

ICD-9-CM to ICD-10-CM Conversion

The New U.S. Healthcare Coding and Reimbursement System

By: Laura Jane Ellsworth
June 3, 2004

Table of Contents

Introduction/Overview	3
Flow of Clinical Information	5
ICD-9-CM (Diagnoses and Procedures, Volumes 1-3)	6
ICD-10-CM (Diagnoses, Volumes 1 and 2)	8
ICD-10-PCS (Procedure, Volume 3)	9
ICD-10-PCS Manual Sections	11
ICD-10-PCS Medical and Surgical Procedures	13
Modifications to ICD-10-PCS	16
ICD-9-CM and ICD-10-CM/PCS Comparison	18
Comparison of ICD-9-CM and ICD-10-PCS	19
(Using NCVHS Characteristics)	
Problems with ICD-9-CM to ICD-10-CM / ICD-10-PCS Transition	21
Adoption and Implementation Problems/Impacted Entities	21
Crosswalk Difficulties	25
Extensive Financial, Statistical, and other Implementation Costs	26
Timeline/Summary of ICD-10-CM and ICD-10-PCS Development	29
ICD-10-CM Development Timeline	29
ICD-10-PCS Development Timeline	30
Review	31
Appendix/Works Cited	32

Introduction/Overview

There are currently three major provider coding systems in use in the United States Health Care System, for both Hospital Inpatient and Hospital Outpatient procedures: 1.) ICD-9-CM diagnosis, 2.) ICD-9-CM procedure, and 3.) CPT codes, ambulatory and physician services. ICD-9-CM diagnosis and ICD-9-CM procedure codes are used in the various Hospital Inpatient settings, and drive the Diagnosis Related Groups (DRGs) that most insurers reimburse off of as a lump sum payment for related services and procedures. ICD-9-CM procedure and CPT codes, on the other hand, are the codes used in the Hospital Outpatient setting, and drive the Ambulatory Payment Classifications (APC), similar to a DRG, that most providers reimburse off of as a lump sum for related services and procedures. Physician offices mainly use ICD-9-CM and CPT codes for reimbursement purposes. The different types of provider settings and the coding system used in each setting can be found in the table below.

Provider Setting	ICD-9-CM Diagnosis	ICD-9-CM Procedure	CPT
Hospital Acute Care Inpatient	X	X	
Hospital-based Ambulatory Services (Includes surgery, ancillary services)	X	X (some payers)	X (some payers)
Physician Office	X		X
Health Plans	X	X (some payers)	X (some payers)
Home Health Services	X		
Hospice	X		X
Long Term Care	X		
Rehabilitation-inpatient	X	X	
Psychiatric-inpatient	X	X	
Rehabilitation-outpatient	X		X
Psychiatric-outpatient	X		X

The Centers for Medicare and Medicaid Services (CMS), formerly the Health Care Financing Administration (HCFA), and several other United States health care providers are currently in the process of transitioning from the inefficient, outdated *International Classification of Diseases, 9th Edition, Clinical Modification*, or ICD-9-CM coding system, to the newly-created ICD-10-CM coding system.

The contexts for change are as follows:

- *Health Insurance Accountability and Portability Act of 1996* (HIPAA)
- Provisions to standardize electronic transmission of administrative and financial transactions
- Calls for adoption of standard code sets, ones that are flexible, yet exact

The ICD-9-CM system is an *International Coding System (ICS)*, currently used in the United States, which enables providers to code specific diagnoses. Several countries have already converted over to ICD-10 system. See the listing below that shows the country and the year they started using the ICD-10 system.

Countries using ICD-10, for Reimbursement or Casemix	
Country	Year
United Kingdom	1995
Nordic Countries (Denmark, Finland, Iceland, Norway, and Sweden)	1994-1997
France	1997
Australia	1998
Belgium	1999
Germany	2000
Canada	2001

Overall, a total of 138 countries have adopted ICD-10 for mortality data purposes, and 99 countries have adopted it for morbidity. The United States has also already implemented a portion of ICD-10 for mortality data, effective January 1, 1999, but we are still waiting to convert morbidity, diagnosis, and procedure coding over to the new ICD-10-CM system. It is expected, however, that ICD-10-CM, the clinical modification of ICD-10 that the United States has created, as it currently stands, will not officially become the national standard until October 1, 2007, if at all. If and when implemented, it will mainly be based on standards created under Administrative Simplification (AS) provisions, as part of the *Health Insurance Portability and Accountability Act of 1996 (HIPAA)*. The AS provisions are intended to standardize the way information is electronically transmitted among healthcare organizations, and reduce administrative costs of healthcare administration by significantly reducing the number of transaction formats in use.

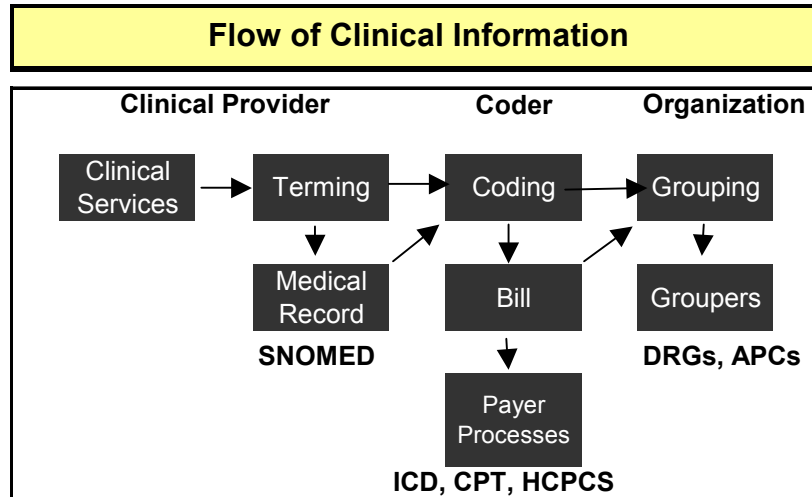
The *Local Coverage Determination* process (formerly the *Local Medical Review Policy (LMRP)*) process, used for claim policy and billing instructions for Medicare claims, is similar to the ICD-9-CM to ICD-10-CM conversion process, as they have adopted the same HIPAA adoption standards.

HIPAA Adoption Standards include:

- Public Hearings
- Notice of Proposed Rulemaking (NPRM)
- Public Comment Period
- Final Rule

Flow of Clinical Information

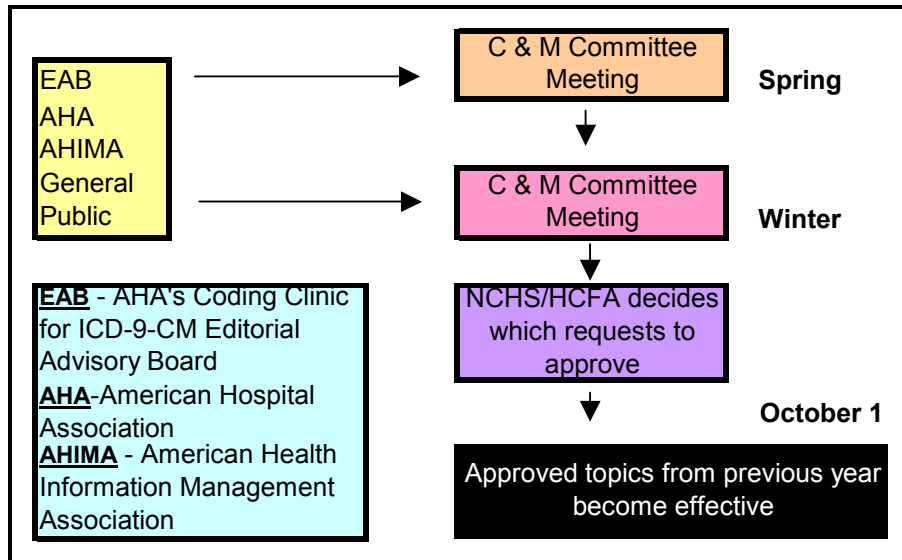
The ICD-10-CM conversion impact can be better understood by understanding the overall sequence of events that create and move clinical information from providers to payers. The following model, ‘Termining – Coding – Grouping’, was developed by H.C. Mullins, M.D. Professor, Family Practice University of South Alabama in Mobile.



In this model, “termining” follows the actual delivery of clinical services. Termining is defined as describing in precise, but currently non-standardized ways, the exact clinical situation and actions taken. Providers do this by writing hand-written notes, checking off forms, inputting information to an electronic medical record, or dictating operative notes. Termining is used for clinical coordination with staff and other providers, risk management, and reimbursement purposes. SNOMED is the most commonly used Medical Record database software. “Grouping” is where DRGs and APCs, depending on the type of setting (Hospital Inpatient or Hospital Outpatient), are created for lump sum reimbursement purposes.

The *ICD-9-CM Coordination and Maintenance Committee (ICD-9-CMC)*, in addition to the annual ICD-9-CM coding change and text revisions that they are responsible for, has recently undertaken the task of completely revising the official coding guidelines to reorganize them into several new sections, including an enhanced introduction that provides more detail about the structure and conventions of the classification. Last year, in 2003, the greatest number of changes were made to the ICD-9-CM as compared with the past six years. This coding change trend will continue because of new emerging technology, medications, and procedures.

The ICD-9-CM Maintenance Committee process breakdown:



Note: ICD-9-CM updates are effective annually on October 1, and the updates include new codes, as well as expansions/revisions of existing codes.

The *International Classification of Diseases (ICD)*, created and copyrighted by the WHO, does NOT account for procedure coding, Volume 3. Because of this, several countries have created clinical modifications to the various revisions. In the United States, the current clinical modification system, ICD-9-CM, consists of, and accounts for, both diagnosis coding (Volumes 1 and 2), as well as procedure coding (Volume 3). We are currently in the process of transitioning to ICD-10-CM, which consists of ICD-10-CM (Volumes 1 and 2) for diagnosis coding, and ICD-10-PCS (Volume 3) for procedure coding.

The development of ICD-10-PCS has four main objectives. CMS states, “If these four objectives are accomplished, the ICD-10-PCS should enhance the ability of health information coders to determine accurate codes with minimal effort.”

ICD-10-PCS Four Main Objectives:

- 1) **Completeness** – All substantially different procedures should have a unique code, NOT one code to describe several somewhat-related and even non-related procedures.
- 2) **Expandability** – As new procedures are developed, the structure of ICD-10-PCS should allow them to be easily incorporated as unique codes.
- 3) **Multi-Axial** – To the extent possible, each character should have the same meaning within a specific procedure section and across procedure sections.
- 4) **Standardized Terminology** – ICD-10-PCS should include terminology definitions, but should NOT include multiple meanings for the same term.

The ICD-9-CM procedure coding system currently in use is limited to a maximum of 10,000 codes, while the current draft of the ICD-10-PCS has over 195,000 codes, a number which can and likely will be expanded even further. ICD-9-CM to ICD-10-CM coding changes, revision, and guideline updates will significantly impact coding accuracy, and will provide more appropriate reimbursement to providers for products and services billed on provider claims.

ICD-10-PCS has created several advantages and notable improvements:

- 1) **Diagnostic information is NOT included in Procedure Description** – The specific disease or disorder is not specified when procedures are performed
- 2) **Explicit “Not Otherwise Specified” (NOS) options are NOT provided** – For each component of the procedure, a minimal level of specificity is always required, and rules are set forth specifying how the procedure should be coded when there is insufficient information available in the medical record to support the required ICD-10-PCS specificity.
- 3) **Limited use of “Not Elsewhere Classified” (NEC) option** – When and if new devices are developed, ones that aren’t yet assigned a code, this NEC option code can be used for classification and payment until the new device can be assigned a code, and added to the coding system.
- 4) **Greater specificity in coding assignment** – All possible procedures have been defined, based on the combinations of the seven alphanumeric characters. A code was created for any procedure that could be performed.
- 5) **More information regarding ambulatory and managed care encounters.**
- 6) **Expanded injury codes**
- 7) **The creation of combination diagnosis/symptom codes** (which reduce the number of codes needed to fully describe a condition).
- 8) **The disease classification has been expanded** to include health-related conditions, and to provide greater specificity at the sixth digit level, and even with a seventh digit extension when necessary.
- 9) **The range of code changes and revisions span across all medical specialties.**
- 10) **Ample space for recognition of new technology and devices** (specific character(s) are reserved for specification of devices)
- 11) **Logical structure makes adoption of new codes a straight-forward process**
- 12) **Allows the DRG definitions to better recognize new technology and devices**

ICD-10-PCS Manual Sections:

There are currently three separate divisions, grids in the ICD-10-PCS system: 1.) Tabular Listing, 2.) Index, and 3.) List of Codes. Each section of the manual is meant to assist providers in their search for the correct and complete diagnosis and procedure codes. It is very important that providers are consistent and accurate in the codes used for billing, reimbursement, and reporting purposes. Furthermore, they are constantly being monitored and audited by both public and private insurers.

- 1) **Tabular Listing** – Each page is composed of grids, which specify the valid character value combinations that comprise a particular procedure code. The upper portion of each grid contains a description of the first two or three characters of the procedure code. The lower portion of the grid specifies all valid combinations of characters four through seven. Each row in the grid defines the valid combinations of characters, four through seven. The tabular list contains only combinations of characters that represent a valid procedure.
- 2) **Index** – Allows codes to be located and searched for alphabetically, and will refer you to a specific location or section in the tabular list. Reference to the Tabular List is always required in being able to obtain the complete code. Codes can be found in the index based on the procedure being performed. After locating the desired term in the index, the index will specify the first three or four characters of the code followed by three periods (e.g. 0270...). These three characters obtained make it possible to find the corresponding entry in the Tabular List. The tabular list is then used to obtain the complete code by specifying the last four digit possible combinations.
- 3) **List of Codes** – The actual codes that result from the *First Body Part* in the grid. The fourth character is representative of the *First Body Part*. Each code has a complete, and easy-to-read description. Altogether, characters 1-4 represent the bulk of the Medical and Surgical Section.

Example of Tabular			
02725DZ - Dilation three coronary arteries, percutaneous intraluminal with intraluminal device			
0: Medical and Surgical			
2: Heart & Great Vessels			
7: Dilation: Expanding the orifice or the lumen of a tabular body part			
Body Part Character 4	Approach Character 5	Device Character 6	Qualifier Character 7
0 Coronary Artery, <i>One</i>	1 Open Intraluminal	D Intraluminal Device	Z None
1 Coronary Arteries <i>Two</i>	2 Open Intraluminal Endoscopic	Y Device NEC	
2 Coronary Arteries <i>Three</i>	5 Percutaneous Intraluminal	Z None	
3 Coronary Arteries, <i>Four or More</i>	6 Percutaneous Intraluminal Endoscopic		

The ICD-10-PCS grid structure, see above, permits a larger number of codes to be specified on a single page in the Tabular division. The combined Tabular and Index divisions of ICD-10-PCS total 1,087 pages, approximately half the size of the Tabular and Index found in the ICD-10 diagnosis coding manual published and created by the *World Health Organization* (WHO).

ICD-10-PCS Medical and Surgical Procedures:

Medical and Surgical Procedures have seven characters. Characters 1-4 must always be assigned a precise value. The approach (character 5), the device (character 6), and the qualifier (character 7) are not applicable to all procedures. The letter Z is used for characters 5, 6 and 7 to indicate that an approach, device, or qualifier weren't applicable for a specific procedure.

1	2	3	4	5	6	7
Section	Body System	Root Operation	Body Part	Approach	Device	Qualifier

** Assigned a Precise Value**

** Not Applicable to all Procedures**

Note: Each procedure may have additional or different root terms, definitions, qualifiers, approaches, devices, etc, but the overall, fundamental coding procedures are the same, and similar steps will be followed. Characters 1-4, for example, are always going to have the same steps, even if characters 5-7 may differ. Characters 1-4 represent the major Medical and Surgical procedure.

- Section** – Contains the vast majority of procedures normally reported in an inpatient setting. The first character is usually specified with the number “0” for Medical and Surgical procedures. See table below:

Sections	
0 Medical and Surgical	8 Osteopathic
1 Obstetrics	9 Rehabilitation and Diagnostic Audiology
2 Placement	B Extracorporeal Assistance and Performance
3 Administration	C Extracorporeal Therapies
4 Measurement and Monitoring	D Laboratory
5 Imaging	F Mental Health
6 Nuclear Medicine	G Chiropractic
7 Radiation Oncology	H Miscellaneous

- Body System** – General body system is indicated by the second character

Body Systems	
0 Central Nervous System	J Subcutaneous Tissue
1 Peripheral Nervous System	K Muscles
2 Heart and Great Vessels	L Tendons
3 Upper Arteries	M Bursa, Ligaments, Fascia
4 Lower Arteries	N Head and Facial Bones
5 Upper Veins	P Upper Bones
6 Lower Veins	Q Lower Bones
7 Lymphatic and Hemic System	R Upper Joints
8 Eye	S Lower Joints
9 Ear, Nose, Sinus	T Urinary System
B Respiratory	V Female Reproductive System
C Mouth and Throat	W Male Reproductive System
D Gastrointestinal System	X Anatomical Regions
F Hepatobiliary System and Pancreas	Y Upper Extremities
G Endocrine System	Z Lower Extremities
H Skin and Breast	-----

- 3) **Root Operation** – Specifies the objective of the procedure, indicated by third character

Root Operation Types		
Alteration	Excision	Release
Bypass	Extirpation	Removal
Change	Extraction	Repair
Control	Fragmentation	Replacement
Creation	Fusion	Reposition
Destruction	Insertion	Resection
Detachment	Inspection	Restriction
Dilation	Map	Revision
Division	Occlusion	Transfer
Drainage	Reattachment	Transplantation

- 4) **Body Part** – Fourth character indicates the specific body part where the procedure was actually performed
- 5) **Approach** – Fifth character indicates the approach used to reach the site of the procedure (e.g. open).

Two components of Approach (Fifth Character):

1. **Access Location** – For operations performed on an internal body site, the access location specifies the external body site through which the internal site of the operation is reached.

Three Possible Access Locations:

- 1) **Skin**
- 2) **Mucous Membranes**
- 3) **External Orifices**
 - a. **Natural** – e.g. mouth or genital area
 - b. **Unnatural** – e.g. colostomy stoma

2. **Method** – Specifies how the external body site gets entered

Two Major Methods:

- I. **Open Method** – Involves cutting through the skin or mucous membrane to expose the internal site of the operation.
- II. **Instrumental Method** – Involves the entry of instrumentation through the Access Location in order to reach the internal site of the procedure. Instrumentation can also be introduced by puncture or minor incision or through an external orifice, but the puncture or minor incision used to introduce the instrumentation does NOT constitute an Open

Approach since it does not expose the site of the procedure or expose any tubular body part.

There are two Instrumentation Method types in an Approach:

- a. **Type of Instrumentation** – Instrumentation may be endoscopic, or include the capability to visualize the site of the operation.
- b. **Route** – Instrumental methods may involve the passage of instrumentation into the lumen of a tubular body part in order to reach the internal site of the operation.

Components of Medical and Surgical Approach Definitions				
Access Location	Method	Type of Instrument	Route	Approach
Skin or Mucous Membrane	Open	N/A	N/A	Open
Skin or Mucous Membrane	Open Instrumental	Without Visualization	Intraluminal	Open Intraluminal
Skin or Mucous Membrane	Open Instrumental	With Visualization	Intraluminal	Open Intraluminal Endoscopic
Skin or Mucous Membrane	Instrumental	Without Visualization	N/A	Percutaneous
Skin or Mucous Membrane	Instrumental	With Visualization	N/A	Percutaneous Endoscopic
Skin or Mucous Membrane	Instrumental	Without Visualization	Intraluminal	Percutaneous Intraluminal
Skin or Mucous Membrane	Instrumental	With Visualization	Intraluminal	Percutaneous Intraluminal Endoscopic
Orifice	Instrumental	Without Visualization	Intraluminal	Transorifice Intraluminal
Orifice	Instrumental	With Visualization	Intraluminal	Transorifice Intraluminal Endoscopic
Skin or Mucous Membrane	N/A	N/A	N/A	None

6) **Device** – Sixth character indicates whether any device was used in the procedure, only to be used to specify devices that remain after the procedure is completed.

Four Types of Devices:

1. Biological or synthetic material that takes the place of all or a portion of the body part (e.g. skin grafts and joint prosthesis)
2. Biological or Synthetic material that assists or prevents a physiological function (e.g. IUD)
3. Therapeutic material that is not absorbed by, eliminated by, or incorporated into a body part (e.g. radioactive implant). Therapeutic materials that are considered devices can always be removed.
4. Mechanical or electronic appliances used to assist, monitor, take the place of, or prevent a physiological function (e.g. diaphragmatic pacemaker, orthopedic pins, etc.)

Note: Devices can be used with the root operations alteration, bypass, change, creation, dilation, drainage, fusion, insertion, occlusion, reattachment, removal, repair, replacement, restriction, and revision. Instruments that describe how a procedure is performed are NOT specified in the devise character. The approach character specifies whether instrumentation is used to reach or to reach and visualize the site of

the procedure. If the device is put in as a part of a procedure that has an underlying objective other than the insertion of the device, then the root operation corresponding to the underlying objective of the procedure is used with the device specified in the device character. Materials which are incidental to a procedure are not specified in the device character. Since new devices can be developed, a Device “*Not Elsewhere Classified*” (NEC) option is provided.

7) Qualifier – This character has a unique meaning for individual procedures

In the ICD-10-CM PCS, there will be a total of 194,915 codes that providers can use for billing and reporting purposes. There are currently around 4,000 codes in the ICD-9-CM system, which does not compare to the amount of ICD-10-PCS codes. The table below helps break the ICD-10-PCS codes into several categories.

Number of ICD-10-PCS Codes by Section:

Procedure Section	Number of Codes
Medical and Surgical	176,367
Obstetrics	322
Placement	831
Administration	1,228
Measurement and Monitoring	224
Imaging	9,433 (13,141)
Nuclear Medicine	365 (1,011)
Radiation Oncology	1,225 (308,015)
Osteopathic	100
Rehabilitation and Diagnostic Audiology	1,705
Extracorporeal Assistance and Performance	28
Extracorporeal Therapies	20
Laboratory	2,681
Mental Health	283
Chiropractic	100
Miscellaneous	3
TOTAL	194,915

Modifications to ICD-10-PCS:

Due to trial and error, and system testing of the ICD-10-PCS system, it was determined by many that some changes needed to be made to the original ICD-10-PCS system. Originally, ICD-10-PCS did not provide for “*Not Otherwise Specified*” (NOS) codes. Because of this, modifications were made to address this issue. Since ICD-10-PCS is multi-axial, the NOS issue meant something different for each character. In the Medical and Surgical Section, though other characters may lack specification, and a generic code needs to be used, the NOS issue mainly deals in regards to the Root Operation. For

example, “*repair*” is an operation of exclusion. Though all of the root operation characters refer to a more specified form of repair, “*Repair*” itself is only coded when none of the other 29 root operations apply, hence it is the NOS option for the root operation character. In other words, if the root operation cannot be determined from documentation, medical records, other necessary information, or the physician itself, then the root operation “*repair*” should be coded.

The coding can even go backwards, from specific to broad, when necessary. For example, the provider can use a broad description if and when full detail is not available in the medical record, and the necessary information could not be obtained from the physician. It is up to the coder, however, to try to code as specific as possible. Some distinctions are so fundamental to the description of the procedure that any less specificity relative to the character, especially regarding Medical and Surgical characters, the first four characters, whatever it might be, would not be appropriate, and may significantly reflect provider reimbursement, cost analysis, morbidity data, or any other healthcare statistic.

ICD-9-CM and ICD-10-CM/PCS Comparison

There are a total of 197,769 codes in ICD-10-PCS, a substantial increase in the number of codes relative to ICD-9-CM procedure codes, which total 4,000 codes. The number of codes from ICD-9-CM diagnosis codes, totaling 13,000, has also increased substantially with the creation of ICD-10-CM diagnosis codes, which total 120,000. Overall, several major changes have taken place between each ICD-CM classification structure. The biggest change has occurred from the ICD-9-CM to ICD-10-CM. The whole system has been completely revamped to be able to meet current coding needs. Some examples can be shown in the tables below.

ICD-9-CM to ICD-10-CM Diagnosis (Major Changes)	
ICD-9-CM	ICD-10-CM
Numeric with supplementary codes- only letters V and E used	All codes are alphanumeric with all codes using alphabetic lead character
Maximum 5 digits	Maximum 6 digits
No laterality (left vs. right)	Laterality
17 chapters with two additional supplementary classification chapters: V-codes and E-codes	21 chapters with no supplementary classifications (already incorporated into ICD-10-CM)
Minimum of 3 digits, maximum of 5 digits, decimal point after the third digit	Minimum of 3 digits, maximum of 6 digits, decimal point after the third digit

ICD-9-CM to ICD-10-PCS Procedure (Major Changes)	
ICD-9-CM	ICD-10-PCS
Minimum of 3 digits, maximum of 4 digits, decimal point after the second digit	Minimum/maximum 7 digits, no decimal point
Numeric	Alphanumeric

In the testing phase of the ICD-10-PCS project, after an initial learning curve, *Clinical Data Abstraction Centers* (CDACs), contractors that CMS hired to train and test the system, were able to use ICD-10-PCS easily, and with few challenges. The added detail did require coders to utilize medical dictionaries and anatomy textbooks more often, and coders, in general, were required to have a greater understanding of anatomy and surgical terms, more than required for ICD-9-CM, but despite the increase in time needed to code and bill, it was felt that the precision of ICD-10-PCS resulted in greater coding detail, accuracy, and efficiency, and was overall, worthwhile. It was stated, “CDACs have found ICD-10-PCS to be an improvement over ICD-9-CM, as it provided greater specificity in coding for use in research, statistical analysis, and administrative areas. A major strength of the system was its detailed structure, which allows users to recognize and report more precisely the procedures that were performed.”

The National Committee on Vital & Health Statistics (NCVHS), in a report issued in 1993, made the recommendation to move to a single procedure classification system. In this report, they’d identified the essential characteristics that they felt a procedure classification system should possess. In the table below, a comparison is made of ICD-9-CM and ICD-10-PCS across each of the NCVHS characteristics.

-Comparison of ICD-9-CM and ICD-10-PCS Using NCVHS Characteristics-

Referring to the table below, and based on the comparisons, this table clearly shows that, with ICD-10-PCS, nearly all of the NCVHS characteristics have been met, while ICD-9-CM has failed to meet the majority of these characteristics. Other attributes, in addition to the NCVHS characteristics, that a procedure coding should possess are: training effort/learning curve, completeness and accuracy of codes, and communications with physicians. In regards to communication with physicians, the ICD-10-PCS codes, overall, provide a more clinically relevant description of procedures, and can be more readily used and understood by physicians, whereas with ICD-9-CM, it is more difficult to develop clinical pathways, research, and/or evaluate coding from a fraud and abuse standpoint.

NCVHS Characteristics	ICD-9-CM	ICD-10-PCS
Hierarchical Structure		
Ability to aggregate data from individual codes into larger categories	Ability to aggregate by body system is provided, but there's no ability to aggregate by other components of a procedure	The ability to aggregate across all essential components of a procedure is provided
Each code has a unique definition forever - not reused	Some codes do not have a unique definition because the codes have been reused	All codes have a unique definition
Expandability		
Flexibility to new procedures and technologies ("empty" code numbers)	Minimal flexibility New Procedures and technologies are difficult to incorporate. (Virtually no "empty code" numbers)	Extensive flexibility New procedures and technologies are easily incorporated. (Unlimited "empty code" numbers)
Mechanism for periodic updating	Updated annually through ICD-9-CM Coordination and Maintenance Committee	Update process needs to be established. If ICD-10-PCS replaces ICD-9-CM, Coordination and Maintenance Committee would be responsible for update process.
Code expansion must not disrupt systematic code structure	Code expansions are difficult to incorporate without disrupting systematic code structure	Code expansions do NOT disrupt systematic structure
Comprehensive		
Provides NOS and NEC categories so that all possible procedures can be classified somewhere	Extensive use of NOS and NEC categories. All procedures can be categorized somewhere. Broad NOS and NEC categories result in procedure codes which are ambiguously defined	Limited use of NOS and NEC categories. NEC and NOS categories are specific to each axis of code. All procedures can be categorized somewhere. Procedure codes are precisely defined even when NOS and NEC options are used.
Includes all types of procedures	All types of procedures are included although there is minimal detail for many types of procedures	All types of procedures are included except evaluation and management procedures. Complete detail is provided for all types of procedures
Applicability to all setting and types of procedures	All settings and types of providers are covered although there is minimal detail for many settings and types of providers	All settings and types of providers are covered except physician office services for evaluation and management. Complete detail is provided for all settings and types of providers
Non-Overlapping		
Each procedure (or component of a procedure) is assigned to only one code.	The same procedure when performed for different diagnoses is sometimes assigned to multiple codes.	Each procedure is assigned to only one code
Ease of Use		
Standardization of definitions and terminology	No Standard definitions provided. Terminology is inconsistent across codes	All terminology is precisely defined. All terminology is used constantly across all codes.
Adequate indexing and annotation for all users	Full index, but specificity of index varies across codes	Full index. Index is computer generated so specificity of index is consistent across codes
Setting and Provider Neutrality		
Same code, regardless of who or where procedure is performed	Codes are independent of who or where procedure is performed	Codes are independent of who or where procedure is performed
Multi-Axial		
Body system(s) affected	Body system affected can be determined from code number	A specific character I the code specifies the body system affected
Technology Used	Limited and inconsistent specification of technology used	Technology used is specified in the approach character of the code
Techniques/approaches used	Limited and inconsistent specification of techniques/approaches used	The techniques/approaches used are specified in the approach character of the code
Physiological effect of pharmacological properties	Limited and inconsistent specification physiological affect and pharmacological properties	Physiological affect and pharmacological properties are specified when relevant to the procedure
Characteristics/composition of implant	Limited and inconsistent specification of characteristics/composition of implant	The characteristics/composition of implants are specified in the device character of the code
Limited to Classification of Procedures		
Should not include diagnostic information	Diagnostic information is included for some codes	No diagnostic information is included in the code
Other data elements (such as age) should be elsewhere in the record	No other data elements included in the code	No other data elements included in code

Problems with ICD-9-CM to ICD-10-CM / ICD-10-PCS Transition

Adoption and Implementation Problems/Impacted Entities:

As stated in an article by amednews.com titled, *Paperwork Reduction Bill is Caught in Coding Crossfire*, “a bill designed to reduce the hassle factor for physicians in the Medicare program may wind up causing more headaches than it cures.” The ICD-10-CM transition could increase the number of codes physicians have to deal with from the current 4,000 to about 20,000, and would require wholesale changes to computer systems, fee schedules, and contracts. The change was intended for inpatient diagnoses and services, but considerable interest has been expressed to extending the coding system to all sites of services, including physician offices.

As stated in an article titled, *Issues Surrounding the Proposed Implementation of ICD-10*, “In effect, this will be the most significant overhaul of the medical coding system since the advent of computers ... even more costly and involved than Y2K or HIPAA preparedness efforts”. An AMA trustee, Edward L. Langston, M.D. stated, “The physician community is united in its concern that application of the ICD code set in all settings, and not just as currently used, would create chaos, and a dramatic increase in administrative hassles associated with coding for physicians.” The RAND corporation calculates the total cost of conversion to run \$425 million to \$1,150 million in one-time costs, plus another \$5 million to \$40 million a year in lost productivity. The total cost estimates, based on three major categories, can be found in the table below.

Summary of Estimated One-Time Costs and Cumulative Annual Costs			
	Personnel	Cost Estimate (\$ million)	Additional Cost of Sequential Change (\$ million)
Training	Full-time coders	100-150	0-20
	Part-time coders	50-150	
	Code users	25-50	0-10
	Physicians	25-100	
Productivity Losses	Coders	0-150 (a)	
	Physicians	50-250 (a)	
System Changes	Providers	50-200	
	Software Vendors	50-125	
	Payers	100-250	
	CMS (b)	25-125	

(a) Cumulative total of ten years of annual costs (undiscounted).

(b) CMS = Centers for Medicare and Medicaid Services.

March 2004 Study

ICD-10-CM implementation will have impacts of two varieties:

- **Direct Impacts** – Impacts associated with being able to use the new coding scheme
- **Secondary Impacts** – Impacts associated with handling the transition period during the actual transition

Impacted entities would include the following:

- Providers of all types
- Payers of all types
- Clearinghouses
- Software Vendors
- Third Party Administrators
- Self-Insured Employers
- Suppliers (equipment, paper forms)
- Laboratories
- Members (health riders)
- National Organizations (health statistics, etc.)

The impacts would include the following:

- Software upgrades would be needed for in-house applications to accommodate changes
- Purchased applications would need to be revised and rolled out to supported sites
- Electronic transactions would need to incorporate the changes
- Procedures would need to be modified
- Paper forms would need to be re-designed, likely backlogs and payment delays
- Reimbursement Schedules would require review and potentially re-negotiation
- Statistics would be distorted or lost, reports would be impacted, “Short-term Data Fog”
- Treatment policies would need adjustment
- Training
- Transitional Period
- Potential increase for fraud and abuse

Other potential impacts of ICD-10-CM implementation will be caused by DRG and APC reclassifications and groupings, the removal of local codes, migrating to National Drug Codes (NDCs), or other HIPAA-mandated coding changes. For a more detailed list of key constituents, and major functions impacted, please refer to the chart below.

Key Constituents and Major Functions Impacted				
Physicians	Hospitals	Health Plans and HMOs		Government Programs
Electronic Health Records Practice Management Systems Billing Accounts Receivable Net Productivity Loss	ADT Lab Radiology Pharmacology Physician Order Entry Image Management Supplies and Inventory Management Bar Coding Billing	Claims Fraud and Abuse Customer Service Reimbursement EOBs/EOPs Network Contract Actuarial Rating Underwriting	Enrollment Utilization Review Benefits Contracts EDI Editing OCR/Imaging ERA/EFT Reporting Data Warehousing	Medicare (Same as Health Plans, less network/rating) g Medicaid (Same as Health Plans, less network rating)
Specialty Providers	Supplemental Health Industry Organizations		Tools & Decision Support	Major State Government Programs
Veterans Hospitals Federal Hospitals Nursing Homes HHAs	TPAs Workers Comp Auto Liability Self Admin. Employers		Predictive Modeling Health Coaching Personal Financial Tools (e.g. FSA, MSA, HRA, etc.)	University Medical Centers Children's Health Insurance Programs Student Health Programs Department of Corrections Minority and Rural Health Programs State Health Information Databases State Public Health Programs

On the political side there is fear that sharp division over the coding system will jeopardize a bill intended to help providers, insurers, and other parties involved. According to a CMS spokesman, the Bush administration has not yet taken a position on the coding issue or the regulatory reform bill. "We are still waiting for a recommendation from the NCVHS," the spokesman said. As stated in the article from Health Data Management, "Bush I.T. Team Seeks Support, Comments", dated April 14, 2004, the advisory committee expects to present to President Bush its final recommendations to facilitate the adoption of electronic transactions, and electronic medical records information systems in June of 2004.

The final Advisory Committee report is expected to call for a new approach to Health Care Information Technology (IT) with four main elements:

- An electronic health record for each citizen
- Computerized decision support to increase compliance with evidence-based medicine
- Electronic order-entry in inpatient and ambulatory care environments
- Interoperable electronic information interchange

There are other recommendations included in the draft report, including the following:

- A specific study to reassess the costs and benefits of the planned conversion to ICD-10-CM compared with other alternatives, such as SNOMED CT for diagnostic and procedure coding
- Develop a single set of standards for electronic health records systems to be implemented across all federal health programs and shared with the public sector

- Fund research and development, fostering interoperability, without disrupting current clinical workflow, and creating low-cost tools to standardize electronic data
- Research and find a way to identify and link patient data from multiple sources. Include cost estimates and benefits associated with unique patient identifiers, and include existing models that emphasize private, rather than government control of data storage, transmission, and sharing.
- Research actual and perceived legal impediments to sharing electronic health records technologies among physicians, hospitals, laboratories, and pharmacies.
- Federal policies should promote development and use of data access tracking systems, which requires increased R & D funding, including demonstrations

The *National Committee on Vital and Health Statistics*, an HHS advisory panel, is strongly considering moving to ICD-10 as the standard for data transmission under the *Health Insurance Accountability and Portability Act* (HIPAA) and the *Medicare Modernization and Improvement Act of 2003* (MMA). HIPAA included a proposal to migrate to ICD-10 coding use for healthcare delivery and administration. Based on this, and provisions set forth under the MMA of 2003, there is a strong possibility of adoption of a single procedural coding system at some point in the future, either ICD-10-PCS or CPT-5, a slight upgrade from the current CPT-4 system. The CPT-5 would retain the current CPT-4 structure: 5 digits with 2 optional digit modifiers. The measures included in the regulatory reform bills authorize HHS to move forward with the transition under HIPAA, even if the NCVHS disagrees. Furthermore, ICD-10 proponents have lobbied lawmakers to include as part of Medicare reform legislation, instructions to implement ICD-10 in all settings, including physician offices, if NCVHS did not make a recommendation within a year after its enactment. The provision was included in the Medicare reform bill in the House, but not in the Senate. Lawmakers from both chambers are now working to reconcile differences between the bills, including an ICD-10 mandate. A recommendation from the committee, however, would render the legislative provision void.

Overall, physician organizations have lobbied Congress, the Bush Administration, and the committee to prevent the move to ICD-10 codes in physician practices, as the change would create a “massive upheaval” in claims processing. The AMA’s Dr. Langston stated, “Many physicians’ services are not even included in ICD-10, and this system uses language that is confusing and inconsistent with the language generally used by physicians.” It should be noted, however, that part of the AMA backing for the continued use of CPT codes is based on the fact that the AMA developed the CPT codes in 1966, and in agreement with the Association, the government, in 1983, adopted the codes for reporting physician services in Medicare. The AMA generates significant income from CPT code licensing.

All of these actions, among others, represent a major impact to the entire healthcare industry, and create a significantly potential threat to all who oppose the transition. HIPAA regulations require that any change in the accepted coding standards go through the federal rule-making process, including a public comment period. If a decision is made to move forward with the ICD-10 system, it would likely take two or more years before the change is implemented. The following chart below shows the potential scenarios for consideration.

Potential Scenarios for Consideration

Scenario	ICD-9-CM Diagnosis	ICD-9-CM Procedure	CPT-4	ICD-10-CM	ICD-10-PCS	CPT-5
1	X	X	X			
2		X	X	X		
3				X	X	X
4				X	X	
5				X		X

Key:
1. No Change - Retain ICD-9-CM diagnosis and procedures for inpatient coding and ICD-9-CM diagnosis and CPT-4 for outpatient/physician coding
2. Migrate to ICD-10-CM diagnosis coding and retain current systems for procedural coding (ICD-9-CM volume 3 for inpatient and CPT-4 for outpatient/physician coding)
3. Migrate to ICD-10-CM diagnosis coding and ICD-10-PCS for inpatient coding and CPT-5 for outpatient/physician coding
4. Migrate to ICD-10-CM diagnosis coding and selection of ICD-10-PCS as the single procedure system for both inpatient and outpatient/physician coding
5. Migrate to ICD-10-CM diagnosis coding and selection of CPT-5 as the single procedure system for both inpatient and outpatient/physician coding

The AMA and several other providers and organizations argue that the cost of implementation, as well as the extensive training required, would far outweigh the benefits. They argue that there's ample room for expansion under ICD-9-CM because less than half of the possible codes under ICD-9 are currently in use. They feel that we should just discontinue, rename, and use these old codes for new procedures. There is also concern that moving to ICD-10 for inpatient diagnoses and procedures could prompt regulators and lawmakers to adopt ICD-10 for outpatient services as well, thereby doing away with the *Current Procedural Terminology* (CPT) codes as well. The AMA who developed and maintains the CPT coding system, feels that CPTs could serve single coding system concept role, as CPT is already in use in both inpatient and outpatient settings. The CPT system, however, was created and meant to be for physicians, and not reflect other concepts, such as facility needs.

Crosswalk Difficulties:

Changes to coding standards cannot be reflected in crosswalks.

The change from one classification issue to another raises two fundamental problems:

1. Continuation of Statistics (comparability of mortality and morbidity statistics)
2. Recoding of data coded with ICD-9 using ICD-10

Automatic transition of data is possible, but can't be specific, and will inevitably lead to coding transition errors. ICD codes can be coded backwards, but it takes a lot of time, money, and work.

Extensive Financial, Statistical, and other Implementation Costs

There will be extensive and costly modifications to information systems to convert from the ICD-9-CM coding system to the ICD-10-CM coding system. Hospitals currently use a combination of purchased software and in-house developed applications. The various software applications and electronic functions in use will require major modification and conversion. Providers may be forced to have to buy new software altogether, and completely revamp their current systems in use to comply with ICD-10-CM changes. Hospitals will be expected and forced to bear the financial burden associated with any software changes, as well as any possible hardware upgrades. During the transition period, information systems will have to support both ICD-9-CM and ICD-10-CM coding systems, therefore requiring additional data storage space. This burden will be significant for small and rural health care providers.

The software applications that will require modification consists of the following functions:

- Code assignment
- Medical records abstraction
- Aggregate data reporting
- Utilization Management
- Clinical systems
- Billing
- Claim submission
- Groupers
- Other financial functions

Every electronic function requiring an ICD-9-CM code would need to be changed as well.

ICD-9-CM to ICD-10-CM coding changes include the following:

- Software Interfaces
- Field length formats on screens
- Report formats and layouts
- Table structures
- Holding codes
- Expansion of flat files
- Coding edits
- Significant logic changes

The American Hospital Association has asked that all parties involved in the coding transition consider the following implementation issues:

- The AHA supports the migration to the new classification system after testing and funding options are established.
- Medicare, as well as other payers, should be sensitive to the increased regulatory costs resulting from this migration, and should adjust payment accordingly

- The AHA supports a well-defined maintenance and implementation process, a process that should be broad-based, and take into consideration the needs of all users, and one that should be predictable, and take into account the capabilities of the users to adapt to coding changes when they occur.
- The AHA supports the current ICD-9-CM Coordination and Maintenance process, and would support the same process for ICD-10-PCS, as they feel that this process is well-positioned to reach the broadest audience possible.
- The AHA believes that there should be clear, unambiguous instructions, and consistent official coding and reporting guidelines, and these should be readily available and accepted by all payers
- The AHA would like to reaffirm the role of the Cooperating Parties: AHA, AHIMA, CMS, and the NCHS in the development of guidelines and clarification
- The AHA has a long-standing “memorandum of understanding” with the *Department of Health and Human Services* (DHHS) to provide ICD-9-CM coding advice and training, and will continue in this capacity under ICD-10-CM. The AHA is uniquely positioned and ready to take a leadership role in the training of its members: hospitals and health systems providing services across the continuum of care-rehabilitation, skilled nursing, home health and outpatient services, in addition to acute, subacute, and long-term inpatient hospital care. AHA members look to the AHA for guidance and support in coding training and education.
- The AHA’s *Coding Clinic for ICD-9-CM* and the Editorial Advisory Board serve as the nationally-recognized source for coding advice, and have an established process that reduces confusion and provides for clarification and consistent interpretation of coding rules.

There have been a number of attempts by many entities and organizations to estimate the cost and benefits of adopting ICD-10-CM and ICD-10-PCS. The most thorough and rigorous study, according to the AHA, is the study commissioned by the NCVHS and performed by RAND, an independent research group. Based on the RAND analysis, the benefits of adopting ICD-10-CM and ICD-10-PCS will clearly exceed the costs of implementation. As stated earlier, the RAND study concluded that the costs of conversion “are expected to range between \$475 million to \$1.15 billion, plus \$5 to \$40 million a year in lost productivity”. A breakdown of cost impacts and estimates can be shown in the chart below.

Summary of Cost Impacts for Providers and Payers (in Billions)				
Area of Impact	Providers (Physician & Facilities)	Health Plans	Medicaid/Medicare	Cost Ranges
Systems Implementation	\$2.6 - 8.2 Billion	\$.4 - 1.0 Billion	\$.7 - 1.4 Billion	\$3.7 - 10.6 Billion
Training	\$1 - 1.4 Billion	\$.06 - 0.1 Billion	Not Estimated	\$1.1 - 1.5 Billion
Productivity Loss	\$.3 - .4 Billion	Not Estimated	Not Estimated	\$.3 - .4 Billion
Re-Work	\$.3 - .6 Billion		Not Estimated	\$.3 - .6 Billion
Contract Negotiation	\$.1 - .4 Billion		Not Estimated	\$.1 - .4 Billion
Cost Range for Implementation				\$5.5 - 13.5 Billion
Long-Term Loss of Coding Productivity (annual increase in operating costs)				\$.15 - .38 Billion

In addition, RAND also concluded that the benefits in terms of more accurate payment, fewer rejected claims, fewer fraudulent claims, better understanding of new procedures, and improved disease management “are expected to range between \$700 million and \$7.7 billion”. A summary of estimated benefits can be found in the chart below.

Summary of Estimated Benefits over a Ten-Year Period (a)		
Category	Benefit (\$ million)	Largely Due to
More-accurate payment for new procedures	100-1,200	ICD-10-PCS
Fewer rejected claims	200-2,500	both
Fewer fraudulent claims	100-1,000	both
Better understanding of new procedures	100-1,500	ICD-10-PCS
Improved disease management	200-1,500	ICD-10-CM

(a) Benefits are not discounted over time

March 2004

At almost a trillion and a half dollars per year, the U.S. Health Care industry cannot afford to have inadequate information on the health of the population and the care it receives. They feel that the adoption of ICD-10-CM and ICD-10-PCS will better position health care providers to improve the quality of health care data, which is essential to improving the quality of patient care.

Timeline/Summary of ICD-10-CM and ICD-10-PCS Development

The clinical modification of ICD-9 (ICD-9-CM, Volumes 1 and 2) was adopted in the United States in 1979 for morbidity applications. This was around the same time that ICD-9 (published by WHO) was adopted for mortality data. ICD-9-CM's purpose and use is to classify diseases and health conditions on health care claims, and is the basis for prospective payment to hospitals, other health care facilities, and health care providers.

The WHO, when creating ICD-9, did NOT create a procedure coding system to go along with it. Because of this, the U.S. developed their own, ICD-9-CM, Volume 3, for inpatient hospital services. Since the creation and implementation of the ICD-9-CM, Volume 3 in 1979, procedures performed have been coded for hospital statistics and on hospital claims using this system. *Current Procedural Terminology* (CPT-4), developed and maintained by the American Medical Association (AMA), is used in the United States to code professional services on claims of physicians and other non-inpatient providers. Prior to the implementation of the inpatient *Prospective Payment System* (PPS) in 1983, all providers coded their diagnoses with ICD-9-CM, Volumes 1 and 2. After that time, ICD-9-CM, Volumes 1, 2, and 3 were used as the basis for assigning cases to the DRGs, and all diagnostic and procedural information were captured using ICD-9-CM.

Radical changes and advances in health care since the implementation of ICD-9-CM have made it necessary to revise, update, and even revamp the system in some areas, particularly the procedure code in the system. Providers wanted to update the diagnosis portion as well, however, to be able to obtain greater clinical detail. Because of this need, an annual updating process was established through the ICD-9-CM Coordination and Maintenance Committee. This process does allow some addition of new conditions, procedures, and expansion for greater detail, but it is still based on a 30-year-old classification system.

ICD-10-CM Development Timeline

Originally designed to classify causes of death, the scope of the ICD was extended in 1948 in the Sixth Revision to include non-fatal diseases. The application of morbidity statistics classifications have expanded with each revision. Despite this, the United States, as well as numerous other countries, find it necessary to continue to develop clinical modifications of the ICD to meet the needs of their respective healthcare systems that may require more detailed clinical information from hospital, clinic, and physician records.

Year	Event
1993	The Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems was released by the WHO
1994	NCHS hired the Center for Health Policy Studies (CHPS) to evaluate ICD-10 for morbidity purposes in the United States. The Technical Advisory Panel (TAP) conducted a thorough evaluation of ICD-10, and strongly recommended that NCHS proceed with implementation of a revised version of ICD-10-CM
1995-1996	ICD-10-CM enhancements were undertaken by NCHS
1997	The Tabular List draft and preliminary crosswalk between ICD-9-CM and ICD-10-CM were commented and reviewed, similar to the LCD process, and changes were made on these recommendations
1999	ICD-10-CM is implemented in the U.S. for mortality reporting. Final death statistics and leading causes of death for data years 1999 and 2000, using ICD-10, have been published and made available on the NCHS website.
2000-2001	Development of ICD-10-CM continued with changes based on responses during Open-Comment period, as well as input from physician specialty groups.
2002	A pre-released version of ICD-10-CM was posted on the NCHS website. Some of the modifications featured in ICD-10-CM were incorporated into other CM's implemented in Australia (ICD-1-AM) and Canada (ICD-1-CA). NCHS will make available the following transition tools: database version, crosswalk, educational materials, official coding guidelines, and comparability study/ratios for trend analyses. NCHS will conduct a comparability study for mortality, similar to what they did for morbidity.
2003	An updated pre-release draft of ICD-10-CM is posted on the NCHS website at: http://cdc.gov/hchs/icd9.htm . The American Health Information Management Association (AHIMA) and the American Hospital Association (AHA) join to conduct pilot test of ICD-10-CM, which proved ICD-10-CM to be an improvement over ICD-9-CM, and ICD-10-CM is more applicable to non-hospital settings than ICD-9-CM.
2004 - ??	Studies and reviews will continue to be made. The government, providers, and other healthcare organizations will continue to battle about whether or not implementation of ICD-10-CM is wanted, or even feasible. The major concerns are the costs involved, political and legal forces, and the havoc in the United States Health Care System the actual transition to a more complex system will cause, especially during the transition phase.

ICD-10-PCS Development Timeline

The *Centers for Medicare and Medicaid Services (CMS)*, in order to address a number of limitations with the ICD-9-CM current procedure classifications, developed a replacement to ICD-9-CM, and is hoping that the new system, ICD-10-PCS will correct the previous problems created by ICD-9-CM: inconsistent identification of procedure approaches, outdated coding system that doesn't account for technological advances and improvements, etc.

Year	Event
1990	The AMA sponsored a study to investigate the costs and benefits a single system for physician payment would create. Coopers and Lybrand compared two alternatives: 1.) a major restructuring of CPT to serve uses beyond physician offices; and 2.) a replacement of both Volume 3 of ICD-9-CM and CPT.
1994	CMS (HCFA at the time) announced plans to initiate a contract to develop a new procedure coding system for use with hospital inpatients to replace ICD-9-CM, Volume 3, the new system referred to as ICD-10-PCS
1995	CMS hired 3M HIS to develop the procedure classification to replace Volume 3 of ICD-9-CM (hospital inpatient procedures), one based on an alphanumeric 7-digits meant to improve the accuracy and efficiency of coding, to reduce training efforts, to improve communication with physicians, and to be compatible with the current billing infrastructure. ICD-10-PCS was developed using an open process. It was reviewed and presented by CMS online.
1996	A training program was developed, and informal testing and training were conducted.
1997	<i>Clinical Data Abstraction Centers (CDACs)</i> conducted formal testing of ICD-10-PCS
1998	Additional formal testing of ICD-10-PCS was conducted. CMS also tested ICD-10-PCS on lists of problem cases from <i>Editorial Advisory Board (EAB)</i> for Coding Clinic for ICD-9-CM submitted by AHA
1999-2004	ICD-10-PCS is updated every October 1 to accommodate changes made to ICD-9-CM, Volume 3.

Review

As stated previously, there are currently three major provider coding systems in use in the United States Health Care System, for both inpatient and outpatient procedures: 1.) ICD-9-CM diagnosis, 2.) ICD-10-CM procedure, and 3.) CPT codes, ambulatory and physician services.

CMS and several other United States health care providers are currently in the process of transitioning from the inefficient, outdated ICD-9-CM coding system to the newly-created ICD-10-CM coding system. Coding inconsistencies, political and provider disputes, excessive costs, and other implementation issues are the main reason why we haven't yet converted over to ICD-10-CM. These factors will have to be ironed out before implementation can take place.

Overall, a total of 138 countries have adopted ICD-10 for mortality data purposes, and 99 countries have adopted it for morbidity. The United States has also already implemented a portion of ICD-10 for mortality data, effective January 1, 1999, but we are still waiting to convert morbidity, diagnosis, and procedure coding over to the new system, ICD-10-CM. It is expected, however, that ICD-10-CM, the clinical modification of ICD-10 that the United States has created, as it currently stands, will not officially become the national standard until October 1, 2007, if even at all. If and when implemented, it will mainly be based on standards created under the AS provisions, as part of HIPAA, created in 1996, as well as provisions contained in the MMA of 2003.

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