

Implementation of
ENV 1828:1995

Medical informatics — Structure for classification and coding of surgical procedures

ICS 11.020; 35.240.60

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Committees responsible for this Draft for Development

This Draft for Development was entrusted to Technical Committee IST/35, Medical informatics, upon which the following bodies were represented:

- BCS Nursing Specialist Group
- British Computer Society
- British Computer Society (Health Informatics Specialist Groups)
- College of Radiologists (Clinical Oncology)
- Computing Services and Software Association
- Conference of Royal Colleges Information Group
- Department of Health
- Electro Medical Trade Association Limited
- Faculty of Public Health Medicine of the Royal College of Physicians in the UK
- Institute of Medical Laboratory Sciences
- Management Consultancies Association
- National Health Services
- NHS (Information Management Centre)
- Nine Tiles Computer Systems Ltd.
- Royal College of Surgeons of England
- Simpler Trade Procedures Board (SITPRO)
- Society for Computing & Technology in Anaesthesia
- Co-opted members

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National foreword

This Draft for Development has been prepared by Technical Committee IST/35, Medical informatics, and is the English language version of ENV 1828:1995 *Medical informatics — Structure for classification and coding of surgical procedures*, published by the European Committee for Standardization (CEN).

This Draft for Development is published under the direction of the Information Systems Technology Assembly whose Technical Committee IST/35 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

NOTE International and European Standards, as well as overseas standards, are available from Customer Services, BSI, 389 Chiswick High Road, London W4 4AL.

This Draft for Development is not to be regarded as a British Standard.

It is being issued in the Draft for Development series of publications and is of a provisional nature because the subject matter is still under development requiring wider exposure. It should be applied on this provisional basis so that information and experience of its practical application may be obtained.

Comments arising from the use of this Draft for Development are requested so that the UK experience can be reported to the European organization responsible for its conversion to a European Standard. A review of this publication will be initiated 2 years after its publication by the European organization so that a decision can be taken on its status at the end of its three-year life. The commencement of the review period will be notified by and announcement in *BSI News*.

According to the replies received by the end of the review period, the responsible BSI Committee will decide whether to support the conversion into a European Standard, to extend the life of the prestandard or to withdraw it. Comments should be sent in writing to the Secretary of BSI Technical Committee IST/35 at BSI, 389 Chiswick High Road, London, W4 4AL, giving the document reference and clause number and proposing, where possible, an appropriate revision of the text.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ENV title page, pages 2 to 26 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

English version

Medical informatics — Structure for classification and coding of surgical procedures

Medizinische Informatik — Struktur zur Klassifikation and Kodierung chirurgischer prozeduren

This European Prestandard (ENV) was approved by CEN on 1995-07-22 as a prospective standard for provisional application. The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard (EN).

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Prestandard has been prepared under mandate BC-IT-207A given to CEN by the European Commission and the European Free Trade Association and is being submitted for approval by CEN/TC251 “Medical Informatics” of which the secretariat is held by IBN.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Task description of Work Item 2.4

CEN/TC251 on Medical Informatics advanced Work Item 2.4 has the title:

“Terminology and coding system of medical procedures (PROCTERM)”

The “Directory of the European standardisation requirements for health care informatics and program for the development of standards” describes the task as follows:

“Development of the structure of a classification of medical procedures (surgical, laboratory, radiology and other imaging, etc.) to be used, for example, for communication, reimbursement, scientific work, productivity reviews, and retrieval.

The structure should be formalised into a model in harmony with the results of 2.12, when they become available.

The structure will contain a description of relevant types of characteristics, used as criteria for subdivision. A reference has to be made to descriptions of these types of characteristics (for example: anatomy). If descriptions are not available suggestions should be made.

The structure will refer to:

- general guidelines and directives
- syntax definition (format) of the coding system
- descriptions of all parts of the classification
- rules and notes related to entries
- additional types of characteristics”

It was recommended to start the development of the structure by working on surgical procedures (Work Item 2.4S) and laboratory procedures (Work Item 2.4L). Depending on the results, the work could be extended later into other fields of medical care, such as radiological and other health care procedures.

Membership of PT002S

Following advice from WG2 (Health care Terminology, Semantics and Knowledge Bases) Project Team PT002S (Surgery) was established for Work Item 2.4S with experts on coding systems from five European countries:

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Relation to other standardisation activities

Within WG2, PT002S maintained liaison with PT002L on Laboratory Procedures and PT003. The terminology used in this standard was harmonised with the vocabulary of PT003. As the results of PT003 were not available when the final report was produced PT002S created its own definitions which will be updated during the ENV process in line with the consolidated results from PT003.

Outside WG2, PT002S liaised with the medical terminology and coding work done by WG1, WG3 and WG7.

Within CEN, under BTS3, several TCs are working on Terminology (mainly TC257) and on medical equipment and instruments (TC285, TC215, TC205).

ISO 1087:1990 definitions were taken into account, as can be seen in the normative definitions section and in the particular definitions of PT002S.

Outside International Standard organisations there are several projects under the EEC Research and Development programs that concern semantics and coding systems (ESPRIT, RACE). The most recent developments are within the AIM programme (Advanced Informatics in Medicine). PT002S started by considering the results of the SESAME project in the AIM-Exploratory phase. The task of analysing semantic aspects has been continued by GALEN (General Architecture for Language Encyclopaedias and Nomenclatures in Medicine) the available results were considered by PT002S.

PT002S took into account the work on the Dutch and German Extensions of ICPM, the work of the NHS-CCC in the UK on the Read Codes and other European activities on classification: CDAM and THESAM (France), HCIMO and ICD-9-CM Volume III (Belgium), SNOMED (Germany), Nordic Short List of Operations (Denmark, Finland, Norway, Sweden) and the development of the Nordic Classification of Surgical Procedures.

The following products and developments outside Europe were taken into account:

- ICD-9-CM for the production of Diagnosis Related Groups (DRG's) in the U.S.A, South Korea and Taiwan.
- CPT-4 for physician fees reimbursement and ambulatory care case mix in the U.S.A.
- ICCS for quality assurance and utilisation review
- Development of a classification of medical procedures by WHO-AMRO (American region).
- Development of a classification of medical procedures by 3M Health Information Systems in the U.S.A.

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0 Introduction

0.1 Purpose

This European Pre standard provides a concept system to support the exchange of surgical procedure information between different national classifications and languages within Europe.

This Pre standard may be used by organisations developing or maintaining surgical procedure classifications and coding systems on a national or international level.

It is not the purpose of this Pre standard to standardise the end user classification or to conflict with the concept systems embedded in national practice and languages.

It is intended that classifications that employ this Pre standard will be based on computer.

The Pre standard itself is not suitable for, or intended for use by, the individual clinician or hospital administrator.

0.2 Discussion of the scope of the Pre standard

The project team initially tried to define a “surgical procedure” by considering archetypal examples, with a view to developing a definition and testing this on procedures that did not fit the archetype. It was recognised that any attempt at such a definition is likely to provoke much controversy. Since the standard — with or without modifications — should also be useful for other interventional medical procedures, it was decided that a precise definition of “surgical procedure” was unnecessary and the standard should be applicable to any interventional procedure.

The normative part of the standard deals only with clinical information that describes the surgical procedure itself. Concepts that concern the patient, the reasons for the procedure, the circumstances in which procedure is performed, or the operator, are listed in Annex B.

The Pre standard is not aimed at any specific classification goal. It can support the exchange of surgical procedure information regardless of the purpose for which the underlying classification has been developed.

The Pre standard has been developed for use as an integrated part of computer-based applications and will be of limited value for manual use.

0.3 Reasons prompting preparation of the Pre standard

Surgical procedures can be coded for a wide range of purposes, such as:

- part of a computerised medical record
- the basis of a discharge summary
- clinical research
- peer review
- quality assurance
- reimbursement
- workload assessment
- productivity reviews
- hospital resource management
- hospital utilisation comparisons
- public health management
- epidemiological surveys

For diagnoses the International Classification of Diseases (ICD) is an accepted international de facto standard. However there is no equivalent for medical procedures. This means that European countries use different procedure classifications, which hampers the exchange of health information.

Moreover within each European country incompatible procedure classifications are often used for different purposes, with the result that a procedure may need to be coded more than once.

A survey of existing procedure classifications and coding systems is presented in Annex C.

0.4 The structure

As stated by the IMIA Working Group on coding, during the conference in Ottawa in 1984, the long term goal must be to obtain from the different coding systems a unique computer based concept system. This should allow the user to express himself in his usual professional and national language but generate a standard terminology as output.

In the short term it is possible to begin by identifying the concepts underlying existing procedure classifications and also the natural language used in surgical reports.

The present Pre standard is the conceptual structure which contains the definition of a set of concepts and the internal relations that combine them in a concept system.

The explanation of the organisation of the structure is developed in Annex D.

0.5 Methods used to develop the Pre standard

An examination of existing coding systems (see Annex C) resulted in a first draft list of concepts. Those concepts that were concerned with the surgical procedure itself were defined and subsequently tested against texts of surgical reports and of existing procedure classifications. On the basis of the test results the list was revised. The aim was to define a small set of concepts which had the potential for describing a great variety of surgical procedure texts (second draft list).

Testing the concepts(second draft list) against surgical procedure texts led to the realisation that the representation as discrete concepts, without the relationship between them is often ambiguous. This problem was solved by recognising that a surgical procedure description must be represented by a conceptual structure where concepts are related by semantic links.

Details of the working method are provided in Annex E.

0.6 Further developments

This Pre standard is merely the first step (providing the conceptual structure) in the process of voluntary convergence of surgical procedure coding systems. The process could involve using the Pre standard to complement existing classifications in order to ease international comparison or as a basis for developing new ones. Either should allow the coherent mapping and comparison of clinical data.

The next steps are described in Annex F

0.7 Applications of the Pre standard

The normative application area of this Pre standard is the representation of surgical procedure statements by decomposition into terminological phrases complying to a reference concept system. This is to enable the international exchange of surgical procedure information between different national classifications and languages within Europe.

In addition the Pre standard can serve as an informative guideline when

- complementing existing coding systems with standard concepts
- analysing and comparing existing coding systems
- converting coded data from one system to another
- updating and maintaining existing systems.

The Pre standard can be used to develop new coding systems for surgical procedures, which may be multiaxial in nature or the more traditional, hierarchical ones.

The Pre standard can be used at different levels of complexity, according to the desired level of detail and the various documentation demands. Very detailed information representing the concepts conveyed in clinical language can be represented without serious loss of information.

Examples of representing expanded forms of surgical procedure statements are given in Annex G. In all cases care should be taken to ensure the preservation of nationally specific concept systems.

1 Scope

The purpose of this European pre standard is to identify the concepts within the text of surgical procedure notes and to structure them to represent the concepts, their internal relations and concept systems.

This pre standard is meant to be used by organisations involved with the development or maintenance of classifications and coding systems for medical procedures.