meet a number of use cases including international comparisons, a classification for countries that lack one, expanded content for countries that have a national classification focused on medical and surgical interventions as well as a base for redevelopment of national classifications. As well, ICHI can support global initiatives, such as*

the Sustainable Development Goals and Universal Health Coverage, and provide an information base for work on health system performance and patient safety (World Health Organization, 2019)." The current beta-2 2019 version of ICHI is publicly available via the ICHI online platform (https://mitel.dimi.uniud.it/ichi/).

ICHI defines a health intervention as "*an act performed for, with or on behalf of a person or population whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions*" (World Health Organization, 2019). The classification is structured into three axes: (1) Target: the entity on which the Action is carried out; (2) Action: the deed done by an actor to the Target; and (3) Means: the processes and methods by which the Action is carried out. Each axis is a coded list of descriptive categories. The ICHI Target axis incorporates ICF Body Functions, Activities and Participation domains, and Environmental Factors domains, to promote consistency and compatibility between these two classifications. Each intervention in ICHI has a title and a unique 7-digit stem code denoting the Target, Action and Means for that intervention. Extension codes can be used to add additional information about an intervention (e.g., therapeutic products, assistive products and medicaments). A logical syntax system is used to link ICHI stem codes and extension codes. More details can be found in the draft ICHI guidelines via the online platform.

Table 1: Example of ICHI codes relevant to audiology

Intervention Focus	ICHI Intervention	Definition	ICHI Axis Categories
Intervention to support functioning	**Title:** Provision of products and technology for communication **Code:** UAF.RD.ZZ **Extension code**: XP305.01– Hearing aids (digital) and batteries	Providing equipment, products and technologies used by people in activities of sending and receiving information, including those adapted or specially designed, located in, on or near the person using them	**Target:** UAF – Products and technology for communication **Action:** RD – Providing products **Means:** ZZ – Other and unspecified means
	Title: Implantation of cochlear prosthetic device **Code:** CCB.DN.AA		**Target:** CCB - Cochlea **Action:** DN - Implantation of internal device **Means:** AA – Open approach
Health promotion interventions	**Title:** Education about sensations associated with hearing and vestibular functions **Code:** CTK.PM.ZZ	Providing information to improve knowledge about sensations of dizziness, falling, tinnitus and vertigo	**Target:** CTK - Sensations associated with hearing and vestibular function **Action:** PM - Education **Means:** ZZ - Other and unspecified means
	Title: Restrictions or requirements concerning workplace safety behaviours — enactment of legislation or regulations **Code**: VCB.WI.QD	Passing laws or putting enforceable rules or obligations in place in relation to behaviour concerning workplace	**Target:** VCB - Workplace safety behaviours **Action:** WI - Restrictions or requirements, other **Means:** QD - Enactment

		practices that increase or reduce the risk of physical harm to individuals, including use of protective products and clothing	

Of relevance to audiology, ICHI provides codes for interventions targeting body systems and functions (e.g., Tympanic membrane, Hearing functions), activity and participation domains (e.g., Communication – receiving), environmental factors (e.g., Products and technology for communication), and health-related behaviours (e.g., Screening behaviours). Relevant extension codes are available to describe assistive products (e.g., Hearing loops/FM systems) and therapeutic products (e.g., Bone anchored hearing system). Some examples of ICHI codes relevant to audiology are given in Table 1.

The three core WHO classifications – ICD, ICF and ICHI – can be used together, as illustrated in Figure 1 (Fortune et al. 2018). In this example, ICHI is used to record investigative and diagnostic interventions conducted (column 1) and therapeutic and supportive interventions subsequently delivered (column 4), ICF is used to describe the person's functioning and need for environmental facilitators (column 2), and ICD is used to record a diagnosis (column 3).
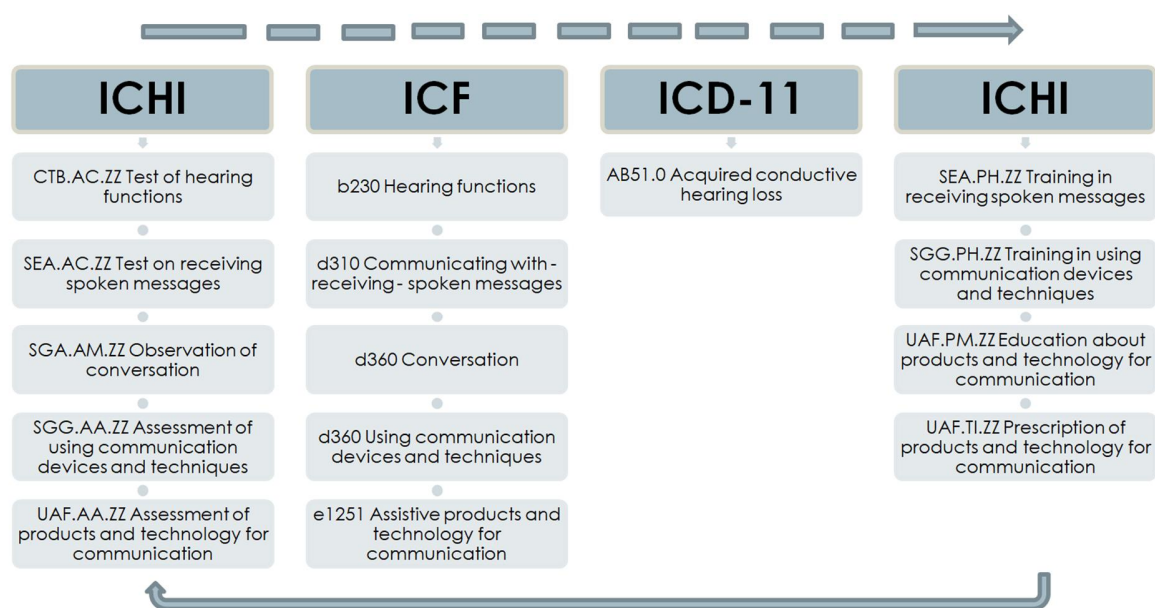
Figure 1. Example of using the three WHO classification systems together.

The profession of audiology has been active in adopting the WHO classification systems in research and practice. For example, a global project to develop a WHO ICF core set for hearing loss has resulted in a comprehensive and brief ICF core set (Danermark et al., 2013). ICHI now presents an opportunity for audiology to structure and standardize the description of interventions and rehabilitation services. At a macro level, ICHI can potentially be used to compare performance across different health care systems, while at a micro level, healthcare professionals can use ICHI as a standard basis for documenting and communicating about interventions (e.g., when performing systematic reviews related to health interventions).

We encourage clinical audiologists, hearing scientists, and academics to familiarize themselves with this new system and trial the use of the current Beta version in a range of applications. It is easy to register as a user on the ICHI online platform, and the commenting facility allows users to have input by providing comments and suggestions. As early adopters, the profession of

audiology's engagement and experience with this classification may inform its refinement and potentially serve as an example to other health professions.

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