



WORLD ORGANIZATION OF FAMILY DOCTORS

AN INTRODUCTION TO
**THE INTERNATIONAL CLASSIFICATION OF
PRIMARY CARE**
Version 2

Wonca International Classification Committee

THE INTERNATIONAL CLASSIFICATION OF PRIMARY CARE

Introduction

The International Classification of Primary Care (ICPC), developed by the ICPC Working Party, broke new ground in the world of classification when it was published in 1987 by WONCA, the World Organisation of National Colleges, Academies, and Academic Associations of General Practitioners/Family Physicians, now known more briefly as the World Organisation of Family Doctors (Wonca). For the first time health care providers could classify, using a single classification, three important elements of the health care encounter; reasons for encounter (RFE), diagnoses or problems, and process of care. Problem orientation of the medical record and linkage of encounters over time permits classification of the episode from the beginning with an RFE to its conclusion with a more defined problem, diagnosis, or disease.

The new classification departed from the traditional International Classification of Disease (ICD) chapter format in which the axes of its chapters vary, from body systems (Chapters III, IV, V, VI, VII, VIII, IX, X, XI, XIII and XIV) to aetiology (Chapters I,II,XVII,XIX,XX) and to others (Chapters XV,XVI,XVIII,XXI). This mixture of axes creates confusion, since diagnostic entities can with equal logic be classified in more than one chapter, for example influenza in either the infections chapter or the respiratory chapter, or both. Instead of conforming to this format, the ICPC *chapters* are all based on body systems, following the principle that localisation has precedence over aetiology. The *components* that are part of each chapter permit considerable specificity for all three elements of the encounter, yet their symmetrical structure and frequently uniform numbering across all chapters facilitate usage even in manual recording systems. The rational and comprehensive structure of ICPC is a compelling reason to consider the classification a model for future international classifications.

Since publication ICPC has gradually received increasing world recognition as an appropriate classification for general/family practice and primary care, and has been used extensively in some parts of the world, notably in Europe and Australia.

While ICPC was originally designed for paper based data collection and analysis, since the advent of practice based electronic medical records its use has rapidly spread to electronic clinical and research systems

The first version of ICPC published in 1987 is referred to as ICPC-1. The version in the 1993 publication “The International Classification of Primary Care in the European Community: With a Multi-Language Layer” is known as ICPC-E. The 1998 version 2 is referred to as ICPC-2. ICPC-2-E refers to a revised electronic version released in 2000. Subsequent revisions of ICPC-2-E are also labelled with a release date. ICPC is used when referring to the generic classification.

History of the Wonca ICPC system

In primary care many of the conditions treated are vague and ill-defined and they can be classed only under symptomatic headings. In 1963 the Royal College of General Practitioners estimated that only fifty-five per cent of diseases in general practice could be diagnosed accurately in terms of aetiology, pathology and morphology. Others can only be described in terms of symptoms or complaints, and some consultations such as those for immunisation or medical examination do not relate to an underlying condition.

Until the mid 1970's most morbidity data collected in primary care settings for statistics and research was classified using the International Classification of Diseases (ICD). This had the important advantage of international recognition, aiding comparability of data from different countries. However there was the disadvantage that the many symptoms and non-disease conditions that present in primary care were difficult to code with this classification, originally designed for application to mortality statistics, and with a disease-based structure.

The Classification Committee of the World Organisation of National Colleges, Academies and Academic Associations of General Practitioners/Family Doctors (WONCA) (now the World Organization of Family Doctors (Wonca)) first met in 1972 in Melbourne at the time of the inauguration of WONCA. Many of its members had already been corresponding for some years about morbidity classifications for general practice. The Committee agreed that it was time to design a classification specifically for primary care.

Recognising the problems of the ICD, and the need for an internationally recognised classification for general practice, the WONCA Classification Committee (now the Wonca International Classification Committee (WICC)) designed the International Classification of Health Problems in Primary Care (ICHPPC), first published in 1975, with a second edition in 1979 related to the 9th revision of ICD. Although this provided a section for the classification of some undiagnosed symptoms, it retained the basic ICD structure and was still inadequate. A third edition (ICHPPC-2-Defined) in 1983 had added to it criteria for the use of most of the rubrics, greatly adding to the reliability with which it could be used, but not overcoming its deficiencies for primary care. A new classification was needed for both the patient's reason for encounter and the provider's record of the patient's problems.

At the 1978 World Health Organisation (WHO) Conference on Primary Health Care in Alma Ata, adequate primary health care was recognised as the key to the goal of "health for all by the year 2000". Subsequently WHO recognised that the building of appropriate primary care systems to allow the assessment and implementation of health care priorities was only possible if the right information was available to health care planners. Classification of primary care data was seen as vital to this process.

Within WHO, this led to the development of the concept of a 'Family of Classifications', requiring new classification systems, particularly for primary care. At this time, in the US National Center for Health Statistics (NCHS), a classification of patients' reasons for visiting physicians had been developed. This interest led NCHS to provide funds to

support the development of a new Classification of Reasons for Encounter in Primary Care. A small working party was formed under the auspice of WHO, including a US representative as chair, a WICC member, and a staff person of NCHS who had been involved in the development of the Reason for Visit Classification. Over several years of work, this working party developed the Reason for Encounter Classification (RFEC), which, after extensive field trials involving many members of WICC, eventually evolved into ICPC.

Reasons for encounter (RFEs) are the agreed statement of the reason(s) why a patient enters the health care system, representing the demand for care by that person. They may be symptoms or complaints (headache or fear of cancer), known diseases (flu or diabetes), requests for preventive or diagnostic services (a blood pressure check or an ECG), a request for treatment (repeat prescription), to get test results, or administrative (a medical certificate). These reasons are usually related to one or more underlying problems which the doctor formulates at the end of the encounter as the conditions that have been treated, which may or may not be the same as the reasons for the encounter.

Disease classifications are designed to allow the health care provider's interpretation of a patient's health care problem to be coded in the form of an illness, disease, or injury. In contrast, a Reason for Encounter classification focuses on data elements from the patient's perspective. In this respect, it is patient oriented rather than disease or provider oriented. The reason for encounter, or demand for care, given by the patient has to be clarified by the physician or other health worker before there is an attempt to interpret and assess the patient's health problem in terms of a diagnosis, or to make any decision about the process of management and care.

The working party developing the RFE classification was extended with members from WICC to organize and analyze the field trials. The first field trial to test the completeness and reliability of the RFEC was a pilot study carried out in the Netherlands in 1980. The results obtained from this pilot study prompted further feasibility testing in 1983. This was carried out in nine countries, namely, Australia, Brazil, Barbados, Hungary, Malaysia, The Netherlands, Norway, the Philippines and the United States. The entire classification was translated from English into several languages, including French, Hungarian, Norwegian, Portuguese and Russian. The analysis of more than 90,000 reasons for encounter recorded during over 75,000 individual encounters and the collective experience of the participants resulted in the development of a more comprehensive classification.

In the course of this feasibility testing it was noted that the RFEC could easily be used to classify simultaneously the reasons for encounter and two other elements of problem-oriented care, namely the process of care and the health problems diagnosed. Thus this conceptual framework allowed the evolution of the Reason for Encounter Classification into the International Classification of Primary Care (ICPC).

At this point, problems in relation to the concurrent development of ICD-10 prevented WHO from publishing ICPC, but after negotiation, it endorsed the title of ICPC, which enabled publication of the first edition by WONCA in 1987. While ICPC-1 was much

more appropriate for primary care than previous classifications based on the ICD framework, it did not include inclusion criteria for the rubrics, or any cross referencing. It was thus in this respect less useful than the previous publication, ICHPPC-2-defined, though it referred to it as a source of inclusion criteria which could be used.

In 1985 a project began in a number of European countries, sponsored by the EC, to test the usefulness of the new classification system in producing morbidity data from general practice for national health information systems. This involved translations of the classification and comparative studies across countries. The results were published in 1993 in a book including an update of ICPC .

In 1998 Wonca published a revised version of ICPC (ICPC-2) with inclusion and exclusion criteria attached to the classification rubrics, and a mapping to ICD-10. A revised electronic version was released in 2000. This version is known as the International Classification of Primary Care Version 2-Electronic, abbreviated to ICPC-2-E. See Okkes IM, Jamouille M, Lamberts H, Bentzen N. ICPC-2-E, the electronic version of ICPC-2. Differences with the printed version and the consequences. *Family Practice* 2000; 17:101-106 available at:

<http://fampra.oupjournals.org/cgi/content/full/17/2/101/DC1>. Subsequent revisions of ICPC-2 have been issued with a version date to differentiate the most recent revision.

In 2003 WHO recognised ICPC-2 as a WHO related classification for the recording of data in primary care. Since 1980 WONCA has been a Non-Government Organisation (NGO) in official relations with WHO, and joint work together since has led to a better understanding of the requirements of primary care for its own information systems and classifications within an overall framework encompassing all health services. This relationship will be further strengthened by future collaboration in the development of health classifications.

Examples of primary care data analysis and statistics

ICPC has been increasingly used for reporting the activity of family doctors and other primary care practitioners at both national and international level. A brief selection of recent publications is listed below, extracted from a bibliography of approximately 400 publications using ICPC. This bibliography is available through the Wonca web site at www.GlobalFamilyDoctor.com/wicc

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Bayram C, Britt H, Kelly Z, Valenti L. Male consultations in general practice in Australia 1999-00. Canberra: Australian Institute of Health and Welfare, 2003.

Britt H, Knox S, Miller GC. Changes in pathology ordering by GPs in Australia 1998-2001. Canberra: Australian Institute of Health and Welfare, 2003.

Tahepold H, Maaros HI, Kalda R, Brink-Muinen A. Structure and duration of consultations in Estonian family practice. *Scand J Prim Health Care*. 2003 Sept.;21(3):167-170.

Britt H, Miller GC, Knox S, Charles J, Valenti L, Henderson J et al. General practice activity in Australia 2002-03. Canberra: Australian Institute of Health and Welfare, 2003.

Kenter EG, Okkes IM, Oskam SK, Lamberts H. Tiredness in Dutch family practice. Data on patients complaining of and/or diagnosed with "tiredness". *Fam Pract*. 2003 Aug.;20(4):434-440.

McManus P, Mant A, Mitchell P, Britt H, Dudley J. Use of antidepressants by general practitioners and psychiatrists in Australia. *Aust N Z J Psychiatry*. 2003 Apr.;37(2):184-189.

Ijzermans CJ, Mentink S, Klaphake LM, van Grieken JJ, Bindels PJ. [Contacts outside of office hours: complaints presented to the general practitioner and to the emergency department]. *Ned Tijdschr Geneeskd*. 2002 July;146(30):1413-1417.

Okkes IM, Polderman GO, Fryer GE, Yamada T, Bujak M, Oskam SK et al. The role of family practice in different health care systems: a comparison of reasons for encounter, diagnoses, and interventions in primary care populations in the Netherlands, Japan, Poland, and the United States. *J Fam Pract*. 2002 Jan.;51(1):72-73.

Recart C, Castro P, Alvarez H, Bedregal P. [Characteristics of children and adolescents attended in a private psychiatric outpatient clinic]. *Rev Med Chil*. 2002 Mar.;130(3):295-303.

O'Mahony B, O'Neill Y, Lynch C, Fennessy M, Lanigan AM, O'Reilly O. Morbidity data collection in general practice: experience in the South Eastern Health Board 1998-1999. *Ir Med J.* 2001 Nov.;94(10):299-300, 302.

van Bergen JE. [Increased incidence of gonorrhoea and Chlamydia trachomatis infections in family practice in southeast Amsterdam, 1996-2000]. *Ned Tijdschr Geneesk.* 2001 Sept.;145(35):1691-1693.

Brûlet JF, Trombert-Paviot B, Mennerat F, Rodrigues JM. Organisation et codage des données en médecine ambulatoire (Part 1). [Data organisation and coding in ambulatory medicine (Part 1)]. *Rev Prat Méd Gén.* 2000;14(488):315-319.

Letrilliart L, Viboud C, Boelle PY, Flahault A. Automatic coding of reasons for hospital referral from general medicine free-text reports.[In Process Citation]. *Proc AMIA Symp.* 2000:487-491.

Reiso H, Nygård JF, Brage S, Gulbrandsen P, Tellnes G. Work ability assessed by patients and their GPs in new episodes of sickness certification. *Fam Pract.* 2000;17(2):139-144.

Wun Y, Lu X, Liang W, Dickinson J. The work by the developing primary care team in China: a survey in two cities. *Fam Pract.* 2000;17(1):10-15.

Grimsmo A, Johnsen K. Data-assisted review of medically treated injuries in general practice. *Eur J Gen Pract.* 1999;5:59-65.

Mennerat F, Lamberts H, Okkes I. Dossier de patient structuré en épisodes et analyse des données en médecine générale. 2. Les perspectives en France. In: Venot A, Falcoff H, editors. *L'informatisation du cabinet médical du futur. Informatique et Santé.* Paris: Springer-Verlag, 1999: 225-230.

Pult L, Borst F, Sztajel J, Ruiz J, Scherrer JR, Stalder H. Comment classifier les patients en médecine de premier recours? *Medecine et hygiene.* 1999;57(2270):1799-1804.

Bijl D, Van Sonderen E, Haaijer-Ruskamp FM. Prescription changes and drug costs at the interface between primary and specialist care. *Eur J Clin Pharmacol.* 1998;54(4):333-336.

de Silva N, Mendis K. One-day general practice morbidity survey in Sri Lanka. *Fam Pract.* 1998;15(4):323-331.

Vehvilainen AT, Kumpusalo EA, Takala JK. Saturday night fever? Reasons for referral from health centres to hospitals during weekends in Finland. *Fam Pract.* 1998;15(6):507-512.

Use of the ICPC classification around the world

An increasing number of countries are adopting ICPC as one of their diagnostic and data collection systems. The growing global acceptance of ICPC is due to rapidly increasing use in research and dedicated advocates in numerous countries around the world. The following is a brief status report on the use of the latest version, ICPC-2.

French Language version.

Classification Internationale des Soins Primaires (CISP - ICPC in French)

The development of ICPC in French-speaking countries came from a group of people working in primary care in the French-speaking part of Belgium. In 1988 a group from the Fédération des Maisons Médicales in Brussels translated ICPC nomenclature into French and this led to the full translation of ICPC and its publication as CISP-1 in 1992.

A number of interested general practitioners started to use CISP in electronic health records, and it was validated as a useful tool in a number of research projects in Belgium and France. The CISP-Club, based in France, was formed to coordinate, develop and promote ICPC in French-speaking countries. ICPC-2 has been translated as CISP-2 and an electronic version, CISP-2-E, is also available. The CISP-Club meets regularly and has members from a number of French-speaking countries and regions and is active in the development of Electronic Medical Records, medical informatics, data management, confidentiality and privacy issues as well as ICPC.

Individual Country usage.

Argentina

The Hospital Italiano de Buenos Aires has developed a problem oriented ambulatory electronic medical record (EMR). More than 1,500 physicians use the EMR, including general practitioners and specialists. All components of the problem list (diagnosis, reasons for encounter, and risk factors) are coded using ICPC-2-E, ICD-10 and Snomed CT. A centralised coding department uses the free-text physician input to encode problems. The coders have already coded more than one million problems, assisted in this process by a text-matching algorithm that automatically codes more than 70% of the problems. While private institutions are not required to code diagnosis in Argentina, the International Classification of Health Problems in Primary Care (ICHPPC) is still being used in the Public Health System, for coding diagnosis from ambulatory visits.

Australia

The Family Medicine Research Centre and General Practice Statistics and Classification Unit at the University of Sydney are at the forefront of development and promotion of ICPC in Australia. FMRC The Family Medicine Research Centre is a Wonca

Collaborating Centre and distributor for ICPC-2 in Australia and the Asia Pacific region, and continues to use ICPC-2 in the national general practice data collection program (BEACH) under the auspice of the Australian Institute of Health and Welfare.

ICPC-2 is increasingly used with ICPC-2 Plus, an Australian developed terminology classified to ICPC-2, in electronic health record systems. Thirty-two software developers are currently licensed to include ICPC-2 in their software and approximately 1500 general practitioners are using ICPC-2 in electronic health records in their practices.

Australia is moving rapidly with the development of standards for electronic health records and other aspects of eHealth such as HL7 communication standards. Australian Government efforts in this area are being consolidated in a new Information and Communication Division of the Department of Health and Ageing. The Australian Government is currently negotiating with Wonca for a national license for ICPC-2.

The Australian Government Expert Group on Classification recommended that ICPC-2 be the standard classification for general practice and patient self reported health problems. The National Health Information Management Group endorsed this recommendation. A Health Data Standards Committee and a Classification and Terminology Working Group have now replaced these groups. The latter will integrate work on terminologies and classifications to ensure consistent health concept representation and classification.

A 3-year work plan has been developed by the National Centre for Classification in Health (NCCH) outlining a development program to integrate terminologies and their relationship to classifications. In order to assess the use of terminologies and classifications the Australian Government has purchased evaluation licenses for a range of terminologies and classifications including ICPC-2, ICPC-2 Plus, SNOMED and several others.

Belgium

In Belgium, the initial experience with the utilisation of ICPC were in the late eighties, in Flanders, within a framework of Ph.D research projects, and in Wallonia within a framework of morbidity recording projects by the Federation of Health Centers.

In 2002, the Belgium Minister of Health acquired a licence from Wonca for use of ICPC-2-E in electronic medical records. The ministry has convened a National Classification Committee, and a Label Committee. WICC representatives from Flanders and Wallonia have been invited to join both committees. In 2005 the inclusion of ICPC will be a requirement for diagnosis/problem labels in Belgian general practitioners' electronic medical records accredited with a Quality Label. An additional payment is made to Belgian general practitioners using such accredited electronic medical records.

Cameroon

ICPC, used in an electronic medical record system in primary care settings in a low resource country like Cameroon, appears as a challenge. ICPC has great flexibility and the ability to keep track of symptoms and diagnosis in an environment where, very often due

to poor availability of investigation techniques, the patient diagnosis is labelled at a symptom level. A patient coming for cough, fever, sharp lower chest pain and dyspnoea will probably be assigned the diagnosis of pneumonia in a primary health care setting in Africa. In a more advanced country, after thorough investigations, the patient could end up with a more precise diagnosis such as acute basal lobe pneumococcal pneumonia. Such a diagnosis will not be reached very often in this environment. Another example is of a patient coming with a 'reason for encounter' of headache and ending up with a diagnosis of headache. This is not unusual so it is quite important for public health professionals to keep track of these symptom diagnoses. An advancement in the system would be to equip health care facilities of a country with an ICPC reporting system so that diagnosis and reasons for encounter are directly sent through network to a remote server at the central level. This would allow public health professionals to get real time information on why people are consulting and what problems are treated.

For the moment 14 primary health care providers, all belonging to the MedCab User's group, have been trained in the use of ICPC and are now participating in an experiment using an electronic medical recording system to collect data generated during patient/doctor encounter in routine consultations.

Cyprus

A collaboration between the Clinic of Social and Family Medicine of the University of Crete and the Ministry of Health has been established for research purposes. Among other projects, two primary health care centers are using ICPC-2 in an EMR system in a pilot study for Cyprus with license from Wonca.

Denmark

In Denmark, the use of ICPC is widely accepted as the structure able to provide a professional overview of patient care. The table of contents of the General Practitioners' Journal in Denmark (*Månedsskrift for Praktisk Lægegerning*) is based on the ICPC structure. The counties' information systems for the primary and secondary health-care sectors have adopted ICPC. Extended Danish ICPC-1 is increasingly being used in everyday work. A random check showed that 40% use the classification on a daily basis.

The ICPC-2 book has been translated into Danish, and work continues, supported by the Danish College of General Practitioners, to convert ICPC-2-E to a user-friendly electronic Extended Danish ICPC-2 with auxiliary registers. This work is expected to be finalised in 2005.

Finland

At end of August 2002, the League of Local Authorities (Kuntaliitto) persuaded a group of 10 bigger municipalities to fund a project to translate ICPC-2 to both Finnish and Swedish and to provide the municipalities with the appropriate software. In May 2003 there was a national seminar on classification issues in primary health care. It was jointly organized by the Classification Centre at the National Agency for Health and Social Welfare, the Finnish Association for General Practice and Kuntaliitto.

Within the framework of the project, a smaller group was appointed to do the translation work. The group convened three times and also kept regular email correspondence ongoing between the meetings. It was decided to use professional translation companies for the textual part of the book, but to do the translation of Chapter 10 without external assistance. All the rubrics are by now translated into both Finnish and Swedish and are made available in electronic format.

Germany

The German Ministry of Education and Research has funded the Department of General Practice and Health Services Research at Heidelberg University to undertake a large research project for a general practice morbidity registration network using ICPC-2-E. ICPC-2-E has been translated into German and a German two page ICPC-2-E summary has been prepared. Currently an episode based and problem oriented documentation software for GPs is being developed based on ICPC-2-E. These tools will serve to establish ICPC-2-E in a German GP network and in future practice and research. The project and ICPC-2-E experience has caused massive interest from all relevant German General Practice Associations. Germany is faced with ongoing health care system reforms that go beyond cost containment and include ambitious plans for mandatory quality management and EMR both in hospitals and doctors' offices. In these circumstances the existing ICD-10 based documentation that mostly serves billing purposes represents a risk for GPs. Hence ICPC-2-E should help to better demonstrate the patient and morbidity care by GPs in the German health care system.

Greece

The Greek Association of General Practice has translated ICPC-2 into the Greek language and in collaboration with the Clinic of Social and Family Medicine of the University of Crete they are utilizing several implementations of ICPC-2 in Greece. Several practices in Greece are using ICPC-2 and there is a growing interest for the use of ICPC-2 for research and clinical purposes. Greece has experienced during the last two years a health reform where ICPC-2 has received significant attention. A committee has been established by the Minister of Health and Welfare and it is working on the classifications that will be included in the EMR systems that are planned for the next two years. The recommended classifications were ICD-10 and ICPC-2 with possible modifications for the Greek context.

Japan

ICPC-2 and ICPC-2-E was translated into Japanese in 2002 and published with sponsorship by Japanese Academy of Primary Care Physicians (JAPCP).JAPCP has organized a local committee to promote ICPC-2 in Japan. The committee will provide a training workshop for ICPC-2 and is also starting to organize a research network using ICPC-2.

Malta

In Malta, more than fifteen GPs out of approximately 200, use ICPC-2-E in an electronic patient record for their day-to-day practice. The program, Transhis, donated by the

Department of Family Practice of the Academic Medical Center, University of Amsterdam, allows doctors to use ICPC to organize their individual patient records in great detail. It also contributes to improvements in practice management via extensive reports of diagnoses, encounters, interventions, referrals and prescriptions in their practice. The data collected by some of these doctors is collated into a database of episodes of care, which is being used to study Family Practice in Malta. At the end of 2003, the database will span three years of continuous recording. It already contains data for 10,000 patients, 32,000 encounters, 32,000 episodes of care, 57,000 reasons for encounter and 84,000 interventions.

Netherlands

In the Netherlands, ICPC increasingly forms the lynchpin of electronic patient records in family practice. Its use is mandatory in electronic prescribing systems. Family practice research is, if at all feasible, based on ICPC. Virtually all official data on morbidity in family practice in the Netherlands are coded with ICPC. The official Dutch epidemiological database now includes selected ICPC coded information from the Transition Project of the University of Amsterdam and three other family practice networks. The electronic health record based on the comprehensive use of ICPC coding reasons for encounter, assessment and process, used in the Transition Project is, or has been used in Japan, Poland, Malta, Greece, and Serbia.

Based on the four language ICPC-2/ICD-10 thesaurus, a close co-operation has been established between the University of Amsterdam and the Flemish Department of General Practice in Ghent and the (French speaking) Department of the Free University in Brussels. This four-language thesaurus is likely to be expanded with other languages such as German.

The ICPC-2/ICD-10-thesaurus, prepared by the University of Amsterdam together with the Dutch College with a Ministry of Health grant, has recently become available, and includes a diagnostic terminology with 80,000 entries for use by family physicians and specialists. The Dutch College of General Practitioners continues to make their products (e.g. lab tests, protocols, patient education letters, recall systems) accessible through linkages to ICPC.

The available translations of ICPC-1-short titles and of chapter 10 of ICPC-2 have been included in a World Wide Web accessible database, as part of a joint project between the University of Amsterdam and the National Library of Medicine in Washington DC. The multi-language content relies upon an international technical standard known as Unicode, which attempts to provide a means for computer-based representation of the characters of all known living human languages. Rules have been established to designate national or language coordinators. Anyone with an Internet connection can search ICPC, and send comments to its maintainers. This will allow family doctors, researchers and other interested parties to participate in assessing the quality of existing translations, and to contribute to new translations of ICPC-2. The US National Library of Medicine (NLM) in Washington, DC, is in the process of including the ICPC/ICD-10 Thesaurus in Dutch and English into the Unified Medical Language System (UMLS), at the same time allowing a direct mapping to the diagnostic concepts in SNOMED-CT (work to be finished by June, 2004).

Norway

ICPC has been the official standard for classification of diagnoses in general practice in Norway since 1992. General practitioners are obliged to label all fee-for-service bills, sick-leaves and social security forms with an ICPC-diagnosis to get them accepted by the health authorities. This way all general practitioners use ICPC. Every patient contact is recorded with at least one ICPC diagnosis from any of the 7 chapters. Software used in electronic patient records has made this an easy and well accepted routine. ICPC is used regularly in official statistics about general practice and social security in Norway. It is also one of the main tools used in audit and quality assurance in general practice and has been applied in many projects.

The Health and Social Directorate granted EUR 450,000 in 2001 for the translation and implementation of ICPC-2, including the ICPC-2 – ICD-10 conversion structure. Norway has purchased a national licence from Wonca for the use of ICPC-2-E. The Norwegian translation of ICPC-2 was released early in 2004.

Portugal

ICPC-2 was translated into Portuguese in 1999 and published with sponsorship by Associação Portuguesa dos Médicos de Clínica Geral (APMCG). The book was widely distributed to general practitioners working in the public health system. General practitioners working for the national health system use traditional paper-based records, and electronic medical records are rarely used. As a consequence ICPC is infrequently used in their everyday work. However, ICPC-2 is the classification system most frequently used in research, and is also widely used in family practice training programs.

Romania

ICPC-1 was first used in Romania in 1996 by the Romanian Society of Family Medicine (RSFM) in a Morbidity Study where 34 family doctors registered data on paper, during one year. At the end of the project the coordinators concluded it was necessary to develop a sentinel practice network where family doctors could register data using ICPC on computers. In 1999 ICPC-2 was translated and published and used in the projects "ICPC-2000" and "GP-Medinet". One hundred family doctors from the Sentinel Dispensaries Network (Medinet), selected from all over the country, were collecting data using dedicated software MedINS that used ICPC-2. This project was started by RSFM and is currently being managed by the National Centre for Studies in Family Medicine.

Russia

ICPC has been translated into Russian and published with financial assistance from the Development of Community Medicine in North West Russia, Barents Health Programme, provided by the Ministry of Health in Norway.

At the moment the Russian Ministry of Health uses ICD-10 only. ICPC will be introduced into several Primary Health Care Centres in the Arkhangelsk region and in the Northern State Medical University. As new generations of doctors are trained in general/family practice it is expected that ICPC use will become more widespread.

Serbia

In 2002, a project was established between the International Red Cross in Beograd, Serbia, and the Departments of Family Practice of the Universities of Beograd and Amsterdam, to set up primary care recording in Kraljevo, Serbia. This project uses ICPC in Serbian, and the electronic health record (EHR) based on that developed in the University of Amsterdam Transition Project. Over 60 family physicians are using the system, comprehensively coding reasons for encounter, assessment and process with ICPC.

Slovenia

In Slovenia general practitioners are free to use any classification, but reports to government bodies must be in ICD-10. A translation of the ICPC-2 book has been made into Slovenian. This has been subject to a process of verification and field trials with general practitioners interested in research.

The principles of classification using ICPC as a model are taught at undergraduate level in the Department of Family Care at Ljubjana University, and vocational trainees receive both theoretical and practical training in their coursework.

Spain

ICPC-1 is the core classification in the more popular electronic medical records in primary care in Spain. Both ICPC-1 and ICPC-2 have been translated and published in Spanish. At the moment ICPC-2 is only a research classification. In hospitals, DRG and ICD-9-CM classifications are widespread, and little is known about ICPC. There is an agreement about the Minimum Basic Data Set for use in hospitals for medical records, but nothing similar in primary care. Confidentiality of electronic medical records and a central Government database are key issues in Spain.

Sri Lanka

ICPC was first used in Sri Lanka in the National General Practice survey in 1996. This research won a Wonca Regional Research Prize and was subsequently published in Family Practice. This was followed by the most comprehensive GP study done in Sri Lanka by the Institute of Policy Studies. In this study, ICPC was used as the primary coding system with employment of the BEACH methodology from Australia. The final report on this project is now ready for publication.

ICPC is promoted through the College of General Practitioners of Sri Lanka, which has named ICPC as the recommended coding system for medical records. In the Diploma of Family Medicine course two lectures are devoted to classification and coding systems from ICHPPC to ICPC-2. The College promotes ICPC at every forum where the Government Health Ministry is promoting the use of ICD-10 even for primary care.

Sri Lanka is developing e-governance and the health sector has been identified as one of the 5 areas to use information and communications technology to increase efficiency and

quality. Much effort has been made to get a primary care electronic record in to this program, involving the use of ICPC for classification.

United States of America

It has been difficult to have ICPC accepted in the USA because of the complexity of the health care system, the number of competing interests and the strong support for hospital-based/specialist classifications. However, recent developments may improve this situation. Government-subsidized licenses for standard clinical terminology, Snomed CT, and the commissioning of the Institute of Medicine (IOM) to design a standardized electronic medical record model are both designed to help create a National Health Information Infrastructure and promote electronic medical records.

The National Library of Medicine has signed a five-year contract to license Snomed International's clinical terminology. This arrangement will make the Snomed CT language available free to health care organizations, allowing them to integrate the terminology into their information systems. As reliable mapping exists of Snomed's diagnostic categories with ICPC, it should be possible to allow Family Physicians to document patient care that characterizes their clinical domain in Electronic Medical Records using Snomed CT.

Standards on patient medical record information are to be published in 2004. Individuals representing the Agency for Health Care Research and Quality, the National Center for Health Statistics, the National Library of Medicine, the Subcommittee on Standards and Security of the National Committee for Vital and Health Statistics, as well as representatives of the American Academy of Family Physicians, members of the North American Primary Care Research Group Special Interest Group on ICPC, and the WICC have been invited to collaborate in developing these standards, and to assist in developing a strategy to enable the recording of valid and reliable clinical data in primary care practice settings, and to safeguard research in family practice.

Purpose and definition of the classification

Title: The International Classification of Primary Care Version 2. Short title: ICPC-2
ICPC is a classification which reflects the distribution and content of aspects of primary care. It was designed as an epidemiological tool to classify data about three important elements of the health care encounter ie reasons for encounter (RFE), diagnosis or problem, and the process of care. It is designed for use in paper based statistical collections and in electronic information systems for both encounters and episodes of care. It has inclusion and exclusion criteria in addition to paper based and electronic indexes to guide appropriate usage. Maps are provided from other classifications such as ICD-10 so that ICPC may also be used as an 'organising principle' for data collected in those classifications.

Technical qualities of the classification

ICPC has a biaxial structure with 17 **chapters** on one axis and seven **components** on the other.

Chapters are based on body systems with an additional chapter for psychological problems and one for social problems. Each chapter is identified by a single alpha code which is the first character of all rubrics belonging in the chapter (Figure 1). Each chapter is divided into seven **components**, identified by a range of two digit numeric codes which are not always uniform across chapters.

Structure of ICPC

Components	Chapters																
	A	B	D	F	H	K	L	N	P	R	S	T	U	W	X	Y	Z
1. Symptoms, complaints																	
2. Diagnostic, screening prevention																	
3. Treatment, procedures medication																	
4. Test results																	
5. Administrative																	
6. Other																	
7. Diagnoses, diseases																	

A	General	L	Musculoskeletal	U	Urinary
B	Blood, blood forming	N	Neurological	W	Pregnancy, family planning
D	Digestive	P	Psychological	X	Female genital
F	Eye	R	Respiratory	Y	Male genital
H	Ear	S	Skin	Z	Social
K	Circulatory	T	Metabolic, endocrine, nutrition		

Component 1 provides rubrics for symptoms and complaints. It drew on the National Ambulatory Medical Care Survey/Reason for Visit Classification (NAMCS/RFV) and on the RFEC developed by the WHO working party. Rubrics in this component can be used to describe presenting symptoms, and are valuable for describing the problem under management (in a problem list in the medical record) when the condition is as yet ill-defined (eg: general ill-feeling; feeling tired).

Component 7 is the diagnosis/disease component in each chapter. This component will be the one most often used when you have sufficient information to arrive at a diagnosis in the

medical record or problem list. It is based on the ICHPPC-2 and most rubrics are directly comparable. Within this diagnostic component are five sub groups which are not numerically uniform across chapters:

- . infectious diseases;
- . neoplasms;
- . injuries;
- . congenital anomalies;
- . other diseases.

Components 1 and 7 in ICPC function independently in each chapter and either can be used to code patient RFEs, presenting symptoms, and diagnoses or problems managed.

Components 2-6 are common throughout all chapters, each rubric being equally applied to any body system.

Component 2 covers diagnostic screening, prevention. It is useful when there is no underlying pathology for the problem under management eg: immunisation, check up (partial or full); advice and health instruction.

Component 3, treatment, procedures and medication. This component should rarely if ever be used to describe a problem under management as it covers the processes involved in patient care. However for those who wish to code procedures as well as problems, these codes will prove very useful.

Components 2 and 3 are based broadly on the ICD-9 Procedures in Medicine and are heavily influenced by the International Classification of Process in Primary Care (IC-Process-PC).

Component 4, Test results and **Component 5**, Administrative, provide somewhere to put those difficult problem labels which frequently have no pathology (eg: completing a patient's application for a passport would fall into Component 5).

The structure of ICPC represents a move away from the combined anatomical and aetiology based structure of ICD. For example, where ICD includes a separate chapter for neoplasms, one for infections and infestations, and another for injuries, such problems are distributed among chapters in ICPC, depending on the body system to which they belong. Regrouping of the rubrics (eg for all neoplasms in all body systems) can still be undertaken across chapters if analysis of totals is required.

Ownership and support arrangements

The International Classification of Primary Care is copyright property of the World Organization of Family Doctors (Wonca). Wonca is the international incorporated association of national colleges, academies or organizations concerned with the academic aspects of general/family practice. Beginning with 18 members in 1972, there are now 90 member organizations in 75 countries. This includes eight organizations in collaborative relations with Wonca. The total membership of the member organizations of Wonca is over 160,000 general practitioners/family physicians.

ICPC is supported internationally by the Wonca International Classification Committee. Local support is given by two collaborating centres of Wonca. The Australian Centre is the Family Medicine Research Centre at the University of Sydney, a European Centre is

based in the Department of General Practice at the University of Amsterdam (formerly in collaboration with the University of Newcastle upon Tyne; new collaboration is currently being sought). Support is given in 23 countries by individual members of the WICC.

Update processes

ICPC is maintained and updated by the International Classification Committee (WICC) of Wonca. The full revision cycle is currently 11 years however mapping to other classifications may be reviewed at shorter intervals to adjust for changes in other classifications and changed usage. WICC has been active since 1972 and currently has 40 members from 23 different countries. WICC is partially funded by Wonca and the participation of some members is supported by their national governments.

Accessibility

ICPC is available in both written and electronic form. ICPC is available in book form from Oxford University Press (OUP) on a print on demand basis. Electronic versions are available from the OUP website for personal use. Commercial or National use requires a formal licence from Wonca. In the first instance the regional members of the WICC should be contacted for advice regarding licences.

Applicability of the classification

ICPC was designed for the collection and analysis of patient data and clinical activity in the domains of General/Family Practice and primary care. This collection and analysis can occur at the level of an individual patient for clinical care, at the practice level for recall, clinical audit and activity analysis and at the regional, State and National level for health services research and statistics. It can be used to classify terminologies and other classifications in electronic health records to facilitate decision support and patient safety systems.

Attribution and Authorization

This document was prepared and edited by Dr Graeme Miller (Australia) from material written by many past and present members of the Wonca International Classification Committee.

Authorised by Professor Niels Bentzen, Chair, on behalf of the Wonca International Classification Committee. Version date: 26th April 2004

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