ICHI Reference Guide

International Classification of Health Interventions

Contents

Abbreviations

CDC	Central Product Classification
FDC	Family Development Committee
HDP	Hospital Data Project
ICD	International Classification of Diseases
ICF	International Classification of Functioning, Disability and Health
ICHI	International Classification for Health Interventions
ICPM	International Classification of Procedures in Medicine
ISIS	International Standard Industrial Classification
OECD	Organisation for Economic Co-operation and Development
SDG	Sustainable Development Goal
UHC	Universal Health Coverage
WHO	World Health Organization
WHO-FIC	World Health Organization - Family of International Classifications

Introduction

The World Health Organization (WHO) Family of Health Classifications (WHO-FIC) includes three reference classifications, covering diseases, functioning and disability, and health interventions:

- International Statistical Classification of Diseases (ICD)
- International Classification of Functioning, Disability and Health (ICF)
- International Classification of Health Interventions (ICHI).

The Family is described at https://www.who.int/publications/m/item/who-fic-family-paper

The International Classification of Procedures in Medicine (ICPM) was published by WHO in 1978. It included diagnostic, medical and surgical interventions. Subsequently, the Heads of WHO Collaborating Centres for Classification of Diseases ‘recognized that the process of consultation that had to be followed before finalization and publication was inappropriate in such a wide and rapidly advancing field’. Therefore it was decided that there should be no revision of the ICPM.

The Hospital Data Project (HDP), established by the European Union, worked throughout the early 2000s to establish comparisons of hospital diagnoses and interventions across Member States. It drew attention to the large number of interventions classifications used across European countries as a complicating factor in choosing a sentinel list of

interventions for reporting and comparison. 36 hospital interventions were finally decided for international reporting and were subsequently used for OECD countries.

ICHI has been developed from 2007 by a wide range of people drawn from WHO-FIC Collaborating Centres in all WHO regions, as well as a number of WHO staff. ICHI covers all parts of the health system and contains a wide range of interventions not found in national classifications.

ICHI Use Cases

1. International comparisons

The Organisation for Economic Co-operation and Development (OECD) and Eurostat currently collect data from member countries on a limited range of hospital interventions proposed by the Hospital Data Project (HDP). In reporting, the impact of different classification systems is regularly noted. Eurostat reports on the 36 interventions proposed by the HDP.

These international reporting processes demonstrate the demand for international comparisons of interventions across countries. Uses include comparing rates of interventions across countries, waiting times, and variations in response to specific health conditions (clinical pathways).

A comprehensive international classification of health interventions provides a sound base for comparisons, whether the international classification is used directly for collecting data, as a base for developing national classifications, or as a common structure to which codes in national classifications can be mapped for compiling international data. It provides a means of updating the HDP list, as well as conducting other regular or ad hoc comparisons.

2. National uses of ICHI

a) Countries with no classification of health interventions

Many countries, particularly countries with less developed health systems, currently have no classification. These countries lack the basic infrastructure to collect information on what is being done at the various levels of their health systems, with consequent adverse impacts on planning, quality and resource allocation, essential to health system development and improved health.

b) Countries which have used ICD-9-CM Volume 3

The United States (U.S.) interventions classification ICD-9-CM Volume 3 has been used by many countries. It has always been in the public domain, available for use without formality or cost. From 1 October 2015, ICD-9-CM Volume 3 is no longer used in the U.S. health system, and it is not maintained. It has been replaced by ICD-10-PCS, also a public good, but a much more detailed classification.

c) Countries wishing to redevelop their national classification using ICHI

Classifications of health interventions have been developed and implemented over the past 20 to 30 years in a range of countries. The purpose has often been to support the development of casemix funding systems for hospitals. Countries or organisations seeking to redevelop their classification of health interventions would be able to do so, subject to a WHO licence, using ICHI as a base. Material developed would need to be made available to WHO for use in ICHI as appropriate.

d) Addition of components of ICHI to national classifications

National classifications have focused on diagnostic, medical and surgical interventions. ICHI has a range of content not found in national classifications, or only incompletely covered. Interventions relevant to mental health, primary care, allied health, assistance with functioning, rehabilitation, prevention and public health are included in ICHI. Countries may incorporate this additional content from ICHI into national classifications.

3. Sustainable Development Goals

The United Nations General Assembly adopted the Sustainable Development Goals (SDGs) in 2015[6]. Goal 3, Good Health and Well-being, aims to 'ensure healthy lives and promote well-being for all at all ages'. This Goal contains 13 targets, several of which relate to health interventions, including prevention and treatment of non-communicable diseases and promotion of mental health and well-being (Target 3.4), universal access to sexual and reproductive health-care services (Target 3.7), access to quality essential health-care services (Target 3.8), and tobacco control (Target 3.A). In addition, there are targets under other Goals that relate to health interventions, such as ending malnutrition (Target 2.2).

To monitor progress against these goals, and to assist in the development, financing and implementation of specific programs appropriate to each particular region and country, it is important to have a common classification that can be used to describe interventions across countries and regions.

4. Universal Health Coverage

Universal Health Coverage (UHC) is a major WHO priority. It is defined as 'ensuring that all people have access to needed promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that people do not suffer financial hardship when paying for these services'. Example interventions that should be universally available include antenatal care, measles vaccination and hypertension treatment. Universal Health Coverage is an SDG Target.

In providing a common structure and terminology for the description of interventions, ICHI together with ICD-11 and ICF will be valuable in specifying indicators for monitoring implementation of UHC.

5. Patient Safety and Quality

Both sources of harm and mode of harm are central to the study of patient safety and quality issues. Patient safety and quality issues can be described using all three WHO-FIC reference classifications: ICD and ICF describe the health condition or disability arising from an adverse event, and the outcome of interventions to respond to the problem. ICHI describes the interventions themselves. Moreover, acts undertaken to address safety and quality issues will, in many cases, be codable in ICHI, further facilitating discussion and reporting of remediation.

ICHI can also provide a common framework for international efforts to review the effectiveness of health interventions, such as those undertaken by the Cochrane Collaboration.

6. Health System Performance

ICHI provides a classification to capture or record what is done by a country's health system. It can be used as an information base for planning, managing and quality assessment. It covers not only interventions in hospitals, but also interventions in diverse fields including primary care, assistance with functioning and public health.

ICHI together with ICD-11 provides a base for financing of health services, in particular as part of a casemix financing system, using either a national system or WHO's casemix system under development.

7. Public health use cases for ICHI

ICHI can be used as a tool for public health program design and assessment. It provides a menu of possible interventions to include in a public health program, tailored to circumstances and public health needs in a particular community at a particular time. Assessment of the effectiveness of public health programs can be assisted by considering the role of specific interventions included in the program.

Reporting on public health programs using ICHI interventions will allow quantification of public health outputs, which can then be related to public health expenditure.

ICHI provides a common language for public health practitioners, policy makers and researchers to discuss and compare the composition of public health programs within a country and across countries. As an international standard, ICHI has an important role to play in strengthening the evidence base for public health and facilitating the translation of research findings into practice.

ICHI Scope and Structure

ICHI, as a statistical classification, encompasses interventions across all components of health systems, in keeping with the broad conception of health represented jointly by the other two WHO-FIC reference classifications, the International Classification of Functioning, Disability and Health (ICF) and the International Classification of Diseases (ICD). ICHI includes medical, surgical, mental health, primary care, allied health, assistance with functioning, rehabilitation and prevention health interventions, and includes a range of interventions for use in community health and public health.

A health intervention is defined as follows:

*A **health intervention** is an act performed for, with or on behalf of a person or a population whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions.*

ICHI comprises a comprehensive set of interventions, referred to as **stem codes**. Each stem code in ICHI is described in terms of three axes:

- Target - entity on which the Action is carried out
- Action - deed done by an actor to the Target
- Means - processes and methods by which the Action is carried out.

Each axis consists of a coded list of descriptive categories. Each stem code is represented by a title and a unique seven-character code denoting the axis categories for that intervention: three characters for the Target, two characters for the Action and two characters for the Means. Each ICHI stem code has a unique combination of categories from the three axes. Not every possible combination of the three axes is represented as an ICHI code. Many stem code titles in ICHI are commonly used terms, such as 'Hysterectomy'.

An ICHI stem code includes all necessary elements of the intervention (e.g. laparotomy as an operative approach, suture of abdominal incision after surgery). Separate coding of components is not required.

ICHI does not include information about the provider of an intervention or the setting where the intervention is performed. The reason(s) for an intervention, and its outcome, should be classified using ICD and ICF, and is not included in ICHI.

Additional information about an intervention may be added as needed using **extension codes**, including codes for therapeutic and assistive products, medicaments, essential pathology tests and telehealth, as well as information such as quantification, laterality, and a more detailed description of anatomy. Where applicable, extension codes used in ICHI are the same as those in ICD-11. (Refer to Section 9 Extension codes).

ICF codes may be used as extension codes to provide a more detailed description of functioning Targets. Codes from other classifications (such as LOINC, the International Standard Industrial Classification and the Central Product Classification) may also be used as extension codes, notably for public health interventions.

In fields such as rehabilitation, mental health and public health, packages or programs of treatment are provided which include several specific ICHI interventions. ICHI includes the capacity to link, or cluster, interventions provided as part of a package or program.

ICHI contains more than 8,000 interventions. The number of interventions in ICHI, and consequently the level of detail (granularity) across the classification, has been determined with regard to the use cases for ICHI and the need for stability of the classification over time.

ICHI interventions are grouped into the following four sections, based on the Target of the intervention:

- Interventions on Body Systems and Functions (Chapters 1-12)
- Interventions on Activities and Participation Domains (Chapters 13-21)
- Interventions on the Environment (Chapters 22-27)
- Interventions on Health-related Behaviours (Chapter 28)

Guidelines for users

1. Introduction

These guidelines are designed to help users select the most appropriate ICHI code/s for a given intervention, and thus support the production of consistently coded data that can be meaningfully interpreted. ICHI is accessed online through the WHO-FIC ICHI Platform: https://icd.who.int/dev11/l-ichi/en#/

Interventions in ICHI are provider-neutral, that is, the same code should be assigned for a specific intervention regardless of who performs the intervention or where it is performed.

In applying ICHI, users must first decide which stem code or category of the classification is the most appropriate for describing a given intervention. Stem codes are codes in ICHI which can be used alone to describe an intervention. Stem codes are designed to ensure that in use cases that require only one code per case, meaningful information is collected.

Each ICHI stem code is described in terms of three axes:

- **Target** - entity on which the Action is carried out
- **Action** - deed done by an actor to the Target
- **Means** - processes and methods by which the Action is carried out

For example, Cholecystectomy is coded as KCF.JK.AA:

- Target KCF is ‘Gall bladder’,
- Action JK is ‘Excision, total’, and
- Means AA is ‘Open approach’.

2. Selecting ICHI stem codes

Each ICHI stem code has a descriptive title. In some cases the wording of the code title reflects the axis categories for that code (e.g., AAA.FA.AE ‘Percutaneous incision of brain’). In other cases the title is a commonly used clinical term (e.g., KCF.JK.AA ‘Cholecystectomy’).

Where the code title is a commonly used clinical term, the ICHI stem code includes all necessary elements of the intervention (e.g. KCF.JK.AA ‘Cholecystectomy’ includes laparotomy as an operative approach and suture of abdominal incision after surgery). Do not code the elements separately.

A stem code may be assigned for a given intervention if the axis categories for that code are applicable to the intervention, regardless of the wording in the code title. Index and inclusion terms, relevant to the intervention, help guide the user to a specific ICHI stem code. Before selecting a stem code you should also check that the Target, Action and Means categories for that code are applicable to the intervention you are coding; if in doubt, refer to the definitions provided for the axis categories.

The following information fields are designed to assist users to select the most appropriate stem code.

2.1 Definition

The definition provides a description of the intervention.

2.2 Index terms

Index terms are listed as an additional guide to the content of the stem code. They give examples of terms that should be classified to that specific stem code.

Example 1:

JBB.LG.AD	**Endoscopic dilatation of bronchus**
Index Terms	Endoscopic bronchial dilation

The Alphabetical Index provides a list of clinical terms (including synonyms). The index is used to help find the relevant ICHI codes. The mention of a term in the index exclusively serves coding.

2.3 Inclusions

Inclusions are used to further define or clarify the scope of a stem code and may refer to intervention components that are an inherent part of the intervention, or as examples of the intervention statements or synonyms to be classified to the stem code. Many of the terms listed relate to important or common terms belonging to the category. The lists of inclusion terms are by no means exhaustive.

Alternative names of intervention entities (synonyms) are included and shown in the electronic coding tool and the Alphabetic Index. It is sometimes necessary to read inclusion terms in conjunction with titles to fully understand why an intervention has been included based on the ICHI axial structure.

Example 2:

NME.GA.AD	**Endometrial ablation**
Inclusions	Endometrial ablation by cryoprobe
	Endometrial ablation by electrocautery
	Endometrial ablation by high intensity focused ultrasound
	Endometrial ablation by laser
	Endometrial ablation by microwave
	Endometrial ablation by radiofrequency
	Endometrial ablation by rollerball thermal uterine balloon
	Hysteroscopic endometrial ablation

2.4 Coding note

- **Code also if performed**: This instruction is used to advise the user that an additional code is to be assigned when certain associated interventions are performed. The 'code also' statement marks the categories that must be used in conjunction with the indicated second code(s).

Example 3:

JBA.LI.AE	**Percutaneous tracheostomy**
Inclusions	Percutaneous tracheotomy
	Permanent percutaneous dilatational tracheostomy
	Temporary percutaneous dilatational tracheostomy
Coding note	Code also, if performed, synchronous bronchoscopy (JBB.AE.AD)

- **Omit code**: This instruction applies to certain interventions which, when performed with or as part of other interventions, should not be coded.

Example 4:

PAK.AE.AA	**Exploratory laparotomy**
Coding note	If performed with any other intra-abdominal procedure – omit code

2.5 Exclusions

Certain categories contain lists of conditions preceded by the word 'Exclusions' and list specific interventions that are classified elsewhere in ICHI. In some instances exclusions provide more general guidance on types of interventions for which that code should not be used. Exclusions serve as a cross reference in ICHI and help to delineate the boundaries of an intervention code.

Examples 5 and 6:

JAN.JK.AA	**Complete laryngectomy**
Inclusions	Complete laryngectomy with synchronous tracheostomy
	Complete laryngectomy with thyroidectomy
	Block dissection of larynx
	Laryngopharyngectomy
Exclusions	That with radical neck dissection (JAN.JL.AA)

SSJ.PQ.ZZ	**Psychotherapy for engaging in family relationships**
Inclusions	Systemic family therapy
Exclusions	Psychotherapy for engaging in intimate relationships (SSM.PQ.ZZ)

3. Conventions used in ICHI

3.1 Abbreviations

NEC Not elsewhere classified

Codes with 'not elsewhere classified' in their title are only to be assigned when a more specific code describing the intervention in question is not present in the classification. Codes to which the NEC description is appended should only be used if one of the other options available in the classification is not suitable.

Example 7:

NME.JK.AA	**Total abdominal hysterectomy, not elsewhere classified**

NOS Not otherwise specified

The letters NOS are an abbreviation for ‘not otherwise specified’, implying that the documentation that is used for classifying the intervention does not provide more detail beyond the term (implying ‘unspecified’, ‘incompletely specified’ or ‘unqualified’).

Example 8:

ABA.JI.AA	**Local excision of lesion of spinal cord**
Inclusions	Excision of tissue of spinal cord, not otherwise specified

3.2 Use of ‘And’ and ‘Or’

The words ‘and’ and ‘or’ in ICHI are generally used in their meaning in formal logic. A term that includes a statement of the kind ‘A and B’ means that both, A and B, have to be present in order to use that category. A term that includes a statement of the kind ‘A or B’ means that the category may be used if either A or B are present.

Where these terms from ICD-11 or ICF are used in ICHI then the logic of those classifications have been retained.

Example 9:

AXA.DB.AC	**Oral or enteral medication for pain**

This intervention should be understood to mean ‘Oral medication for pain, Enteral medication for pain, or both’.

3.3 Parentheses

- **( ) Parentheses** are used to enclose supplementary words that indicate elements that may be present or absent in the intervention being classified. They are also used to enclose the ICHI stem code to which an exclusion term refers.
- **[ ] Square brackets** are used for abbreviations which are displayed using upper case letters and followed by the complete title in full. For example, ‘CPB – [Cardiopulmonary bypass]’

Example 10:

AS1.PQ.ZZ	**Psychotherapy for mental functions, unspecified**
Inclusions	Psychotherapy for simple phobias using exposure to the object
Exclusions	Counselling for mental functions, unspecified (AS1.PP.ZZ)

3.4 Singular versus multiple

In ICHI, organs, diseases and anatomical sites are expressed using the singular form to represent both singular and multiple, e.g., 'polyp' can be interpreted as polyp or polyps.

3.5 Spelling

Throughout ICHI, British spelling is used.

4. Choosing which ICHI Target

When selecting an ICHI stem code, you should choose a stem code with the most applicable Target.

4.1. Medical and surgical interventions

For medical and surgical interventions, **anatomy** is the preferred Target:

- If the target is a Body Function domain, and anatomical structures are not being acted upon, then the Target selected should be the Body Function domain.
- If the anatomy is altered (surgically) in any way, then anatomy becomes the Target.

Where an intervention concerns several anatomical locations, the Target in the stem code selected should reflect the **deepest location** (within the body or structure) or the **closest to the head**.

> For '*Endoscopic excisions of lesions in the oesophagus and duodenum*', assign KBI.JI.AD Endoscopic local excision of lesion of duodenum, as the 'duodenum' is the deepest location.

ICHI Target categories vary in granularity and some groups of Targets are hierarchically related (e.g., HAA 'Left atrium', HAZ 'Atrium, unspecified', and HZZ 'Entire heart or great vessel, unspecified'). In general, a stem code with the most detailed applicable Target category should be used.

If a matching detailed ICHI Target is not available, you should look for a broader Target that encompasses the target of your intervention. For interventions with an anatomical target, residual body system Targets are available, e.g., NZZ 'Urogenital system and functions, unspecified', PZZ 'Unspecified site' or general topographical sites e.g. PNA Lower limb, NOS. These are located at the end of the list of Targets for each body system. ICHI stem codes with these Targets should only be used when there is insufficient documentation or information to select a more specific ICHI Target, or when an applicable code with a more specific Target is not available.

Where other interventions have more than one target, and there is no single target category that encompasses the targets of the intervention, you should select a code with an ICHI target that reflects the main target for the intervention.

Other rules concerning choice of Target for medical and surgical interventions include:

- **Control of haemorrhage.** Target should specify the organ which requires the 'control of haemorrhage' rather than the bleeding vessel.
- **Localised pharmacotherapy**. Target should be the specific anatomical site, e.g. for injection of agent into spinal canal, the Target selected is ABG Spinal cavity.
- **Systemic pharmacotherapy** (not aimed at a specific anatomical site). Target should be the whole body (PZA).
- **Interventions on the fetus.** Target should be NMR Fetal or embryonic structure, not the specific anatomical structure on the fetus, e.g., NMR.AD.AD Biopsy of fetal structures. If needed, the specific fetal anatomical structure can be identified using an extension code, refer to 9.5 Use of specific 'anatomy and topography' extension codes.

For medical and surgical interventions, when there is more than one anatomical site involved:

- the Target in the stem code selected should reflect the main anatomical site of the intervention or the starting point (**from** not to), e.g., ventriculoperitoneal shunt – Target = ventricle
  e.g., For 'Ventriculoperitoneostomy' assign: AAE.LI.AA Ventricular shunt

Priority rules for selecting the Target for interventions concerning fistulas:

- If the female genital tract is involved, assign to the specific female genital tract target e.g.: rectovescicovaginal fistula is assigned to the target for ‘vagina’.
- If the urinary tract is involved, the Target is the urinary tract, except when female genital tract is involved.
- Any other fistulae, the Target is the first mentioned site in the clinical term.

4.2. Body Functions, Activities and Participation Domains, and Environmental Factors

The ICHI Target axis includes categories for Body Functions, Activities and Participation Domains and Environmental Factors based on codes from the WHO *International Classification of Functioning, Disability and Health (ICF)*.

Body Function Targets are grouped with the relevant body system in Section 1 of the classification. Activities and Participation Domain Targets are in Section 2, and Environmental Factor Targets are in Section 3.

ICHI Targets based on ICF codes are hierarchically nested, as the categories are in the ICF itself. The highest level of the ICF hierarchy is Chapter. Chapters are divided into blocks, within which 3-digit and 4-digit codes are nested. Targets based on ICF Chapters are inclusive of all Targets taken from lower levels of the ICF hierarchy, i.e., block and 3-digit ICF codes (a small number of 4-digit ICF codes are also included as ICHI Targets).

ICF chapter-level Target codes consist of two letters followed by the numeral ‘1’; ICF block-level Target codes consist of two letters followed by the numeral ‘2’; ICF 3-digit or 4-digit Target codes consist of three letters. The hierarchical structure is illustrated in Table 1.

Table 1: Hierarchical structure of ICHI Targets based on ICF codes

Code	ICHI Target	Level	ICF map
AS1	Mental functions, unspecified	Chapter level	b1
AT2	Global mental functions, not elsewhere classified	Block level	b110–b139
ATC	Awareness and alertness functions	3-digit level	b110
ATD	Orientation functions	3-digit level	b114
AU2	Specific mental functions, not elsewhere classified	Block level	b140–b189
AUA	Attention functions	3-digit level	b140
AUB	Memory functions	3-digit level	b144

The ICHI stem code most applicable to the intervention may be used.

Example 11:

For an assessment intervention focused solely on memory, code AUB.AA.ZZ

AUB.AA.ZZ Assessment of memory

A code with a higher-level Target may be used where there is no one code to specify the combined tasks.

Example 12:

For provision of practical support **with both** housework and meal preparation, the user can assign code SO2.RB.ZZ Practical support with carrying out household tasks, not elsewhere classified. Otherwise, two separate codes can be assigned, SOA.RB.ZZ Practical support with preparing meals and SOD.RB.ZZ Practical support with doing housework, if this level of specificity is required.

SO2.RB.ZZ Practical support with carrying out household tasks, not elsewhere classified

4.3 Choosing between codes with 'Health-related Behaviour' or 'Activities and Participation Domains' Targets

Stem codes with 'Health-related behaviour' Targets (VA1 to VFX) should be assigned when the intervention aims to assess, promote or modify **behaviour**, at individual or population level, in relation to a particular factor affecting health (alcohol use, hygiene, sexual behaviour, etc).

Stem codes with 'Activities and Participation Domains' Targets (SA1 to SXL) should be assigned when the intervention aims to assess, improve, or maintain a person's **performance** of particular activities or engagement in particular life situations.

Example 13:

1. an intervention that involves education about healthy food choices and appropriate portion sizes would be classified to:
   VEA.PM.ZZ Education to influence eating behaviours

2. an intervention that involves education about the activity of eating (e.g., in the context of rehabilitation after stroke) would be classified to:
   SMF.PM.ZZ Education about eating

For interventions concerning products or technologies to assist a person's body functions or their activities or participation, the relevant 'assistive products and technologies' codes should be used, with Targets UAD to UAJ. For interventions concerning products or technologies provided to facilitate behaviour change, codes with the relevant health-related behaviour Target should be used (VA1 to VFX). (The appropriate extension code may be used to describe particular assistive or therapeutic products).

Examples 14 and 15:

- An intervention that involves providing a person with an assistive device for bathing would be classified to:
  UAD.RD.ZZ Provision of products and technology for personal use in daily living

- An intervention that involves providing antibacterial hand cleanser to schools to encourage personal hygiene practices among students and teachers would be classified to:
  VED.RD.ZZ Providing goods to support improved hygiene behaviours.

4.4 Public Health interventions: Ultimate and Immediate Targets

For Public Health interventions that target an environmental factor or a health-related behaviour, the environmental factor or health-related behaviour may be considered the **ultimate** target of the intervention.

Often the action of the intervention is directed at an **immediate** target, in order to impact on the **ultimate** target.

For example, an awareness raising intervention might seek to change community attitudes (immediate target) in order to influence tobacco use behaviours (ultimate target). In such cases, the ultimate target should be considered the main Target when selecting an ICHI code. Where needed, the immediate target may be indicated by using a separate target as an extension code.

Example 16:

For 'Stop waste burning to improve outdoor air quality', assign: **UBM.VR.QE&UEV** **Where:** Stem code – UBM.VR.QE Reducing emissions through enforcement of laws or standards to improve outdoor air quality Target (immediate) - UEV Waste collection and disposal services, systems and policies

Example 17:

To indicate 'economic incentives concerning indoor air quality regarding the use of coal and coke' a target extension code may be used, assign: **UBL.WG.QF&UGD**
Where: Stem code – UBL.WG.QF Economic incentives concerning indoor air quality, in relation to health Target – UGD Coal and coke

5. Choosing which ICHI Action

When selecting an ICHI stem code, choose a code with the most applicable Action. In considering the applicability of a given Action category, users should read the definition for that Action. Index terms help to clarify the scope of the category by giving examples of actions covered; note that lists of index terms are not exhaustive:

Examples 18 and 19:

Action	FC
Title	Release
Definition	Freeing a body part that is compressed or unable to function without taking out the body part
Inclusions	Adhesiolysis; Carpal tunnel release; Decompression laminectomy; Interrupting or splitting of tissue for release; Lysis of adhesions

Action	SI
Title	Preparation

Action	SI
Definition	Preparing for an upcoming or future intervention
Inclusions	Modelling Rehearsal Simulation
Exclusions	Planning (TB)

5.1 Multiple Actions

Where an intervention includes more than one action, the user should select an intervention code based on the **main action** or the first one mentioned in the documentation.

Where a medical or surgical intervention has multiple component actions within the same clinical procedure (and the parts of the intervention can also be done separately), assign multiple ICHI stem codes to describe the interventions being performed.

Example 20:

For ‘Coronary angiogram with intravascular pressure measurement’, assign the following stem codes to describe the interventions performed:

- HIA.BA.BB Coronary angiography
- HIA.AB.AF Intravascular pressure measurement of coronary arteries

Actions undertaken as part of a more comprehensive action should not be separately coded.

Example 21:

- for ‘excision/resection with a reconstruction’, an ICHI stem code with Action ML ‘Reconstruction’ should be selected, because ‘excision/resection’ is inherent in a reconstruction when performed in the one operative episode.
- for ‘incision and drainage’, an ICHI intervention code with Action JB ‘Drainage’ would be selected because the incision is the operative route in order to perform the ‘drainage’.

6. Choosing which ICHI Means

When selecting an ICHI stem code, the Means identifies ‘the processes and methods by which the Action is carried out’. The Means axis includes the following groups of Means categories:

- Approach
- Technique
- Method
- Sample
- Unspecified

In considering the applicability of a given Means category, users should read the definition for that Means. Index terms help to clarify the scope of the category by giving examples of means covered; note that lists of index terms are not exhaustive.

Examples 22 – 23:

Means	AA
Title	Open approach
Definition	Exposing the actual site of the intervention by incision of the skin or mucous membrane and any other underlying tissue.
Inclusions	Transmastoid
Exclusions	Cutting per orifice (AC)

Means	BD
Title	Computerised tomography with contrast medium
Definition	Linear or multi-directional scanning where images are processed and displayed in cross-sections, and contrast medium
Exclusions	Computerised tomography, not otherwise specified (BC)

6.1 Choice of 'Approach' Means categories

'Approach' Means categories are only used for medical and surgical interventions.

- 'Open' (AA) is the default surgical approach, i.e., where type of approach is not specified in the stem code title this indicates 'open approach'.
- For medical/surgical interventions the default is to AA Open approach if not otherwise specified.

7. Residual Categories – 'Other' and 'Unspecified'

ICHI coding should always be completed to include the highest level of detail possible with the use of one or multiple stem codes. There are, however, circumstances when that is not possible and for that reason ICHI includes stem codes titled 'other' and 'unspecified'.

In some instances, necessary information to select a specific stem code may not be available in the source documentation. When this is the case, the residual stem code for 'unspecified' is selected. Conversely, there are instances where the information in the source documentation is very specific, but ICHI may not include a specific stem code. In this case, users code to the residual category titled 'other'.

Therefore, where an ICHI stem code with the required combination of Target and Action is not available, a code with the appropriate Target and Action ZY ‘Other action, not elsewhere classified’ should be selected, e.g., KAE.ZY.AC ‘Other interventions on teeth, not elsewhere classified’.

Where there is insufficient information about the action performed, a code with the appropriate Target and Action ZZ ‘Unspecified action’ should be selected, e.g., JZZ.ZZ.ZZ ‘Interventions on respiratory system and voice and speech, unspecified’.

8. What not to code, and order of code assignment

8.1 Intervention Components

Do not code any medical/surgical interventions that are components of another intervention where these components would usually be considered a routine or inherent part of the more significant intervention being performed.

Do not code an intervention that is the operative approach for surgery:

Example 24:

> laparotomy performed for a cholecystectomy, assign a stem code for the open cholecystectomy only (KCF.JK.AA).

8.2 Ordering of Codes

Code in the following sequence

1. Interventions to treat the main purpose (health condition, body function impairment, activity limitation or participation restriction, environmental factor or health behaviour)
2. Interventions to treat the additional purpose(s)
3. Interventions to determine the main purpose
4. Interventions to determine the additional purposes
5. Additional code to be recorded in accordance with a ‘Code also’ instruction

9. Extension codes (use when needed)

Additional information about an intervention can be added by the use of extension codes which expand the detail and granularity of ICHI stem codes. Extension codes are not to be used alone but must be added to a stem code.

ICHI extension codes are of the following types:

- Quantifiers
  - Number of anatomical structures an intervention is performed on
  - Number of interventions performed
  - Number of therapeutic products inserted

- Additional descriptive information for interventions
  - Initiating/maintaining/discontinuing/resuming
  - Relationship to other intervention(s)
  - Standardisation or structure
  - Use of equipment or challenge
  - Recipient
  - Creative therapy
  - Specific skills and techniques
  - Tissue flaps
  - Tissue grafts
- Topology
  - Measurement
- Telehealth
  - Intervention performed with advice or assistance provided from a distant location
  - Intervention provided to recipient/s in a distant location
  - Interventions delivered via technology, without direct involvement of a human provider
- Essential pathology tests
- Assistive products
- Therapeutic products

In addition, the following ICD-11 extension codes may be used as ICHI extension codes:

- Topology scale value - Relational
- Topology scale value – Laterality
- Anatomy and topography
- Substances – Medicaments
- Substances – Non-medical

A given extension code may be used with any ICHI stem code to which it is applicable.

The ICHI stem code is to be reported first followed by an ampersand '&' followed by the extension code/s. Multiple extension codes are to be separated by '&'.

Syntax: ICHI intervention stem code&extension code&extension code.

Example 25:

For '*Unplanned meniscoplasty of knee, right side'*, assign:
MMD.ML.AA&XB03.0&XK9K

Where:
Stem code – MMD.ML.AA Meniscoplasty of knee
Additional descriptive information extension code – XB03.0 Unplanned intervention
Topology extension code for laterality – XK9K Right

Further information on the use of specific extension codes is provided below.

9.1 Quantifiers

These extension codes are assigned to identify the number of:

- anatomical structures an intervention is performed on
- the same interventions performed in one episode of care
- therapeutic products inserted or implanted during an intervention

9.2 Additional descriptive information

'Additional descriptive information' can be added to an ICHI stem code using available extension codes.

Specific guidelines for the application of certain extension codes in this section are provided below:

9.3 Use of 'Telehealth' extension codes

XH01 – Intervention performed with advice or assistance provided from a distant location

> *Includes:* performing intervention with advice provided from a distant location; performing intervention with assistance provided via robotic control from a distant location

XH02 – Intervention provided to recipient/s in a distant location

> *Includes:* providing intervention directly to a person at a distant location (e.g., telephone counselling); performing intervention via robotic control; advising or assisting local provider to perform intervention

XH03 – Interventions delivered via technology, without direct involvement of a human provider

> *Includes:* asynchronous eHealth and mHealth interventions, and interventions delivered via websites and health care apps.

Extension code XH01 should be recorded at the health care facility where the individual receiving the intervention is located, not where the distant provider is located.

Extension code XH02 should be recorded at the health care facility where the provider is located, not the location of the distant individual who is receiving the intervention.

Where an intervention is provided to a recipient(s) in a distant location, and there is a health care provider co-located with the recipient(s) who is also involved in provision of the intervention, the intervention may be recorded at both locations (e.g., two different hospitals).

Table 2: Examples illustrating the use of Telehealth extension codes:

	Coding at recipient's location	**At location distant from recipient**
A specialist giving advice to a doctor at a distant location who is performing thrombolysis	IAA.DB.AF&XH01	IAA.DB.AF&XH02
Provision of tobacco cessation counselling via telephone	–	VAB.PP.ZZ&XH02
Doctor at hospital A conducts a series of mental function tests and sends results to neurologist at hospital B who uses the test results to conduct a neurological assessment	AS1.AC.ZZ	AZZ.AA.AH&XH02

Extension code XH03 may be used for describing population-level interventions for public health or interventions provided to individuals:

Examples 26 - 27:

- An interactive website providing tailored advice on smoking cessation:
  VAB.PN.ZZ&XH03 – Advising about tobacco use behaviours, delivered via technology without direct involvement of a human provider

- Individual use of an app to assist with memory functions:
  AUB.RB.ZZ&XH03 – Practical support with memory, delivered via technology without direct involvement of a human provider

9.4 Essential Pathology Tests

The Essential Pathology Tests extension code list comprises the pathology tests included by the WHO in its Model List of Essential In-Vitro Diagnostics 2019. This extension code may be used to record a pathology test performed on a specimen.

Example 28:

Blood specimen taken for diagnostic testing of haemoglobin levels:
DIA.AH.XA&XJ33

Where:
Stem code – DIA.AH.XA Specimen collection of blood
Essential pathology test extension – XJ33 Haemoglobin (Hb)

LOINC may be used as an alternative to this extension code if the user has access to it (see Section 10: Use of Other Code Lists).

9.5 Use of specific 'anatomy and topography' extension codes

An 'Anatomy and Topography' extension code may be used to provide further anatomical detail to an existing stem code:

Examples 29 - 31:

To record further detailed anatomy, an extension code from 'Anatomy and topography' may be assigned:

The intervention statement involves more than one anatomical target, e.g.:
For '*Ventriculoperitonostomy'*, assign:
AAE.LI.AA&XA0KZ0

Where:
Stem code – AAE.LI.AA Ventricular shunt
Anatomy extension – XA0KZ0 Peritoneum

For '*Coronary artery bypass graft (CABG) from thoracic aorta to coronary artery'*, assign:
HIA.LI.AA&XA8K52&XA3B03

Where:
Stem code – HIA.LI.AA Coronary artery bypass
Anatomy extensions – XA8K52 Aorta of thorax & XA3B03 Coronary artery

For '*Reconstruction of the volar intercarpal ligaments of the hand'*, assign:
MGL.ML.AA&XA47N4

Where:
Stem code – MGL.ML.AA Reconstruction of ligament or fascia of hand or finger
Anatomy extension – XA47N4 Volar intercarpal ligaments

'Anatomy and topography' extension codes in ICHI are the same as for ICD-11.

9.6 Use of 'Medicaments and Substances' extension codes

Where an intervention includes use of a medicament or substance, the substance may be described using a Medicament or Substance extension code.

Examples 32 - 33:

Medical induction of labour with Oxytocin
NME.SH.AE&XM9SN0

Where:
Stem code – NME.SH.AF Intravenous medical induction of labour
Medicament extension – XM9SN0 Oxytocin

Support the elimination of use of cadmium in products such as toys, jewellery and plastics
UAA.TA.AE&XMOV73

Where:
Stem code – UAA.TA.AE Advocate about products for personal consumption
Substance extension – XMOV73 Cadmium

Medicament and Substance extension codes in ICHI are the same as in ICD-11.

9.7 Use of ‘Assistive products’ extension codes

To record further information regarding an assistive product in association with an intervention, an extension code from ‘Assistive products’ may be assigned.

Example 34:

For ‘*Provision of digital hearing aids’*, assign
UAF.RD.ZZ&XP305.01

Where:
Stem code – UAF.RD.ZZ Provision of products and technology for communication
Assistive products extension – XP305.01 Hearing aids (digital) and batteries

The assistive products extension code covers the content from the WHO Priority Assistive Products List (APL). ISO 9999 may be used as an alternative to this extension code if the user has access.

9.8 Use of ‘Therapeutic products’ extension codes

To record further information regarding a therapeutic product in association with an intervention, an extension code from ‘Therapeutic products’ may be assigned.

Example 35:

For ‘*Insertion of bone anchoring conduction hearing device’*, assign:
CBA.DN.AC& XT03.02

Where:
Stem code – CBA.DN.AC Implantation of internal device in middle ear, not elsewhere classified
Therapeutic products extension – XT03.02 Bone anchoring system

9.9 Combining extension codes

Logically combined extensions should be grouped using round brackets ( ), with multiple use of these brackets being used for ‘groups’ of extension codes.

Syntax: ICHI stem code&(extension code&extension code)&(extension&extension code)

Example 36:

For ‘*Coronary artery bypass graft (CABG) to left diagonal anterior descending coronary artery and right circumflex coronary artery*’, assign:
HIA.LI.AA&(XX8G&XA2DD2)&(XX9K&XA4YJ3)

Where:
Stem code – HIA.LI.AA Coronary artery bypass is combined with:
Topology extension – XK8G Left
Anatomy extension – XA2N78 Diagonal artery

and

Topology extension – XK9K Right
Anatomy extension – XA9FX9 Circumflex artery

10. Using Other Code Lists

Other code lists may be used alongside ICHI. These could be:

- ICF codes. ICF Body Functions, Activities and participation and Environmental factors are used as targets in ICHI. Most are at the 3 digit level of the ICF. If more specificity is desired, an ICF 4 or 5 digit code may be used.
- international coding systems to provide more detail (e.g. LOINC, ISO 9999)
- A code list to specify other information about the intervention including International Standard Industrial Classification (ISIC) code to describe industry, and Central Product Classification (CPC) to describe products and services.

Codes from other code lists should be separated from ICHI codes by the hash (#) symbol. The Classification used should be named before the code from that classification.

Examples 37 – 39:

For *'Assessment of cleaning living area'* assign:
SOD.PH.ZZ#ICF d6402

Where:
SOD.PH.ZZ Assessment of doing housework
ICF d6402 Cleaning living area

For *'Reduce dust from construction of roads to improve air quality'* assign:
UBM.VR.QE#ISIC Group 421

Where:
UBM.VR.ZZ Reducing emissions to improve outdoor air quality
ISIC Group 421 Construction of roads and railways

For '*Restricting spraying of insecticides for malaria control'* assign:
UBQ.WF.ZZ#CPC Sub-class 34661

Where:
UBQ.WF.ZZ Restrictions on the consumption or use of products or services in relation to animals as vectors of disease
CPC Sub-class 34661 Insecticides

11. Interventions performed together

Where interventions are performed together, the ICHI codes for each intervention should be separated by a forward slash "/". Each intervention should be coded using the relevant stem code and extension codes as needed.

Some medical/surgical interventions performed together are commonly described by a single term.

Examples 40 – 43:

For '*Partial oesophagectomy with gastrostomy'*, as per the 'code also' instruction assign:
KBA.JJ.AA/KBF.LI.AA

Where:
KBA.JJ.AA Partial oesophagectomy
KBF.LI.AA Gastric bypass

For '*Training in eating and drinking'*, assign:
SMF.PH.ZZ/SMG.PH.ZZ

Where:
SMF.PH.ZZ Training in eating
SMG.PH.ZZ Training in drinking

For '*Percutaneous transluminal angioplasty of left lower leg artery and percutaneous transluminal angioplasty of right lower leg artery with insertion of two stents'*, assign:
IFA.LG.AF&XCA3/IFA.LH.AF&XCA4&XAC2&XT01.24

Where:
Stem code – IFA.LG.AF Percutaneous transluminal dilatation of artery of lower limb
Topology extension – XK8G Left

Stem code - IFA.LH.AF Percutaneous transluminal dilatation with insertion of device into artery of lower limb
Topology extension – XK9K Right
Quantifier number of products extension – XAC2 Two therapeutic products inserted
Therapeutic product extension – XT01.24 Endovascular stent

For 'Assisting and leading skills for mobility of hand and finger joints and exercises for muscles of the hand', assign:
MTB.PG.ZZ&XB11.5&XXMGJ/MUB.PG.ZZ&XB11.3&XXMGM

Where:
Stem code – MTB.PG.ZZ Assisting and leading exercise for mobility of joint functions
Additional descriptive extension – XB11.5 Movement techniques
Anatomy extension – XA62V5 Joints of the hand

Stem code – MUB.PG.ZZ Assisting and leading exercise for muscle power functions
Additional descriptive extension – XB11.3 Strength techniques
Anatomy extension – XA5R12 Hand

For interventions covering public health, the above rules may be used where necessary to fully convey the content of an intervention that cannot be adequately captured using a single ICHI stem code.

Example 44:

For '*Educational theatre performance about alcohol and illicit drug use',* assign:
VAA.PM.ZZ/VAC.PM.ZZ

Where:
VAA.PM.ZZ Education to influence alcohol use behaviours
VAC.PM. ZZ Education to influence illicit drug use behaviours

Two or more independent interventions provided on the same date, or on different dates, should not be reported as interventions performed together.

12. Packages of interventions

In some circumstances several interventions may be combined as a package. A rehabilitation program may be constructed for a person to include a selection of interventions, to be provided by a range of providers and disciplines over a time period. A mental health treatment program may be similarly constructed. The interventions within a package should be documented.

Public health programs will commonly include a range of component interventions, each of which can be coded in ICHI.

Packages of interventions are reported using '+' between interventions. Each intervention is represented by a stem code with or without extension codes.

Examples 45 - 47:

Rehabilitation program for a hand injury, assign:
MTB.PG.ZZ&XB11.5&XXMGJ+MUB.PG.ZZ&XB11.3&XXMGM+SIA.PN.ZZ& XB11.9+SIG.PH.ZZ

Where:
Stem code - MTB.PG.ZZ Assisting and leading exercise for mobility of joint functions, **&**
Anatomy extension codes – XA5R12 Hand, **&** XA2593 Fingers and thumb
+
Stem code – MUB.PG.ZZ Assisting and leading exercise for muscle power functions, **&**
Anatomy extension code – XA5R12 Hand, **&**
Stem code – SIA.PN.ZZ Ergonomics advising for lifting and carrying, **&**
Stem code – SIG.PH.ZZ Training in fine hand use

A school-based health promotion initiative to improve sun protection behaviours of students that involves (i) erecting shade structures in the playground, (ii) providing students with hats, and (iii) running an education session for parents, assign:
VEG.TM.ZZ+VEG.RD.ZZ+VEG.PM.ZZ

Where:
Stem code – VEG.TM.ZZ Environment modification to influence UV radiation exposure behaviours, **+**
Stem code – VEG.RD.ZZ Providing goods to support improved UV radiation exposure behaviours, **+**
Stem code – VEG.PM.ZZ Education to influence UV radiation exposure behaviours

Communicate and educate communities and other stakeholders about health risks and health protection measures related to the use of wastewater, excreta or greywater in agriculture, assign:
UBN.VB.ZZ&(UEV&XXUGR)+UBN.PM.ZZ&(UEV&UGR)

Where:
Stem code – UBN.VB.ZZ Awareness raising concerning water quality, **&**
Target – UEV Sewerage services, systems and policies, **&**
Target – UGR Agriculture, **+**
Stem code – UBN.PM.ZZ Education about water quality, **&**
Target – UEV Waste collection and disposal services, systems and policies, **&**
Target – UGR Agriculture.

Packages will vary according to the circumstances of the person being treated or supported, and according to national or sub-national system structures or capacities. Therefore ICHI does not attempt to classify packages of interventions. Where documentation only signifies that a package of interventions has been provided, further information is needed to determine the interventions provided.

13. Using ICHI with ICD and/or ICF

As a reference classification of the WHO Family of International Classifications (WHO-FIC), ICHI has been designed to align with, and to be used alongside, the ICD and ICF. ICF categories for Body Functions, Activities and Participation Domains, and Environmental Factors are used as Targets in ICHI (see Section 4.2).

In applying the three WHO-FIC classifications together:

- ICHI can be used to describe investigative intervention(s).
- ICD-11 can be used to record the person's health conditions.
- ICF can be used to describe the person's functioning (body functions, body structures, activities and participation domains and environmental factors).
- ICHI can be used to describe preventive, therapeutic and support intervention(s).

Example 48:

Using ICHI with ICD:
Patient admitted for colonoscopy with biopsy to investigate ongoing abdominal pain, results indicated Crohn's Disease of the large intestine and a hemicolectomy of ascending colon was later performed, assign:

ICHI KBP.AD.AD Endoscopic biopsy of colon
ICD-11 DD70.3 (Crohn disease of large intestine)
ICHI KBP.JJ.AA&XA3AL5 (Partial excision of colon&Ascending colon)

14. Annex A: History of the development of ICHI

From its inception, the WHO Family of Health Classifications was intended to include three reference classifications: the International Statistical Classification of Diseases and Related Health Problems (ICD), the International Classification of Functioning, Disability and Health (ICF) and an International Classification of Health Interventions (ICHI). This last classification was a long-standing gap in the Family.

The International Classification of Procedures in Medicine (ICPM)[11] was published by WHO in 1978. It included diagnostic, medical and surgical interventions, but it was not maintained.

The Hospital Data Project (HDP), established by the European Union, worked throughout the early 2000s and identified 36 hospital interventions for international reporting[2]. Its work, reported progressively to the WHO-FIC Network, drew attention to the large number of national health interventions classifications in use, making comparisons difficult.

At its 2006 meeting, the WHO-FIC Network decided to begin work on an international classification, through its Family Development Committee (FDC)[3].

Early development discussions decided that ICHI, as a statistical classification, would encompass all components of health systems, in keeping with the broad conception of health represented jointly by the ICD and the ICF. ICHI would not include occupation or profession of providers, nor the setting of the intervention.

Purposes initially identified included the use of ICHI as a national classification by countries that lack one and as a base for international comparisons.

Content development commenced in 2011, and a first version was available in late 2012, with subsequent yearly updates. ICHI development was undertaken by a broad-based

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[1] 1 International Classification of Procedures in Medicine, WHO 1978

2 European Commission, Directorate General for Health and Consumer Protection, Hospital Data Project, Phase 2, Final Report, 2008

3 Family Development Committee, Document C402, 2006 WHO-FIC Network Meeting

international team of experts and was followed by a range of tests and field at country and international level.

Initial planning was not to attempt to match the level of granularity in existing national classifications. To allow users to add more detail if they chose, extension codes were added to ICHI as the content development and refinement continued. Extension codes were being included at the same time in the development of ICD-11, and care was taken to avoid duplication and inconsistencies.

The initial electronic platform for ICHI was developed in 2016 by the University of Udine, Italy, which made the ICHI development process transparent and served as a development platform.

In 2020, ICHI was incorporated on to the WHO's classifications platform, which includes all three WHO reference classifications. The platform provides an updating mechanism which allows improvements in user guidance and scientific updates without compromising the statistical use of the classification.