

## Supporting Standards

### Codes and Code Sets (including issues of maintenance)

#### ***World Health Organization (WHO)***

The WHO Collaborating Center for the Classification of Diseases for North America, located at the National Center for Health Statistics, is responsible for the coordination of all official disease classification activities in the United States relating to the ICD and its use, interpretation and periodic revision.

#### **ANSI Accreditation:**

The WHO Collaborating Center for North America is not an ANSI accredited body. The Collaborating Center is part of an international network of Collaborating Centers coordinated by the World Health Organization (WHO).

#### ***International Classification of Diseases, Ninth Revision (ICD-9)***

#### ***International Classification of Diseases, Tenth Revision (ICD-10)***

There are no separate templates for ICD-9 and ICD-10. On the following page, however, is a template developed by the National Center for Health Statistics (NCHS) for ICD-9 CM and ICD-10 CM.

#### ***National Center for Health Statistics (NCHS)***

*International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)*

*International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)*

*International Classification of Diseases Procedure Coding System (ICD-10-PCS)*

**Name of Standard: (1)** International Classification of Diseases (ICD); Ninth Revision, Clinical Modification (ICD-9-CM) currently in use for morbidity reporting.

#### **Contact For More Information**

Marjorie S. Greenberg

Ph: 301-436-4253 Ext. 107

Fax: 301-436-4233)

E-mail: MSG1@NCH11A.EM.CDC.GOV; or

Donna Pickett  
Ph: 301-436-7050 Ext.142  
Fax: 301-436 4233)  
E-mail: DFP4@NCH11A.EM.CDC.GOV

### ***Description of Standard***

The ICD-9-CM is the latest version of a classification that originated as the International List of Causes of Deaths, adopted in 1893 by the International Statistical Institute. The classification was revised at ten-yearly intervals and at the Sixth Revision Conference in 1948, the first undertaken by the WHO, its scope was extended to include non-fatal conditions and its use was recommended for morbidity statistics as well as for mortality. Subsequent revisions have enhanced its usefulness for morbidity applications by increasing the specificity of rubrics and by emphasizing manifestations of disease. Effective January 1979, the ICD-9-CM became the sole classification system used for morbidity reporting in the United States.

The ICD-9-CM, widely accepted and used in the health care industry, has been adopted by the federal government and the private sector for a number of purposes: data collection, quality of care analyses, resource utilization, research and reimbursement, and statistical reporting.

ICD-10-CM is currently under development, with a planned implementation date of October 1, 2000.

### ***Readiness of Standard:***

There are official coding guidelines used to instruct users on the classification. The ICD-9-CM classification and the guidelines are in the public domain and are available on CDROM from the Government Printing Office.

**Is it implementable?** (If so, is it fully or partially implementable?, explain)

The guidelines and classification are both in current use.

**How can the standard be obtained?**

The ICD-9-CM classification and the official national coding guidelines are in the public domain and are widely available. Both can be obtained through the Government Printing Office or through various publishers.

**Does it require a separate implementation guide?** (If so is the guide approved by the SDO?)

Not applicable

**Is there only one implementation guideline (or are there major options that impact compatibility)?**

Not applicable

**Is a conformance standard identified?**

Not applicable

**Are conformance test tools available?**

Not applicable

**Source of test tools?**

Not applicable

**If the standard is under development, what parts of it are ready now?**

Work on the clinical modification (CM) of the International Classification of Diseases and Related Health Problems (ICD-10) is currently underway; it will undergo review in the Department of Health and Human Services in 1997. The final version is scheduled to be available by October 1, 1998.

**What extensions are now under development?**

**What are the major milestones toward standards completion?**

**What are the projected dates for final balloting and/or implementation?**

The planned implementation of ICD-10-CM, in conjunction with the Health Care Financing Administration's Procedure Coding System (ICD-10-PCS), is tentatively scheduled for October 1, 2000.

**Please note any other indicators of readiness that may be appropriate.**

## ***Indicator of Market Acceptance***

Both the classification and guidelines for it are in wide use with thousands of copies being used nationally for the submission of health insurance claims and for statistical data collection, performance measures, research, etc.

**If the standard is an implementable standard, how many vendors, healthcare organizations and/or government agencies are using it?**

N/A

**Is this standard being used in other countries (which are they)?**

The ICD-9 is used internationally for cause of death tabulation. The ICD-9-CM, the morbidity version of the ICD-9, is used in the United States primarily, but Australia and Israel use the ICD-9-CM for morbidity. These countries will be implementing the ICD-10 for both morbidity and mortality prior to the United States.

**Please note any other relevant indicator of market acceptance within the public or private sector.**

Many private vendors produce a variety of software and book products based on the ICD-9-CM.

## ***Level of Specificity***

**If your standard is a guideline, how detailed is it?**

The guidelines for the ICD-9-CM are broad guidelines for coding. They are not teaching manuals.

**If it is an implementable standard, describe how detailed its framework is and its level of granularity.**

N/A

**Does the standard(s) reference or assume other standards to achieve more specificity?**

N/A

**If it includes or assumes code sets, which ones are they?**

The ICD-9-CM is code set.

**What is the description of the code set?**

A medical statistical classification

**How is the code set acquired?**

The ICD-9-CM classification and the official national coding guidelines are in the public domain and are widely available. Both can be obtained through the Government Printing Office or through various publishers.

**Is there a users' guide or some other assistance available on the code set?**

WHO published an official rule book for mortality rules. The U.S. publishes official guidelines for the use of the ICD-9-CM for morbidity applications.

**If the code set is currently in use, what is the extent of its use (e.g., approximate number of users)?**

All health care claims must list the ICD-9-CM diagnosis code.

**If the code set is under development, what are the projected dates of completion and implementation?**

N/A

**Relationships with other standards**

Volume 3 of ICD-9-CM is the classification of procedures used in the inpatient setting. CPT is used by physicians and hospital-based outpatient departments for the coding of procedures. The Health Care Financing Administration is developing ICD-10-PCS to replace Volume 3.

**Identify specific standards reconciliation or coordination activities.**

NCHS serves as the North American Collaborating Center for the Classification of Diseases (ICD) and for the International Classification of Impairments, Disabilities, and Handicaps (ICIDH). NCHS is responsible for the coordination of all official disease classification activities in the United States relating to the ICD and its use, interpretation and periodic revision. [See also III (A)].

The ICD-9-CM Coordination and Maintenance Committee is the process by which the classification (Volumes 1, 2, and 3) is maintained and updated each year. The Coordination and Maintenance process ensures stability of the classification system and its comparability with its parent system, ICD-9. Established in 1985, this Committee was formed to provide a public forum to discuss possible updates and revisions to the ICD-9-CM.

**What portion of the specification and functionality is affected by this coordination?**

N/A

**What conditions are assumed in order for this coordination to be effective?**

All requests for modification are handled through the ICD-9-CM Coordination and Maintenance Committee. The Committee discusses such topics as the need to update the ICD-9-CM due to changes in medical technology, the need to provide greater specificity in classifying diagnoses (adding clinical detail and accuracy), and the need to correct inaccuracies in the classification. No official changes are made without being brought before this committee.

Although the Committee is a federal committee, suggestions for modifications come from both the public and private sectors, and interested parties are asked to submit recommendations for modification prior to a scheduled meeting.

Modifications are not considered without the expert advice of clinicians, epidemiologists, and nosologists (both public and private sectors).

**Is this standard consistent with international standards? If so, which standards?**

Yes. The ICD-9-CM is consistent with ICD-9, and ICD-10-CM similarly will be consistent with ICD-10.

**What gaps remain among related standards that should be addressed?**

Describe what is being done to address these gaps.

## ***Identifiable Costs***

Notes: ICD-10-CM

- Please indicate the cost or your best estimate for the following:
  - Cost of licensure: None, the classification is in the public domain
  - Cost of acquisition (if different from licensure)
  - Cost/timeframes for education and training/implementation

A two-year timeframe is planned to allow for training and system modifications and software development for the transition to ICD-10-CM.

- Please note any other cost considerations.

## **American Medical Association (AMA)**

### ***Physicians' Current Procedural Terminology (CPT)***

Physicians' Current Procedural Terminology , Fourth Edition (CPT) is a listing of descriptive terms and identifying codes for reporting medical services and procedures. The purpose of the terminology is to provide a uniform languages that will accurately describe medical, surgical and diagnostic services, and will thereby provide an effective means for reliable nationwide communication among health professionals, patients and third-parties. The first edition of CPT appeared in 1966.

### ***Developing Organization***

CPT was created and is authored by the American Medical Association (AMA).

### **ANSI Accreditation:**

The AMA is a member of ANSI. CPT is copyrighted by the AMA.

### ***Names***

Physicians' Current Procedural Terminology, Fourth Edition (CPT)

### ***Description***

CPT contains the American Medical Association's listing of descriptive terms and identifying codes. It also contains numeric modifiers, notes, guidelines and an index designed to provide explanatory information and facilitate the correct usage of the coding system.

### **Contact For More Information:**

Celeste G. Kirschner  
Director, Coding and Nomenclature  
American Medical Association  
515 N. State Street  
Chicago, IL 60610  
Phone: 312-464-5932  
Fax: 312-464-5849

### ***Indicator of Market Acceptance***

CPT is used as the reporting mechanism by physicians and many other health professionals in the United States. It is the coding system used by Medicare and virtually all third party payors, including workers compensation and Medicaid. Hospitals use CPT codes to report outpatient service to Medicare. Its usage internationally is growing, particularly by United States companies that have international components. CPT was recently selected as the coding system of choice by the Medical Association of South Africa. CPT is Level I of HCPCS (HCFA Common Procedure Coding System).

### ***Level of Specificity***

CPT contains over 7300 codes to describe medical and surgical procedures. CPT is divided into 6 major sections, including Evaluation and Management Services, Anesthesia, Surgery, Radiology,

Pathology and Medicine. The section heads, subheads, and titles provide an implicit hierarchy. The Surgery section is subdivided anatomically. The Medicine Section is divided by medical subspecialties. A series of two digit modifiers are also included to make the coding system more specific, to allow the reporting of a procedure under specific circumstances. For example, modifiers may be used to describe the use of assistant surgeons, a bilateral procedure, or a return to the operating room during the postoperative period.

### ***Maintenance of CPT***

CPT is authored by the American Medical Association. The CPT Editorial Panel is made up of 15 physicians, 10 nominated by the AMA and one each nominated by the Blue Cross and Blue Shield Association, the Health Insurance Association of America, the Health Care Financing Administration and the American Hospital Association. A non-physician representative of the Health Care Professionals Advisory Committee (HCPAC) also serves as a member of the Panel.

The Panel's Executive Committee includes the chairman, the vice chairman and three other members of the Panel, as elected by the entire Panel. One of the three members-at-large of the executive committee must be a third-party payer representative. The AMA provides staff support for the CPT Editorial Panel and appoints a staff secretary. Supporting the Editorial Panel in its work is the CPT Advisory Committee. Committee members are primarily physicians nominated by the national medical specialty societies represented in the AMA House of Delegates. The Health Care Professional Advisory Committee allows for participation of organizations representing limited license practitioners and allied health professionals. Most members of the Advisory Committee serve as Chair of a specialty society committee and thus form a network of approximately 1000 physicians and other health professionals actively working to maintain the clinical integrity of the system.

### ***Readiness***

Current Procedural Terminology (CPT) is available in the following print and electronic formats:

- 1 volume spiral-bound edition;
- 1 volume soft bound edition;
- 1 volume spiral-bound Professional edition;
- 1 volume three-ring bound Professional edition

Electronic versions in EBCDIC or ASCII for full and short description magnetic tape formats; also available in diskette format, short or long description which can be used with any software that allows import of an ASCII file. A CD-ROM version, that includes CPT, is available for 1997.

In addition, CPT is currently licensed to many software system vendors and publishing companies.

### ***Identifiable Costs***

CPT is available at low cost through the AMA or through the AMA's licensing activities. CPT can be purchased from the AMA in print formats for as low as \$38. CPT can be licensed from the AMA in electronic formats for as low as \$149. Licenses are granted to those that distribute CPT in print and electronic formats. Licenses for CPT in print products are granted for as low as \$10 per product. Licenses for CPT in electronic products are granted for \$50 per product license with a minimal additional user fee for multi-user versions. The codes are revised yearly.

## **College of American Pathologists Systematized Nomenclature of Human and Veterinary Medicine (SNOMED) International**

**SNOMED® International** is recognized throughout the world as a comprehensive, multiaxial nomenclature classification system created for the indexing of the entire medical vocabulary, including symptoms, diagnoses, and procedures. Its design provides the framework for representing the activities, observations, and diagnoses found in the medical record and coding them into a computer-processable form. The structure of SNOMED® International, together with its ability to index and retrieve comprehensive patient information, makes this system a strong candidate for the standard vocabulary and data model that is essential for the computer-based patient record.

### ***Developing Organization***

SNOMED® International is owned and managed by the College of American Pathologists (CAP). The CAP is a national medical specialty society serving more than 15,000 physician members and the laboratory community in the United States and internationally. College fellows elect a 12-member Board of Governors and three officers who serve as the governing body. Supporting the Board of Governors are a hierarchy of Councils, Commissions and Committees. These groups develop and oversee College and projects and programs. Administrative support and overall coordination and implementation of College programs is provided by staff located at the CAP Headquarters office in Northfield, Illinois.

The Council on Practice and Education is responsible for the operation of several CAP committees including the SNOMED® Editorial Board (SEB). Through the work of the SNOMED® Editorial Board chaired by College member, Roger A. Cote, MD, new terms and codes are continuously added to the SNOMED® vocabulary, with at least two updates provided annually. Via relationships with other medical specialty societies, the SEB is responsible for the design, development and maintenance of the SNOMED® vocabulary.

### **ANSI Accreditation:**

SNOMED® International is not a standard. It is a registered trademark owned and copyrighted by the College of American Pathologists. As an organization, the CAP is not directly involved in standards development.

### ***Name:***

SNOMED® International

### **Contact For More Information:**

Karen Kudla  
SNOMED Program Manager  
College of American Pathologists  
325 Waukegan Road  
Northfield, IL 60093  
Phone: 847-832-7446  
Fax: 847-832-8170  
E-Mail: [kkudla@cap.org](mailto:kkudla@cap.org)

## **Description**

SNOMED® International is a comprehensive, multiaxial nomenclature classification system created for the indexing of the entire medical vocabulary, including signs and symptoms, diagnoses, and procedures. Introduced in September 1993 and traceable to its roots in the early 1960s as the Systematized Nomenclature of Pathology (SNOP), SNOMED® is being rapidly accepted worldwide as the standard for indexing medical record information. It has been translated from English into 12 other languages. The American Veterinary Medical Association and the American Dental Association have recognized SNOMED®'s strength as a comprehensive nomenclature and have endorsed its use. In addition, the American College of Radiology/National Equipment Manufacturers Association will be using a subset of SNOMED® in their Digital Imaging and Communications in Medicine standard (DICOM).

Of the major factors required for successful computer-based patient record development, a common medical vocabulary for use in records and standards for integrating multiple and disparate sources of information are critical elements. The eleven modules of the current version of SNOMED® contain more than 144,000 terms and term codes, with new updates provided to SNOMED® users at least twice per year. Many electronic records proponents are concluding that SNOMED® International offers the best prospects for a standardized vocabulary.

## **Readiness**

SNOMED® International is available in the following print and electronic formats: four-volume hard-bound printed set electronic version on CD-ROM in a tab-delimited ASCII format

In addition, the following information systems vendors are licensed to distribute SNOMED® International:

ACT Medisys  
ANATROL  
Antrim Corporation  
Cerner Corporation  
Citation Computer Systems  
Collaborative Medical Systems  
Computer Trust Corp.  
Dentente Corporation  
Dynacor Inc.  
Dynamic Healthcare Tech, Inc.  
Galen Group, Ltd.  
Health Data Science Corp.  
Healthpoint GP  
Kaiser Permanente  
Laboratory Consulting, Inc.  
MedicaLogic  
Orbis Systems  
Psyche Systems  
Science Applications Int'l Corp.  
Sunquest Information Systems  
Univ. Of Alabama at Birmingham

## ***Indicator of Market Acceptance***

SNOMED® International is widely used and distributed throughout the United States and worldwide. SNOMED® International was ranked on top in a study conducted by the Computer-based Patient Record Institute (CPRI) which evaluated all available coding systems for their ability to be used as a common medical terminology.

SNOMED® International has been translated into Greek, Chinese, Czech, French, German, Hungarian, Italian, Japanese, Norwegian, Portuguese, Russian, Slovakian, and Spanish. The American Veterinary Medical Association and the American Dental Association have recognized SNOMED®'s strength as a comprehensive nomenclature and have endorsed its use. In addition, the American College of Radiology/National Equipment Manufacturers Association will be using a subset of SNOMED® in their Digital Imaging and Communications in Medicine standard (DICOM).

## ***Level of Specificity***

SNOMED® International is a detailed coded nomenclature and classification of preferred medical terms and concepts, consisting of more than 144,000 terms and term codes divided into eleven linked hierarchical modules: Topography; Morphology; Function; Living Organisms; Chemicals, Drugs, and Biological Products; Physical Agents, Activities and Forces; Social Context; Diseases/Diagnoses; Procedures; and general Linkage Modifiers

## ***Identifiable Costs***

SNOMED® International is available to individuals for a single fee. In addition, licenses are granted to distribute SNOMED® International for commercial or institutional use. Licensing fees are determined by the number of users per site, and are renewed annually

## ***American Dental Association (ADA)***

### ***Current Dental Terminology (CDT)***

The ADA's Current Dental Terminology (CDT) is a manual that is intended to be of practical use to those in dental offices who deal with patients' dental plans, by providing assistance in accurately reporting dental treatment and procedures to third-party payers. The document used for reporting treatment is the American Dental Association's Code on Dental Procedures and Nomenclature which is contained in the CDT. The Code is structured so that it can be used by dentists and/or their staff to report care provided to patients. Within CDT, many code numbers are accompanied by additional information or explanations to help clarify how the codes should be applied.

## ***Developing Organization***

CDT is maintained by the American Dental Association through its Council on Dental Benefit Programs.

## **ANSI Accreditation:**

CDT is not a standard. It is a copyrighted document of the American Dental Association. However, as an organization, the ADA is directly involved in standards development as sponsor and secretariat of the ASC MD156.

### ***Name***

Current Dental Terminology (CDT)

### **Contact For More Information:**

Thomas Conway  
American Dental Association  
211 East Chicago Avenue  
Chicago, Illinois 60611  
Phone: 312/440-2752  
Fax: 312/440-2520  
E-mail: conwayt@ada.org

### ***Description***

The CDT contains the American Dental Association's codes for dental procedures and nomenclature and is the nationally accepted set of numeric codes and descriptive terms for reporting dental treatments. CDT also contains a description of the ADA Dental Claim Form; clinical and dental benefit terminology; and a description of the tooth numbering system.

### ***Readiness***

CDT is available in the following print and electronic formats:  
1 volume spiral bound manual;

Electronic version in MS DOS diskette, an ASCII file, and a database program. Must have IBM compatible computer with at least 512K RAM.

In addition, CDT is currently licensed to many practice management software systems vendors.

### ***Indicator of Market Acceptance***

CDT is used as a reporting tool by all practicing dentists in the United States. It is also used by third-party payers for claims processing. The ADA's procedure codes are also included in the HCFA Procedural Coding System (HCPCS) as the dental (D) codes.

### ***Level of Specificity***

CDT includes the ADA's Code on Dental Procedures and Nomenclature consisting of over 400 distinct dental procedures. The codes and nomenclature have been divided into 12 categories of service: Diagnostic, Preventive, Restorative, Endodontics, Periodontics, Prosthodontics; removable,

Maxillofacial Prosthetics, Implant Services, Prosthodontics;fixed, Oral Surgery, Orthodontics, and Adjunctive General Services.

### ***Identifiable Costs***

CDT is available to individuals for \$29.95. Licenses are granted for \$500 for a five year period to those that distribute CDT in software systems, continuing education programs and other products. The codes are revised on a five-year cycle.

## ***Advisory Committee on Dental Electronic Nomenclature Indexing and Classification (ACODENIC)***

### ***Microglossary of SNOMED for Dentistry***

The American Dental Association established this advisory committee to develop standardized clinical terminology for the dental profession in an electronic environment. All segments of the health care process must be addressed, such as patient history, presenting conditions, physical findings, services, risk factors, outcomes, or other important details. In addition, all facets of health care, independent of profession, discipline or specialty must be included in standardized terminology. Therefore, the Advisory Committee has engaged in the difficult task of creating a clinical terminology and coding system which will provide the dental profession with varying degrees of utility.

In order to accomplish this charge, the American Dental Association recognized the strength of the SNOMED International system and began working with the College of American Pathologists on the development of a microglossary of SNOMED for dentistry. The ADA's Microglossary is currently in development and is expected to be completed in 1997. The ADA is participating with a sample of terms from the Microglossary in the Large Scale Vocabulary Test conducted by the National Library of Medicine (NLM). The proposed dental terms are being tested against the NLM's Unified Medical Language System (UMLS). The goal of the NLM Large Scale Vocabulary Test is to contribute to an understanding of the controlled terminology that will be needed for electronic health care systems, whether these are for direct patient care, clinical or health services research, or public health surveillance. The Test seeks to determine the extent to which a combination of existing health-related terminologies cover vocabulary needed in health information systems. The terminology that the participants submit to should provide the basis for realistic resource estimates for developing and maintaining a comprehensive "standard" health vocabulary that is based on existing terminologies. In addition, the ADA's dental terms were recently used to update the dental terminology for the NLM's 1997 Medical Subject Headings (MeSH). MeSH is the vocabulary used to index articles in the National Library of Medicine's MEDLINE database and its derivative publications, including *Index Medicus* and the American Dental Association's *Index to Dental Literature*.

The ADA's procedure codes will also be mapped to the SNOMED terms in the Dental Microglossary. **Comprehensive Glossary of Dental Terms** - Standardized terminology must have explicit definitions. A collective guide is important for consistent interpretation of terms by the profession and aggregate data analysts. Therefore, the American Dental Association's ACODENIC is also developing a comprehensive glossary of dental terms. In addition to defining the terms in the Microglossary, the definitions will be useful for the NLM's MeSH and UMLS knowledge sources.

## **Center for Nursing Classification, University of Iowa College of Nursing**

### **Nursing Interventions Classification (NIC)**

The **Nursing Interventions Classification (NIC)** is a comprehensive, standardized language describing treatments that nurses perform in all settings and in all specialties. NIC interventions include both the physiological (e.g. Acid-Base Management) and the psychosocial (e.g. Anxiety Reduction). There are interventions for illness treatment (e.g. Hyperglycemia Management), illness prevention (e.g. Fall Prevention), and health promotion (e.g. Exercise Promotion). Interventions are for individuals or for families (e.g. Family Integrity Promotion). Indirect care interventions (e.g. Emergency Cart Checking) and some interventions for communities (e.g. Environmental Management: Community) are also included.

Each NIC intervention has a unique number which can facilitate computerization. NIC interventions have been linked with NANDA nursing diagnoses and the Omaha System problems and are in the process of being linked with Nursing Outcomes Classification (NOC) patient outcomes. There is a form and a review system for submitting suggestions for new or modified interventions.

### **Developing Organization**

The classification work is part of the Center for Nursing Classification at the University of Iowa College of Nursing. Research methods used to develop the Classification include content analysis, expert survey, focus group review, similarity analysis, hierarchical cluster analysis, multidimensional scaling, and field testing. More than 40 national nursing organizations have reviewed NIC and assisted with intervention development and validation and taxonomy construction and validation. The research, conducted by a large team of investigators, has been partially supported for the past seven years by the National Institute of Nursing Research, National Institutes of Health.

### **ANSI Accreditation:**

NIC is not a standard. It is a standardized language organized in a 3 level taxonomic structure for ease of use. It is published by Mosby Year Book who owns the copyright. Neither the University of Iowa which produces NIC nor Mosby is involved in the development of standards.

### **Name**

Nursing Interventions Classification (NIC)

**Contact For More Information:**

William Donahue, Program Associate  
Center for Nursing Classification  
College of Nursing  
The University of Iowa  
Iowa City, IA 52240  
Phone: 319-335-7054/7051  
Fax: 319-335-7051  
E-mail: william-donahue@uiowa.edu  
OR classification-center@uiowa.edu

***Description***

NIC contains 433 interventions each with a definition and a detailed set of activities that describe what it is a nurse does to implement the intervention. Each intervention is coded with a unique number. The interventions are organized in 26 classes and 7 domains. NIC facilitates the implementation of a Nursing Minimum Data Set. The use of NIC to plan and document care will facilitate the collection of large data bases which will allow us to study the effectiveness and cost of nursing treatments. The use of standardized language provides for the continuity of care and enhances communication among nurses and among nurses and other providers. NIC provides nursing with the treatment language that is essential for the computerized health care record. The domains and classes provide a description of the essence of nursing. NIC is helpful in representing nursing to the public and in socializing students to the profession. The coded interventions can be used in documentation and in reimbursement. The language is comprehensive and can be used by nurses in all settings and in all specialties.

***Readiness***

NIC is available in the following print publication: Iowa Intervention Project (1996). Nursing Interventions Classification (NIC), 2nd ed. St. Louis: Mosby Year Book.

The following vendors are licensed to distribute NIC:

- ERGO, Mission, Kansas, 319: 384-3377.
- JRS Clinical Technology, Stamford, CT, 203:322-1823.

In addition, there are numerous journal publications about NIC that detail aspects of development or use. An anthology of NIC publications and an implementation manual containing helpful guides and forms related to implementation from selected user agencies are available from the Center for Nursing Classification.

***Indicator of Market Acceptance***

NIC is recognized by the American Nurses' Association and is included in the National Library of Medicine's Metathesaurus for a Unified Medical Language. Both the Cumulative Index to Nursing Literature(CINAHL) and Silver Platter have added NIC to their nursing indexes. NIC is included in the Joint Commission on Accreditation for Health Care Organization's (JCAHO) as one nursing classification system that can be used to meet the standard on uniform data. The National League for Nursing has made a 40 minute video about NIC to facilitate teaching of NIC to nursing students and practicing nurses. Many health care agencies are adopting NIC for use in standards, care plans, and nursing information systems; nursing education programs are beginning to use NIC; authors of major

texts are beginning to use NIC to discuss nursing treatments; and researchers are using NIC to study the effectiveness of nursing care. Interest in NIC has been demonstrated in several other countries, notably, Canada, Denmark, Iceland, Japan, Korea, Switzerland, and The Netherlands.

### ***Level of Specificity***

NIC groups approximately 13,000 nurse activities into 433 standardized intervention terms each with a unique code. NIC has numerous uses including in care planning, documentation, standards construction, critical paths, competency evaluation, job descriptions, curriculum and course syllabus construction. The use of NIC in nursing information systems allows for the collection of standardized data to be used in effectiveness research and in determining the costs of nursing.

### ***Identifiable Costs***

NIC is available in book form to individuals for a single fee, which in January 1997 was \$35.95. In addition, licenses are granted to distribute NIC for commercial or institutional use by contacting Robin Carter at Mosby Year Book, 800:325-4177, ext. 4412 (robin.carter@mosby.com) Licensing fees are determined by the number of users per site and are renewed with each new edition of the book (approximately every 4 years). Permission to use NIC in printed material can be obtained by contacting Liz Fathman at Mosby Year Book, 800:325-4177, ext. 4866 (liz.fathman@mosby.com).

### ***International Conference on Harmonization***

Representation includes:

Food and Drug Administration

European Union

Japan's Ministry of Health and Welfare

PhRMA (Pharmaceutical Research and Manufacturers of America)

JPMA (Japanese Pharmaceutical Manufacturers Association)

EFPIA (European Federation of Pharmaceutical Industries Association)

### ***ANSI Accreditation***

Not ANSI Accredited

### ***International Medical Terminology (IMT)***

#### **Contact For More Information:**

Kathryn A. Huntley

Standardized Nomenclature Program Manager

Food and Drug Administration

HF-21 Rm 16B-45

5600 Fishers Lane

Rockville, MD 20857

Voice mail: (301) 594-6491

Fax: (301) 594-0829

E-mail: khuntley@bangate.fda.gov

## **Description of Standard**

The International Medical Terminology (IMT) is a medical terminology designed to support the classification, retrieval, presentation, and communication of medical information throughout the medical product regulatory cycle. The foundation of the IMT is the Medical Dictionary for Drug Regulatory Affairs (MEDDRA) developed by the UK Medicines Control Agency (MCA) in its Adverse Drug Reactions On-line Information Tracking System (ADROIT).

The IMT is superior to other medical terminologies in its scope, size, and specificity. Included in the IMT are terms describing diseases, diagnoses, signs, symptoms, therapeutic indication names, and qualitative results of investigations (e.g. laboratory tests, radiological studies), medical and surgical procedures, and terms describing medical, social, and family history. The IMT consists of a five level hierarchy, starting with 26 System Organ Classes (SOCs), that represent the highest level groupings of the terminology. Including all levels it contains approximately 40,000 terms. The Preferred term (PT) is the internationally agreed upon level at which regulatory information is to be exchanged. The IMT contains approximately 8,800 PTs, vastly improving the specificity of exchanged regulatory information over previous thesauri.

The current version of the IMT is available in multiple formats:

- ASCII text files
- Access Database
- On the FDA's Standardized Nomenclatures Database (SND)
- The thesaurus is also available in paper format.

## **Readiness of Standard**

- A) This is not a guideline
- B) The implementable version will be a combination of products, the terminology and a maintenance organization. The terminology will be completed March 1997 the maintenance organization will be operational December 1997.
- C) The 1.5 version of the terminology is obtainable through the FDA at no cost. The final version will be available through the maintenance organization.
- D) There will be a user manual, help desk support etc. through the maintenance organization.
- E) There will be a single version, multiple translations i.e. Japanese, Spanish, French and German to begin.
- F) No
- G) No.
- H) None
- I) The 1.5 version of the terminology is available for review. The FDA has rewritten 8 of the 26 System Organ Classes. The structure of terminology will not change just the terms populating the various levels below the System Organ Class level.
- J) The final review of the US proposals, and the review and repopulation of the mid-levels to aid in data aggregation and display as well as the assignment of codes.
- AA) ICH Expert Working Group meeting the first week of January 1997, the presentation to the ICH Steering Committee the first week of March 1997.
- BB) ICH Steering Committee meeting March 1997, Selection of the Maintenance Organization July 1997, Terminology available December 1997
- CC) None

## ***Indicator of Market Acceptance***

- A) 308 copies of Version 1.0 and 386 copies of Version 1.5 have been distributed in North America to date. There are also distribution points in Japan and Europe.
- B) none currently
- C) A closely related product is currently being used in the ADROIT system of the UK's Medicines Control Agency.
- D) The development of this standard under the ICH umbrella is very important in that once agreed upon by the regulators they are committed to implementing it. That means the regulatory authorities of Europe, United states and Japan will implement therefore the industries in those regions will also implement it. It is being reviewed by the World Health Organization for use by WHO countries and also by the WHO Drug Monitoring Program in Upsala Sweden.

Within the US, the National Cancer Institute's Cancer Therapy Evaluation Program *is planning to* adopt this terminology for use in collecting cancer clinical trial data.

## ***Level of Specificity***

- A) The IMT is not a guideline.
- B) The IMT's hierarchy consists of five levels and was designed to facilitate both coding and retrieval of medical information. These levels include System Organ Class (SOC), the broadest term; High Level Group Term (HLGT); High Level Term (HLT); Preferred Term (PT); and Lowest Level Term (LLT). Concepts in the vocabulary are grouped based upon inclusive relationships. The hierarchy can be used to locate concepts at a desired degree of specificity.

The following is a description of the IMT hierarchical levels from the most specific, or granular, to the broadest.

**LLT** - The Lowest Level Terms provide the most specific terms in the vocabulary. The LLTs are not used for reporting, but help define the scope of the preferred term to which they are linked, and provide a collection of terms used in verbatim reports to describe adverse experiences or medical history. In the IMT, the LLTs contain both synonyms and quasi-synonyms. In a strictly controlled thesaurus, the finest division of vocabulary consists only of synonyms and lexical variants (spelling and word order variations). In practical medical coding vocabularies, however, this rule is not rigorously enforceable. Terms that have similar meanings, or which describe similar concepts, are often grouped under the same preferred term.

**PT** - The preferred term is the internationally agreed upon level at which regulatory information is to be exchanged. The PT represents a single, unambiguous, clinical concept. Terms at this level should be at a level of specificity to code regulated indications and to capture signals of specific significant adverse events. The LLTs under each PT indicate the intended scope of the term. A PT may be linked to one or more SOCs, but is assigned to only one Primary SOC under which it is grouped for cumulative data outputs to prevent duplicate counting.

**HLT** - A High Level Term groups together PTs which are related by anatomy, pathology, physiology, etiology or function for data retrieval and presentation purposes only. An HLT may be linked to one or more HLGT(s) or SOC(s).

**HLGT** - High Level Group Terms, like the HLTs, are broad concepts used for grouping clinically related terms for data retrieval and presentation. They may be linked to one or more SOC(s).

**SOC** - The System Organ Class represents the broadest collection of concepts for retrieval in the vocabulary. SOC's group concepts according to anatomical or physiological system, e.g. Gastrointestinal disorders; body organ, e.g. Disorders of the eye; mechanism, e.g. Infections and infestations; and purposes, e.g. Surgical and medical procedures.

It does not reference other standards.

FDA recommendation for the IMT coding scheme (this is only a recommendation and has not been finalized):

- IMT use a sequential numbering (non-expressive, numeric code) method with a length of at least 8 for the terminology coding scheme.
- Unique codes be applied to all terms across all categories.
- After term changes to MEDDRA Version 1.5 are complete, a numeric code be applied to terms sequentially by alphabetical order as the last step in the development process for the IMT.
- Use 10000001 as the first code applied to the first term sorted alphabetically in order to enforce a length of 8.

User Guide to be developed.

Schedule for IMT Implementation:

- ICH approval - 3/97
- Wide Availability - 12/97

## ***Relationships with Other Standards***

Terms from other commonly used medical thesauri have also been added to the IMT to make the transition from these other vocabularies to the IMT easier. These include the Food and Drug Administration Coding Symbols for a Thesaurus of Adverse Reaction Terms (COSTART), the World Health Organizations Adverse Reaction Terminology (WHO-ART), the International Classification of Diseases, version 9, Clinical Modifications (ICD-9-CM), the Japanese Adverse Reaction Thesaurus (JART), and the Hoechst Adverse Reaction Terminology (HARTS).

There are some medical concepts that are not included in the IMT. The following areas are considered outside the scope of this regulatory terminology:

- Drug product terminology (i.e., complete listing of drug names);
- Equipment, device or diagnostic product terminology (i.e., complete listing of medical devices, diagnostic equipment or in vitro diagnostic products);
- Device failure terminology;
- Clinical trial study design terminology;
- Patient demographic terminology;
- Qualifiers that refer to populations rather than individual patient results (e.g., rare, frequent);
- Numerical values associated with investigations or observations (e.g., numeric laboratory test results)
- Descriptors of severity (e.g., severity, mild).

## ***Identifiable Costs***

Cost of licensure is yet undetermined but the goal is to make the internationally maintained terminology as inexpensive and readily available as possible. In all regions consideration must be given to the developing nations under WHO as well as the start up and specialty industries throughout the world.

## ***Health Care Claim Adjustment Reason Code/Health Care Claim Status Code Committee***

### **ANSI Accreditation:**

Health Care Claim Adjustment Reason Codes and Health Care Claim Status Codes are considered external codes by ANSI ASC X12, and the Committee is not an SDO. The committee was formed in 1994 by industry representatives to X12, to create a mechanism for management of the codes used for the enumerated transactions.

### ***Health Care Claim Adjustment Reason Codes***

A series of standard alphanumeric codes, and messages, that detail the reason why the payer made and adjustment to the health care claim payment. These codes are used in the ANSI ASC X12 Claim (837) and Payment/Advice (835) transaction sets, and in the UB92 and NSF flat file claim and associated payment transactions.

### ***Developing Organization***

These codes are developed and maintained by the Health Care Claim Adjustment Reason Code/Claim Status Code Committee. This committee is comprised of one voting member from the following groups:

- American Dental Association
- American Hospital Association
- American Medical Association
- Blue Shield Plans
- Blue Cross Plans
- Commercial Health Insurance Carriers
- Health Care Financing Administration - Medicaid
- Health Care Financing Administration - Medicare
- Health Insurance Association of America
- National Council for Prescription Drug Programs
- Property and Casualty Insurance Industry
- American Association of Health Plans
- Association For Electronic Healthcare Transactions (AFHECT)
- One X12N workgroup co-chair from each affected workgroup (835, 837, 276/277)

The committee is responsible for maintaining the quality and business applicability of the code lists for an electronic data interchange environment. It's objective is to meet the business needs of the user community while eliminating redundancy in the codes. The Blue Cross and Blue Shield Association serves as Secretariat for the committee.

**Contact for more information:**

Frank Pokorny  
Manager, Electronic Commerce and National Standards  
Blue Cross and Blue Shield Association  
676 North St. Clair  
Chicago, IL 60611  
Phone: 312-330-6223  
Fax: 312-440-5674  
E-mail: us993fjp@ibmmail.com

***Description***

A series of approximately 175 standard numeric and alphanumeric codes, and messages, that detail the reason why the payer made and adjustment to the health care claim payment. An individual code may be up to three characters long. A set of that apply equally to services, products, drugs and equipment. Codes for Medicare A have the letter "A" in the first position; Medicare B show the letter "B".

***Readiness***

Codes are currently in use and revisions are made thrice annually, effective on February 28, June 30 and October 31 of each year. The most recent version of the code list will be able to be applied to all versions of the ASC X12 Draft Standards, except as limited within the code lists. Health Care Claim Adjustment Reason Codes and the Health Care Claim Status Codes are available in electronic and print formats:

Electronic file -  
Washington Publishing Company World Wide Web Site  
<http://www.wpc-edi.com>  
Paper Copy -  
Blue Cross and Blue Shield Association  
Inter-Plan Teleprocessing Service  
676 North St. Clair  
Chicago, IL 60611

***Indicator of Market Acceptance***

Health Care Claim Adjustment Reason Code is currently in wide use within the health care community for both EDI and flat file transactions, and for both private/commercial and government programs. Codes are developed and agreed upon by committee action

***Level of Specificity***

A set of approximately 175 numeric and alphanumeric codes that apply equally to services, products, drugs and equipment. Codes for Medicare A have the letter "A" in the first position; Medicare B show the letter "B". Codes are available on lists in simple ascending order, and by functional groups: treatment; insurance procedural; insurance contractual; other.

## ***Identifiable Costs***

Code lists are available at no charge from either the Washington Publishing Web Site or the Blue Cross and Blue Shield Association.

## ***Health Care Claim Status Codes***

A series of standard alphanumeric codes, and messages, that detail the status of a claim that has been submitted for payment. These codes are used in the ANSI ASC X12 Claim Status Response (277) and Payment/Advice (835) transaction sets, and in the flat file transactions associated with the UB92 and NSF formats.

### ***Description***

A composite data element comprised of the following alphanumeric and numeric data elements:

- Health Care Claim Status Category Code -- Mandatory
- Health Care Claim Status Code -- Mandatory
- Entity Identifier Code -- Optional - Used when an entity is associated with the Health Care Claim Status Code

An individual code may be up to seven (7) characters long.

### ***Readiness***

Health Care Claim Adjustment Reason Code and Health Care Claim Status Codes are available in electronic and print formats:

Electronic file -

Washington Publishing Company World Wide Web Site

<http://www.wpc-edi.com>

Paper Copy -

Blue Cross and Blue Shield Association

Inter-Plan Teleprocessing Service

676 North St. Clair

Chicago, IL 60611

### ***Indicator of Market Acceptance***

Health Care Claim Status Code is currently in wide use within the health care community for both EDI and flat file transactions, and for both private/commercial and government programs. Codes are developed and agreed upon by committee action.

### ***Level of Specificity***

Health Care Claim Status Category Code is a 2 position alphanumeric field that is mandatory. These codes are divided into six broad categories:

1. supplemental messages

2. acknowledgments
3. pending
4. finalized
5. requests for additional information
6. general questions

Health Care Claim Status Code is a three position numeric code that is mandatory. There are approximately 450 codes currently available. Each code's description is understood to automatically refer to service, procedure, treatment, supply, test, visit and medication.

Entity Identifier Code is a two position alphanumeric field that is optional - Used when an entity is associated with the Health Care Claim Status Code

An individual code may be up to seven (7) characters long.

### ***Identifiable Costs***

Code lists are available at no charge from either the Washington Publishing Web Site or the Blue Cross and Blue Shield Association.

### ***Logical Observation Identifier Names and Codes (LOINC) Consortium***

#### ***Logical Observation Identifier Names and Codes (LOINC)***

#### ***Developing Organization***

LOINC is a consortium of laboratories, system vendors, hospitals, and academic institutions organized by the Regenstrief Institute and supported by grants from the John A. Hartford Foundation of New York, the Agency for Health Care Policy and Research, and the National Library of Medicine.

#### **ANSI Accreditation:**

LOINC is a consortium, not a formal SDO. However, it is designed to work in conjunction with the HL7/ASTM and CEN observation (result) messages.

#### ***Name***

Logical Observation Identifiers Names and Codes (LOINC).

#### **Contact For More Information:**

Stan Huff <coshuff@ihc.com>  
36 South State St, Suite 800  
Salt Lake City, UT 84111  
Phone: 801 442 4885  
Fax: 801 263 3657

Clem McDonald <clem@regen.rg.iupui.edu>  
Regenstrief Institute

Indiana University School of Medicine  
1001 W. 10th St. 5th fl RHC  
Indianapolis, IN 46202  
Phone: 317 630 7070  
Fax: 317 630 6962

To obtain the Users' Guide, and full LOINC database in report, ASCII text, or dBase formats:  
<http://www.mcis.duke.edu/standards/termcode/loinc.htm>

## **DESCRIPTION**

### **(1) Laboratory LOINC**

LOINC concentrates on the identification and naming of test and clinical observations, things like diastolic blood pressure, serum glucose, blood culture, or "heart physical exam." LOINC does not deal formally with the values reported for these observations/measurements, some of which are valued as numbers, and some of which are valued as codes or text. Most of these coded answers are expected to be provided from other sources, such as SnoMed, CPT4, ICD9CM, and other code systems.

The laboratory component of the data base is fairly complete with respect to the tests listed in Table 1.

### **Table 1 Subject matter covered by Lab LOINC**

Chemistry  
Coagulation  
Hematology  
Microbiology including cultures, microscopic examinations, RNA and DNA probes,  
Antibody and antigen measures  
Antimicrobial susceptibility testing  
Toxicology and drug testing  
Surgical pathology  
Blood banking  
Blood counts and Urinalysis  
Fertility

Each record in the LOINC data base identifies one distinct observation. Each record contains the LOINC identifier, which is a meaningless number with a self check digit, and a multi-part formal name which includes component (e.g., glucose, intra-arterial diastolic), type of property (e.g., mass concentration, pressure), timing (e.g., point measure 24 hour), system (e.g., serum, brachial artery), scale (e.g., quantitative, qualitative), and method (e.g., dip stick, auscultatory).

In addition, the data base contains related names (near synonyms), molecular weights, indicators of terms that have been retired, a pointer to the terms that replace them, and related codes from other systems, e.g., the chemical abstract code for chemical substances.

With the data base comes a manual that provides formal rules for naming the parts of an observation, and a full definition of the data base.

LOINC does not yet include names for order sets, e.g., CHEM12.

### **Figure 1 Example Laboratory LOINC codes**

1919-0 ASPARTATE AMINOTRANSFERASE:CCNC:PT:FLU:QN  
3255-7 FIBRINOGEN:MCNC:PT:PPP:QN:COAG  
4531-0 COMPLEMENT TOTAL HEMOLYTIC:PT:BLD:QN  
9782-4 ADENOVIRUS SP IDENTIFIED:PRID:PT:XXX:QL:ORGANISM SPECIFIC CULTURE  
4991-6 BORRELIA BURGENDORFERI DNA:ACNC:PT:XXX:SQ:AMP/PROBE  
6324-8 BRUCELLA ABORTUS AB:TITR:PT:SER:QN:AGGL  
6337-0 CANDIDA ALBICANS AG:ACNC:PT:SER:SQ:ID  
9822-8 MICROORGANISM IDENTIFIED PRID:PT:DIAF:QL:STERILE BODY FLUID CULTURE  
6981-5 AZITHROMYCIN:SUSC:PT:ISLT:SQN:GRADIENT STRIP  
5573-1 ALUMINUM:MFR:PT:HAR:QN  
6473-3 MICROSCOPIC OBSERVATION:PRID:PT:TISS:QL:TRICHROME STAIN

The same general approach has been applied to common clinical measures as to laboratory observations. The same six major parts of the name, some with subparts, are used.

### **Table 2 Subjects covered in clinical LOINC**

Blood pressure (systolic, diastolic, and mean)  
Heart rate (and character of the pulse wave)  
Respiratory rate  
Critical care measures  
(Cardiac output, resistance, stroke work, ejection fraction, etc.)  
Body Weight (and measures used to estimate ideal body weight)  
Body Height  
Body temperature  
Circumference of chest, thighs, legs, etc.  
Intake and output  
Major headings of history and physical  
Major headings of discharge summary  
Major headings of an operative note  
Electrocardiographic measures

Clinical LOINC code numbers are taken from the same sequence of numbers as the Lab LOINC codes.

For many clinical measures, measurements are distinguished for estimated, reported, and measured values. (E.g., a patient's report of his or her body weight is a different variable from a measured result or the physician's estimate.) Also varying degrees of pre-coordination are provided for the observation, the body site at which it was obtained, and the method. E.g., a cardiac output based on the Fick method is distinguished from a cardiac output based on a 2D cardiac echo.

Physiologic measures are often monitored continuously over time, and the instrument reports summary "statistics" over that reporting period. The summary statistics can include minimum, maximum, and mean over a time period for vital signs measurements and fluid intake and output. When we address measures taken over time, we usually include 1 hour, 8 hour, 10 hour, 12 hour, and 24 hour summaries. The middle three durations are included to cover the varying durations of work shifts within and across institutions.

The parts of clinical measurement names are the same as for laboratory measures. The fourth part, the system, usually identifies an organ system or a particular part of the anatomy. For a measure of systolic left ventricular pressure, the system would be "Cardiac ventricle.left." In contrast to laboratory tests, where the component is usually some chemical entity, the clinical measurement component usually identifies the specific aspect of a property that is measured. For example, the property type might be pressure. Then the component would identify the pressure measured as intravascular diastolic. In general the component is used to distinguish the various points or ranges, or inflections of a physiologic tracing, and to define precisely which of a number of possible dimensions of length or area are being measured in imaging.

Laboratory measures tend to be more regular than clinical measures. The system is usually a specimen and the component a chemical or molecular moiety. For most clinical measurements, the component is also an attribute of a patient or an organ system within a patient. However, attributes of non-patient entities are often of interest in the case of clinical measurements. For example, we might want to know the class of instrument used to obtain the measurement.

### **Figure 2 Example Clinical LOINC terms**

8285-5 CIRCUMFERENCE.OCCIPITAL-FRONTAL:LEN:PT:HEAD:QN:TAPE MEASURE  
 8496-2 INTRAVASCULAR DIASTOLIC:PRES:PT:BRACHIAL ARTERY:QN  
 9940-8 Q WAVE DURATION:TIME:PT:LEAD V1:QN:EKG  
 8660-3 HISTORY OF SYMPTOMS & DISEASES:FIND:PT:CARDIOVASCULAR  
 SYSTEM:QL:REPORTED  
 8651-2 HOSPITAL DISCHARGE DX:IMP:PT:PATIENT:QL  
 9129-8 FLUID OUTPUT.CHEST TUBE:VOL:PT:PLEURAL SPACE:QN

### **Readiness**

The LOINC database of over 10,000 observations/measurement/test result codes is available for free use on the Internet.

There is only one official version of the LOINC standard. Codes are never re-used when the meaning of a term changes. Updates and additions are made at two to three month intervals.

### **Indicators of Market Acceptance**

The laboratory component of LOINC was installed on the Internet in April of 1995, and has been greeted enthusiastically since. It has been endorsed by the American Clinical Laboratory Association (ACLA) and recommended for adoption by its members. The ACLA is the association of large referral laboratories, and its members are responsible for more than 60% of US outpatient laboratory volume. Corning MetPath and LabCorp, two of the largest commercial laboratories, have adopted LOINC as their code system for reportable test results, as has LifeChem and Associated Regional and University Pathologists (ARUP). In addition, Indiana University labs, University of Colorado, Intermountain Health Care, University of Missouri, and Barnes/Jewish Hospital are in the process of converting their reporting to LOINC codes. The province of Ontario, Canada has made a tentative commitment to the LOINC codes for a province-wide coding standard.

The LOINC codes have been used as the basis for HCFA's ICD10-PCS laboratory codes. They have been incorporated in HCFA's quality assurance testing pilot software, and they have been adopted by the Centers for Disease Control and Prevention/State and Territorial Epidemiologist project for transmitting communicable diseases reports electronically.

## ***Level of Specificity***

The identifiers are specific in up to eight dimensions. The goal is to match the level of specificity provided by the master files of the systems that report these kinds of results. Laboratory test results are distinguished (and specific) to the analyte (e.g., glucose), the type of property (e.g., mass concentration), the timing aspects (e.g., 24 hour specimen), the specimen, (e.g., urine), and the method - as needed. In the case of serology tests, which tend to include method information in their name, LOINC includes the methods. In the case of chemistry tests, that tend not to include method information in their name, the LOINC codes tend not to be specific about method. The data base now includes over 10,000 laboratory and clinical observations.

## ***Identifiable Costs***

The LOINC data base and Users' Guide is available for free use for any purpose by users and vendors from the Internet Web site listed above. It is copywritten in order to prevent the development of multiple variants.

## ***Georgetown University Home Care Project***

### ***Home Health Care Classification (HHCC) System***

Home Health Care Classification (HHCC) System is a system designed to assess and document home health and ambulatory care using its standardized HHCC nomenclature. Its documentation method tracks home health and ambulatory care. It is based on a conceptual framework using the nursing process to assess a patient holistically. HHCC nomenclature consists of six data dictionaries:

- 20 home health care components to assess and classify care;
- 145 nursing diagnoses (50 major categories & 95 subcategories);
- 3 expected outcome goals that modify nursing diagnoses;
- 160 nursing interventions (60 major & 100 subcategories);
- 4 nursing action types that modify nursing interventions and converts the dictionary to 640 unique nursing interventions;
- 3 actual outcomes that evaluate the care process.

A patient/client is also assessed using 20 medical diagnoses and/or surgical procedure categories, and 10 socio-demographic data elements.

HHCC System can be used to identify: (a) care needs in terms of care components and their respective nursing diagnoses and interventions; and (b) resource use in terms of nursing and other health providers (physical, occupational, and speech therapy, medical social worker, and home health aide). The medical assessment categories and socio-demographic data elements are descriptive variables that can be correlated with clinical care data.

HHCC is also designed to record the clinical care pathways for an entire episode of care. The care events can be used to determine care costs, and can provide a payment method for managed care services. HHCC System runs on microcomputer using a portable notebook to facilitate ease of use for data collection and then downloaded to a computer-based workstation for processing.

References are available upon request.

**Purpose:** The Home Health Care Classification (HHCC) - Nursing Diagnoses and Nursing Interventions was developed by Saba as part of the Georgetown University Home Care Project. It was developed to classify, code for computer processing and analyze study data. The HHCC is being used to document and describe home health nursing care, as well as determine cost and measure outcomes.

**Structure:** The Home Health Care Classification (HHCC) - Nursing Diagnoses and Nursing Interventions are classified according to 20 Home Health Care Components:

1. Activity 11. Physical Regulation
2. Bowel Elimination 12. Respiratory
3. Cardiac 13. Role Relationship
4. Cognitive 14. Safety
5. Coping 15. Self-Care
6. Fluid Volume 16. Self-Concept
7. Health Behavior 17. Sensory
8. Medication 18. Skin Integrity
9. Metabolic 19. Tissue Perfusion
10. Nutritional 20. Urinary Elimination

HHCC of Nursing Diagnoses: The scheme consist of 145 nursing diagnoses (50 two digit major categories and 95 three-digit subcategories). Each nursing diagnosis has a modifier to code three possible expected outcomes: **1=improved, 2=stabilized, or 3=deteriorated.**

HHCC of Nursing Interventions: It consists of 160 unique nursing interventions (60 two digit major categories and 95 three-digit subcategories). Each nursing intervention has a modifier to code four types of nursing action: **1=access, 2=direct care, 3=teach, and/or 4=manage.** The type of action modifier adds the implementation facet to the HHCC of Nursing Intervention Taxonomy expanding it to 640 possible nursing intervention codes.

The HHCC is structured according to the Tenth Revision of the International Classification of Diseases (ICD-10). Each classification label consists of a five character alphanumeric code. The HHCC Care Component is alphabetic and the first character, the Nursing Diagnosis or Nursing Intervention is represented by a second and third digit for major categories, and in some instances a fourth numeric digit for minor subcategories, and the fifth digit is used to represent a modifier for each scheme.

**Availability:**

Virginia K. Saba, EdD, RN, FAAN  
Georgetown University  
School of Nursing  
3700 Reservoir Road, NW  
Washington, DC 20007  
Tel: (202) 687-46479

## ***Perspective on Code Sets within Transaction Standards***

This perspective was presented to the ANSI HISB on December 13, 1996 by Christopher Chute, M.D., co-chairman of the Codes and Vocabulary Sub-committee of the ANSI HISB TCC.

## ***Analysis of Code Sets within Transaction Standards***

### **Data Standards Roster Code Sets within Transaction Standards**

The Codes and Vocabulary Sub-committee reports the obvious finding that existing Transactions Standards have embedded within their specification scores of implicit and explicit value tables for data elements. Common examples include values for demographic variables such as race, gender, or marital status. More clinically pertinent codes include Admission Type and Condition Codes. Some standards contain large numbers of specified codes, for example the ANSI X12 837 Health Care Claim template includes or references 441 discrete code tables within that single standard.

Two problems present themselves: 1) Cross mapping named fields or elements among transaction standards; and 2) for each cross mapped element, resolving the code set values among embedded codes sets across transaction standards. The Table below simplistically illustrates a result of this process for one of the 441 code tables in X12N 837 - Admission Type.

## Admission Type

UB-92	X12N	HL/7	Values
		A	Accident
1	=UB92	E	Emergency
		L	Labor and Delivery
		R	Routine
2	=UB92		Urgent
3	=UB92		Elective

Table: Code values for fields "Admission Type"

This subcommittee recommends that HHS assume or commission a detailed evaluation of the complex problem of embedded code sets among transactions standards. For the major transaction standards and their clinical systems sources (e.g. X12N, UB-92, NSF, HL/7, and ASTM E-1384) we suggest:

1. Embedded Code Sets be identified and characterized.
2. Code sets should be clustered across standards for similarity on the basis of element name, table content, or semantic function.
3. For each cluster of similar code sets, the values should be tabulated in a way to clearly represent overlap, discord, and union. The Table layout above might provide a practical format.
4. An analysis of content conflict on the basis of these similarity tables should be presented.
5. Recommended resolutions of code table conflicts should be proposed.

The resultant report would be an enormously valuable resource for Standards Developer Organizations and the overall ANSI HISB to review and collaboratively revise. DHHS might then act upon the revised recommendations from the Standards community to adopt common code table standards across transaction records and their clinical source systems.