



Technical Assistance to the Mandatory Health Insurance Fund

Overview of the International Classification of Primary Care

Client

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Hebelstr. 11
60318 Frankfurt am Main
Germany

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Report Prepared by	Written by: Dr Mirjana Milosevic Reviewed by: Project Manager Natalia Liubcenco

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ABBREVIATIONS

FGP	Family Group Practice
FMC	Family Medical Center
GP	General Practitioner
ICD-9	International Code of Diseases 9 th version
ICD-10	International Code of Diseases 10 th version
ICD-11	International Code of Diseases 11 th version
ICPC	International Classification of Primary Care
IT	Information Technology
m4h	Management4health
MCH	Maternal and Child Health
MHIF	Mandatory Health Insurance Fund
MoF	Ministry of Finance
MoHSD	Ministry of Health and Social Development
MoH	Ministry of Health
NCD	Non-Communicable Disease(s)
PHC	Primary Health Care
WHO	World Health Organization
WHO-FIC	WHO Family of International Classifications
WONCA	World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians
WICC	WONCA International Classification Committee

1 INTRODUCTION AND AIM OF THE DOCUMENT

The ToR for the project defines 3 objectives as follows:

1. Support the preparation and implementation of methodology for the revision of the State Guaranteed Benefit Package (SGBP);
2. Improve capacity of the MHIF in strategic purchasing; and
3. Support the preparation and implementation of methodology for the revision of the Additional Drug Package (ADP); and ADP pricing and reimbursement methodology.

This document is part of the delivery under second objective (related to contracting and payment methods) within which the following tasks are envisaged:

- Share international best practices, related to per capita payment mechanisms;
- Provide advice to the interdepartmental working group on the revision of capitation payment for PHC that consolidate existing performance-based initiatives and incorporating risk adjustment;
- Provide advice for the development and implementation of the procedure classification for PHC.

After Initial Report was accepted by the client, the Study on International Best Practice is submitted on 2nd September. Separate detailed presentation of international experience regarding PHC classification and capitation payment model was held on October 7th 2021 for Working Group Members.

Since the focus of both the Study and the PHC presentation was on the experiences of the countries defined as exemplary countries, it was agreed to present the International Classification of Primary Health through a separate document. Therefore, the aim of this document is to present the International Classification of Primary Care in a simple way through the analysis of available literature in order to facilitate decision-making process regarding the selection of the best classification for primary health care in the Kyrgyz Republic.

2 INTERNATIONAL CLASSIFICATION OF PRIMARY CARE

2.1 General information

Increasing health care information needs are being recognized all over the world. In order to deliver optimal health care, professionals need information about the epidemiological situation in their community, diagnostic tools based on patients' reasons for encounters, and best practice information for the diagnosis and the interventions that follow. The amount of information is huge and needs to be ordered in a way that allows intuitive searches.

Classification systems are being increasingly adopted by general practitioners throughout the world, particularly in the fast-growing number of practices utilizing computerized medical records.

The International Classification of Primary Care (ICPC) is internationally the most widely used tool for ordering clinical information in primary care and family medicine. ICPC is developed and updated by the WONCA International Classification Committee (WICC) which consists of a group of practicing primary care doctors and academics. ICPC is formally recognized by the World Health Organization's (WHO) Family of International Classifications (WHO-FIC) as a classification system for primary care. It is mapped to the International Classification of Diseases (ICD). This allows communication between the two classification systems and complementary usage.

ICPC is a classification which reflects the characteristic distribution and content of aspects of primary care. It is not a nomenclature. The richness of medicine at the level of the individual patient needs a nomenclature and thesaurus¹ much more extensive than ICPC, particularly for recording the specific detail required in an individual patient record. The use of ICPC together with ICD-10 and other classification systems can provide the basis of an adequate nomenclature and thesaurus.

The first edition, published in 1985, contained a list of conversion codes to ICD-9. Since then, ICD-10 has been introduced, and ICPC-2, published in 1987 has been carefully mapped to ICD-10 so that conversion systems can be used.

The availability of ICPC in many languages and the growing number of translations of ICD-10 accompanied by alphabetical indexes will allow family doctors in many countries to incorporate a detailed language-specific thesaurus in their system, at the same time using ICPC to systematically structure their records and the database in a more standardized way.

A new version ICPC-3 has been adopted by WONCA in December 2020 and endorsed on April 16th 2021. It is carefully linked to ICD-10, ICD-11, ICF, ICHI and Snomed CT. Also, linkages to the UHC Compendium will be available soon.

¹ Thesaurus is a specialized dictionary of different terminology, signs, synonyms etc.

2.2 Importance of coding

A classification is merely a method of placing the codes in a sorted and meaningful manner. A good structure allows you to manage the data within the practice in terms of groups of codes rather than just a specific individual code. We use structured coding systems in many areas of our lives.

Using an example within a student registration system, a typical hierarchical system may be:

Student ID number is 9435267:

9	First two numeric characters represent the year of the entry to the faculty
4	
3	Third character represents the type of the faculty, in this case number 3 stands for the faculty of science
5	Fourth character represents the type of school within the faculty, in this case number 4 stands for the school of physics
2	Last three characters represent the student number
6	
7	

With this structured coding system, you can easily identify:

- the number of students who first enrolled in 1994 at the university, by sorting on 94 only,
- the number who first enrolled in the faculty of science in 1994, by sorting on 943,
- the number specifically studying physics in the faculty in 1994, by sorting 9435,
- the individual student.

The same principle applies to the medical data. The core of a (computer-based) patient record is data coded with ICPC which is language independent. This enhances the use of practice records for a comparison of data from different countries, and it supports the development of general/family practice as an internationally well-developed profession with a well-defined and empirically based frame of reference.

ICPC codes are most commonly used by family doctors, but also by other health care providers in PHC, as they provide a sufficiently detailed level for reporting, analysis, and payment of healthcare services. Linking ICPC to clinical terminologies, without becoming too detailed or increasing the risk of coding inconsistencies, to collect data to classify morbidity data, for indexing of medical records, and health statistics from a PHC of view. ICPC codes can also be linked to guidelines, prescription systems, laboratory tests, patient leaflets etc. on computerised records, this will enhance their uses.

2.3 ICPC-2 Structure

ICPC was originally developed as a reason for encounter (consultancy/appointment/visit) classification. Since a patient's reason for encounter may be a known disease, a functional health problem, or a request for an intervention, ICPC needs to cover all three reference classifications on the level of a single PHC provider. Therefore, ICPC has codes for functioning and for interventions, although it has been mainly used in the diagnostic area.

ICPC-2 has a specific structure called **Bi-axial Alpha-numeric coding**. That means there are two axis, first axis is alpha character and the second one is numeric.

Axis 1	Alpha character (one letter)	Represent 17 chapters on body systems
Axis 2	Numeric character (two numbers)	Represent 7 components

- **Body systems chapters** - representing the localization of the problem and/or disease. This makes it easy use for healthcare providers. As well as chapters for the different body systems, there is a chapter for general and unspecified issues, and a chapter for social problems. The ability to capture unspecified issues and social problems is extremely important to understand what happens in primary care. The chapters are:

No	Chapter	Description
1.	A	General and Unspecified
2.	B	Blood, Blood Forming Organs and Immune Mechanism
3.	D	Digestive
4.	F	Eye
5.	H	Ear
6.	K	Cardiovascular
7.	L	Musculoskeletal
8.	N	Neurological
9.	P	Psychological
10.	R	Respiratory
11.	S	Skin
12.	T	Endocrine/Metabolic and Nutritional
13.	U	Urological
14.	W	Pregnancy, Childbearing, Family Planning
15.	X	Female Genital
16.	Y	Male Genital
17.	Z	Social Problems

- **Components** - The chapters are divided into seven components. The components deal with:

No	Code	Description
1.	1-29	Symptoms and Complaints
2.	30-49	Diagnostics, Screening and Preventive procedures
3.	50-59	Medication, Treatment and Procedures
4.	60-61	Test results
5.	62	Administration
6.	63-69	Referrals and other reasons for encounter
7.	70-79	Diagnosis/Diseases

A great deal of attention is paid to the patient's symptoms and complaints in the first component of each chapter as the reason for encounter (RFE), which is not captured by ICD. Linkage of codes from the beginning of an encounter, with the RFE, to its conclusion is possible with ICPC-2.

Codes 30-69 are so called **process codes** because they are related to the PHC services, as described in the table above.

There is a special division among the codes 70-79 that are standing for the diagnosis/diseases to the following: infections, neoplasms, injuries, congenital anomalies and other diagnosis.

There are so-called *rug-bug rubrics* that stands for the "other" cases that can not be describe by using all the other options. They are places at the end of component of each chapter, always with the number 9 as a second numeric character. Here is the example of these codes within the chapter

H – Ear:

Code	Description
H29	Ear Symptom/Complaint other
H69	Ear - Other reason for encounter
H79	Ear injury other
H99	Ear/Mastoid disease other

2.4 Mapping ICD-10 to ICPC2

This mapping allows ICPC to be used as the primary care lens into ICD. The reason for doing so is that the granularity of ICD is often too high and complex for its practical use in primary care. For example, for the single code of 'sinusitis' in ICPC-2, there are 16 concepts and subclasses in ICD. This level of detail is often unnecessary for primary care.

Example:

<i>ICD-10</i>	<i>ICPC-2</i>	<i>ICD-10</i>	<i>ICPC-2</i>	<i>ICD-10</i>	<i>ICPC-2</i>	<i>ICD-10</i>	<i>ICPC-2</i>
<i>A00</i>	<i>D70</i>	<i>A06</i>	<i>D70</i>	<i>A17</i>	<i>A70</i>	<i>A23</i>	<i>A78</i>
<i>A01</i>	<i>D70</i>	<i>A07</i>	<i>D70</i>	<i>A18</i>	<i>A70</i>	<i>A24</i>	<i>A78</i>
<i>A02</i>	<i>D70</i>	<i>A08</i>	<i>D70</i>	<i>A19</i>	<i>A70</i>	<i>A25</i>	<i>A78</i>
<i>A03</i>	<i>D70</i>	<i>A09</i>	<i>D73</i>	<i>A20</i>	<i>A78</i>	<i>A26</i>	<i>A78</i>
<i>A04</i>	<i>D70</i>	<i>A15</i>	<i>A70</i>	<i>A21</i>	<i>A78</i>	<i>A27</i>	<i>A78</i>
<i>A05</i>	<i>D70</i>	<i>A16</i>	<i>A70</i>	<i>A22</i>	<i>A78</i>	<i>A28</i>	<i>A78</i>

Source: *International Classification of Primary Care*, Oxford Medical Publications, available on: <http://www.ph3c.org/PH3C/docs/27/000496/0000908.pdf>

Similarly, in many cases ICD does not contain higher-level overarching codes or codes aggregated at a higher level which are often more meaningful for primary care. ICPC therefore provides the higher level terms to ICD and by doing this allows for a more meaningful aggregation of ICD-data at primary level. For example, in ICPC the most frequent cancers of the digestive system (colon cancer, stomach cancer and pancreatic cancer) have their own individual codes, and there is one code which captures other digestive cancers. This is not possible to do with ease with ICD, with 12 classes and sub-classes of digestive cancer and in the case of colon cancer ICD being split into many subclasses what is missing is the higher-level code of “large bowel cancer”. Users will sometimes want to separate out certain problems contained in a high-level overarching code or in aggregated codes into a more specific code. Expanded codes through ICPC-ICD mapping allow such users to be more specific, for example enabling the recording of diseases of low prevalence but of high clinical importance.

2.5 ICPC-3

It is quite obvious that ICPC-2 is not completely comprehensive, but improvement is constantly being worked on, as can be seen through the appearance of the third version of this classification.

There are certain diseases (like HIV/AIDS or COVID or other public health issues) that are not included. Also, there are no rubrics that are standing for risk factors (that are quite important for preventive care) or personal patient factors/characteristics.

ICPC-3 is published with the idea of compensating for the mentioned shortcomings. The ICPC-3 includes all those classes / concepts in primary care that can lead to better decisions by the providers and policy makers. It includes the new approach to health, person-centeredness, providing a medical language that is used in daily practice, instead of a medical language that has been developed for morbidity and mortality statistical purposes only.

ICPC-3 also has the Bi-axial Alpha-numeric coding, however there are more characters than just a three (one alpha and two numeric) like in ICPC-2, more chapters and which makes it much more complicated to use, especially in conditions where there is no complete computer equipment in PHC facilities.

3 CONCLUSION

The main advantages of ICPC are:

- It allows patients' health problems to be tracked over time through the recording of episodes of care, and by allowing the coding of the reason for encounter through to a recognizable disease/health problem and interventions,
- ICPC is a classification system which aims to reflect the content of primary care. The ICPC contains codes that are mainly based on the frequencies with which they are encountered in primary care and with a level of detail that is appropriate for primary care. It is possible to tailor ICPC to match local epidemiological needs,
- It complements other classifications like ICD,
- It is simple, good organized PHC classification that can be used even without IT infrastructure. It is available both in electronic and hard copy versions,
- ICPC is easy to distribute, with one of the key features highlighted by the creators being the fact that the entire list of codes fits on two A4 sheets. In addition, with the help of alpha numeric characters and colors, the user can very quickly find the appropriate code, which leads us to the conclusion that training health system staff to use the ICPC-2 should not require a lot of time and resources.
- It enables meaningful feedback to primary care, enables the exchange of information between primary and secondary care, as well as with policy-makers and funders to understand what is happening in primary care, and therefore improve the provision of care.

4 LITERATURE

- ICPC by WONCA, available on: <https://www.globalfamilydoctor.com/site/DefaultSite/filesystem/documents/Groups/WICC/International%20Classification%20of%20Primary%20Care%20Dec16.pdf>
- The International Classification of Primary Care: capturing and sorting clinical information, available on: <https://www.scielo.org/article/csc/2020.v25n4/1241-1250/en/>
- <https://www.integratedcare4people.org/toolkits/1644/international-classification-of-primary-care-3rd-revision/>
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- <http://www.ph3c.org/PH3C/docs/27/000197/0000188.pdf>
- Family International classifications, WHO, available on: <https://www.who.int/classifications/en/WHOFICFamily.pdf>
- The coming of age of ICPC: celebrating the 21st birthday of the International Classification of Primary Care, available on: <https://pubmed.ncbi.nlm.nih.gov/18562335/>

5 ANNEX

ICPC-2 – English International Classification of Primary Care – 2 nd Edition Wonca International Classification Committee (WICC)		Blood, Blood Forming Organs and Immune Mechanism B		Eye F		Musculoskeletal L	
Process codes		PROCESSES		Ear H		Neurological N	
-30 Medical Exam/Eval-Complete		SYMPTOMS/COMPLAINTS		Cardiovascular K			
-31 Medical Examination/Health Evaluation-Partial/Pre-op check		INFECTIONS					
-32 Sensitivity Test		NEOPLASMS					
-33 Microbiological/Immunological Test		INJURIES					
-34 Blood Test		CONGENITAL ANOMALIES					
-35 Urine Test		OTHER DIAGNOSES					
-36 Faeces Test		Digestive D					
-37 Histological/Exfoliative Cytology							
-38 Other Laboratory Test NEC							
-39 Physical Function Test							
-40 Diagnostic Endoscopy							
-41 Diagnostic Radiology/Imaging							
-42 Electrical Tracings							
-43 Other Diagnostic Procedures							
-44 Preventive Immunisations/Medications							
-45 Observe/Educate/Advice/Diet							
-46 Consult with Primary Care Provider							
-47 Consultation with Specialist							
-48 Clarification/Discuss Patient's RFE							
-49 Other Preventive Procedures							
-50 Medicat-Script/Regen/Renew/Inject							
-51 Incise/Drain/Flush/Aspirate							
-52 Excise/Remove/Biopsy/Destruction/Debride							
-53 Instrument/Catheter/Intubate/Dilate							
-54 Repair/Fixate-Suture/Cast/Prosthetic							
-55 Local Injection/Infiltration							
-56 Dress/Press/Compress/Tamponade							
-57 Physical Medicine/Rehabilitation							
-58 Therapeutic Counselling/Listening							
-59 Other Therapeutic Procedure NEC							
-60 Results Tests/Procedures							
-61 Results Exam/Test/Record							
-62 Administrative Procedure							
-63 Follow-up Encounter Unspecified							
-64 Encounter Initiated by Provider							
-65 Encounter Initiated third person							
-66 Refer to Other Provider (EXCL M.D.)							
-67 Referral to Physician/Specialist/Clinic/Hospital							
-68 Other Referrals NEC							
-69 Other Reason for Encounter NEC							
General and Unspecified A							
A01 Pain general/multiple sites							
A02 Chills							
A03 Fever							
A04 Weakness/tiredness general							
A05 Feeling ill							
A06 Fainting/syncope							
A07 Coma							
A08 Swelling							
A09 Sweating problem							
A10 Bleeding/haemorrhage NOS							
A11 Chest pain NOS							
A12 Concern/fear medical treatment							
A13 Irritable infant							
A14 Concern about appearance							
A15 Euthanasia request/discussion							
A16 Risk factor for malignancy							
A17 Risk factor NOS							
A18 Fear of death/dying							
A19 Fear of cancer NOS							
A20 Fear of other disease NOS							
A21 Limited function/disability NOS							
A22 General symptom/complaint other							
A23 Tuberculosis							
A24 Measles							
A25 Chickenpox							
A26 Malaria							
A27 Rubella							
A28 Infectious mononucleosis							
A29 Viral exanthem other							
A30 Viral disease other/NOS							
A31 Infectious disease other/NOS							
A32 Malignancy NOS							
A33 Trauma/injury NOS							
A34 Multiple trauma/injuries							
A35 Secondary effect of trauma							
A36 Poisoning by medical agent							
A37 Adverse effect medical agent							
A38 Toxic effect non-medical substance							
A39 Complication of medical treatment							
A40 Adverse effect physical factor							
A41 Effect prosthetic device							
A42 Congenital anomaly OS/multiple							
A43 Abnormal result investigation NOS							
A44 Allergy/allergic reaction NOS							
A45 Premature newborn							
A46 Perinatal morbidity other							
A47 Perinatal mortality							
A48 Death							
A49 No disease							
A50 Health maintenance/prevention							
A51 General disease NOS							

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