

ICD-10-CM¹ – A Close Look²

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¹ *International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM)* (Draft version, June 2003)

² Updated 8-12-2004. See Footnotes 3 [**insert in bold type**], 14, 15, 16, and 29

Introduction: Why This “Look”?

This article began simply as an effort to determine the number of codes in *ICD-10-CM*. The reported increase in the number has been cited as evidence of better response to the needs of the healthcare system, especially for codes giving greater diagnosis detail.³

Inquiries asking for detailed counts proved unsatisfactory, so the author decided to count the codes in the actual document. In January 2004 the latest draft of *ICD-10-CM*, that of June 2003,⁴ was downloaded from the CDC web site – the *Tabular List* (1775 pages), the *Alphabetic Index to Diseases and Injuries* (1560 pages),⁵ the *Official Guidelines* (71 pages),⁶ and the “Preface” (2 pages). The computer provided the easiest way to look at the Alphabetic Index, but the remaining three documents were printed out for ease of reference and for making comparisons among pages and documents.

In view of the effort required to get a real look at *ICD-10-CM*, it is unlikely that many individuals have had a very clear picture of it; their support or opposition may have been based only on statements about the code. So it seemed that it might be useful to record some of the author’s observations in addition to the code count.⁷

³ Other arguments for “updating” from *ICD-9-CM* are to bring the coding system “up to date” and to keep in step with the other nations in the World Health Organization (WHO).

⁴ The CDC web site (<http://www.cdc.gov/nchs/about/otheract/icd9/abticd10.htm>) states: “An updated draft version of *ICD-10-CM* from June 2003 is now available for public viewing. However, the codes in *ICD-10-CM* are not currently valid for any purpose or uses. Testing of *ICD-10-CM* will occur using this pre-release version. It is anticipated that updates to this draft will occur prior to implementation of *ICD-10-CM*.” [an update is now reported to be planned for early 2005, along with updated guidelines] A fifth document, “Table of Drugs and Chemicals,” is also available at the site. The *Official Guidelines* state: “These conventions and guidelines apply to the proper use of *ICD-10-CM* for acute short-term and long-term hospital inpatient and physician office and other outpatient settings.”

⁵ An *Alphabetic Index to External Causes of Injury* will also be provided as part of *ICD-10-CM*. Within the *Index of Diseases and Injury* there will also be a Neoplasm Table.

⁶ Title: *ICD-10-CM Official Guidelines For Coding and Reporting for Acute Short-term and Long-term Hospital Inpatient and Physician Office and other Outpatient Encounters*

⁷ This article, the result, may be considered a supplement – updating – of the information previously published by the authors in *The Endangered Medical Record: Ensuring Its Integrity in the Age of Informatics* (Tringa Press, 2000). The U.S. National Center for Health Statistics had placed a previous draft, that of 1997, on the web site, and this had been the source of information on *ICD-10-CM* cited in that publication. Reportedly there were significant changes in the 2003 draft, so it was essential to study the latest version.

It naturally flowed to examine the reasons for possible implementation of *ICD-10-CM*, and to examine their validity in light of the facts.

Why the Interest in *ICD-10-CM*?

The interest in *ICD-10-CM* stems from the possibility that it may be substituted for *ICD-9-CM* for diagnosis input into our Medical Record Health Information System (MRHIS)⁸, the system which (1) places diagnosis codes in the patient's medical record where they inform the physician and other caregivers in carrying out the patient's care, (2) uses the codes as input for the billing system, and (3) uses the codes in compiling statistics about health and health care.

Today, *ICD-10-CM* exists only as a draft, available at the National Center for Health Statistics (NCHS) web site under the Centers for Disease Control (CDC). Thus it is not necessarily the final version. But much effort has gone into its construction, and it is the only basis we have to forecast the future of coding if we take this path for the MRHIS.

Part I: A Detailed Examination of the New Codes

How Many Codes Are There?

The first observation is that *ICD-10-CM*'s code count, 67,563, is much higher than that for its predecessor, *ICD-9-CM*, the classification now in use. *ICD-9-CM*'s count is usually given as about 13,000. On the face of it, it would appear that *ICD-10-CM* would handily meet the demand for greater specificity, but a true comparison on that score is very hard to make. A number of factors must be taken into account, some of which are discussed after the table which follows.

⁸ Addendum A to this review discusses MRHIS in some detail.

Code Count, <i>ICD-10-CM</i> Tabular List Draft June 2003			
1	2	3	4
Chapter ⁹	Code ¹ Count	Codes Added by 7 th Character Extension ¹¹	Chapter Total
1 Certain infectious and parasitic diseases (A00-B99)	1046	0	1046
2 Neoplasms (C00-D-48)	1423	0	1423
3 Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50-D-89)	213	0	213
4 Endocrine, nutritional and metabolic diseases (E00-E90)	663	0	663
5 Mental and behavioral disorders (F01-F-99)	718	0	718
6 Diseases of the nervous system (G-00-G99)	435	0	435
7 Diseases of the eye and adnexa (G00-H59)	2173	0	2173
8 Diseases of the ear and mastoid process (H60-H95)	649	0	649
9 Diseases of the circulatory system (I00-I99)	1129	0	1129
10 Diseases of the respiratory system ((J00-J99)	278	0	278
11 Diseases of the digestive system (K00-K93)	583	0	583
12 Diseases of the skin and subcutaneous tissue (L00-L99)	659	0	659

⁹ Greater detail about Chapter content is found in Addendum B to this review, which shows the code “blocks” and their labels.

¹⁰ Codes counted are those in bold face type in the Draft *ICD-10-CM Tabular List of Diseases and Operations* (dated June 2003) taken from the CDC web site.

¹¹ *ICD-10-CM Official Guidelines* states that the use of the 7th character extensions (modifiers) is required.

13	Diseases of the musculoskeletal system and connective tissue (M00-M99)	5199	1124	6323
14	Diseases of the genitourinary system (N00-N99)	728	0	728
15	Pregnancy, childbirth and the puerperium (O00-O99)	1114	80	1194
16	Certain conditions originating in the perinatal period (P00-P96)	382	0	382
17	Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	759	0	759
18	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	493	60	553
19	Injury, poisoning and certain other consequences of external causes (S00-T99)	9626	30445	40071
20	External causes of morbidity (V01-Y98)	2539	4158	6697
21	Factors influencing health status and contact with health services (Z00-Z99)	887	0	887
TOTALS		31696	35867	67563

How Are the Codes Constructed?

“Basic” Codes

In the Tabular List of *ICD-10-CM* all codes which are to be used are displayed in **bold** type. These are the codes counted in column 2 of the table, and which total 31,696. Characteristics of the codes are given in the Official Guidelines:

“The Tabular List contains categories, subcategories and codes. Each character for all categories, subcategories and codes may be either a letter or a number. All categories are 3 characters. The first character of a category is a letter. The second and third characters are numbers. A 3 character category that has no further subdivision is equivalent to a code. Subcategories are either 4 or 5 characters. Subcategory characters may be either letters or numbers. Codes are either 4, 5 or 6 characters. That is, each level of subdivision after a category is a subcategory. The final level of subdivision is a code. The final character in a code may be either a letter or a number.”¹²

¹² Indented quotations and illustrations, unless otherwise noted, are from one or another of the documents listed in the Introduction, which were downloaded from the CDC web site.

*ICD-10*¹³ has used all the letters in the alphabet, including “I” and “O,” so, of course, *ICD-10-CM* also has them. This is contrary to standard coding technique which, in an alphanumeric code, avoids these letters in order to avoid confusion with the numerals “1” and “0.” Not only does this occur in the first position in the code, but in the 7th digit extensions where a lower-case “l” may be mistaken for the numeral “1.” (See the illustration of **Code S82.121l** on page 9.)

7th Digit (Character) Extensions

For a number of the basic codes, modifiers called “7th digit extensions” are provided, with the following stipulation in the *ICD-10-CM Official Guidelines*:

“Certain categories have applicable 7th character extensions. The extension is required for all codes within the category, or as the notes in the tabular instruct. The extension must always be the 7th character in the data field. If a code is not a full 6 characters, a dummy place holder x must be used to fill in the empty characters when a 7th character extension is required.”

Thus the additional 35,867 modified codes, counted in column 3, must be added to the count, giving the total of 67,563.

With the exception of those in Chapter 15, Pregnancy..., where the codes are numerical indicating which fetus was involved in the complication, the 7th digit extension codes are lower-case letters.

Extensions in Chapter 18, Symptoms... define the degree of coma using the Glasgow coma scale.

The huge majority of the extensions are used in Chapter 19, Injuries..., with Chapter 20, External causes..., coming in second. For many of the injuries, three extension codes are provided: a = initial encounter, e = subsequent encounter, and q = sequelae. There is no solution offered for the instance where the initial encounter was at one institution while the subsequent encounter for the same problem was at another. Other codes have different extensions.

The greatest use of the extensions seems to be with categories like **S82 Fracture of lower leg, including ankle**, for which the following sixteen (16) 7th character extensions are provided:

- a initial encounter for closed fracture
- b initial encounter for open fracture type I or II
- initial encounter for open fracture NOS
- c initial encounter for open fracture type IIIA, IIIB, or IIIC
- d subsequent encounter for closed fracture with routine healing
- e subsequent encounter for open fracture type I or II with routine healing

¹³ *International Statistical Classification of Diseases and Health Related Problems, 10th Revision (ICD-10)*, World Health Organization (WHO), Geneva, 1992. *ICD-10-CM* is the U.S. Clinical Modification of *ICD-10*, and must retain its code structure.

- f subsequent encounter for open fracture type IIIA, IIIB, or IIIC with routine healing
- g subsequent encounter for closed fracture with delayed healing
- h subsequent encounter for fracture type I or II with delayed healing
- l subsequent encounter for open fracture type IIIA, IIIB, or IIIC with delayed healing
- j subsequent encounter for closed fracture with nonunion
- k subsequent encounter for open fracture type I or II with nonunion
- l subsequent encounter for open fracture type IIIA, IIIB, or IIIC with nonunion
- m subsequent encounter for closed fracture with malunion
- n subsequent encounter for open fracture type I or II with malunion
- o subsequent encounter for open fracture type III, IIIB, or IIIC with malunion
- p sequela

Thus **Code S82**, which has 203 subdivisions, results in 3,248 unique codes when each is offered the 16 extensions (the table shows only 3045 in column 3, since 203 of them have already been included in column 2).

Place Holders

In some sections of the classification, room has been provided for additional categories by inserting an “x” into the present code as a “place holder,” reserved for possible future use in expanding the classification. Coders are not to use these “x” positions for any other purpose.

“The 5th character x at many of the codes in categories T36-T65 is a dummy place holder to allow for possible future expansion. The x must remain in the code and no other character should be used in its place.”

Some confusion with this use of place holder “x’s” is predicted because of the competing “padding” use of the letter “x.” As explained in the Guidelines,

“Certain categories have applicable 7th character extensions. The extension is required for all codes within the category, or as the notes in the tabular instruct. The extension must always be the 7th character in the data field. If a code is not a full 6 characters, a dummy place holder x must be used to fill in the empty characters when a 7th character extension is required...”

“For codes with applicable extensions the extension is required at the 7th character for reporting purposes.”

Combination Codes

In the 1997 Draft of *ICD-10-CM*, combination codes were used extensively, and were not limited as to the numbers of diagnoses which could make up a single combination. In some instances, the single combination code contained four or five diagnoses. The June 2003 Draft retains combination codes, but states

“A combination code is a single code used to classify: two diagnoses, or a diagnosis with an associated sign or symptom, or a diagnosis with an associated complication.”

A further instruction is

“Assign only the combination code when that code fully identifies the diagnostic conditions involved or when the Index so directs. Multiple codes should not be used when the classification provides a combination code that clearly identifies all of the

elements documented in the diagnosis. When the combination code lacks the necessary specificity to fully describe all elements of a diagnosis, an additional code(s) may be used.”

To determine the number of such codes would be a very difficult process. Combination codes present serious difficulties both in coding and retrieving information. To code, the coder must remember that, for a given diagnosis, there is a stand-alone code, but if there is also a combination code, the latter must be used. To retrieve each diagnosis in a combination code, one must remember to look up the diagnosis alone and in combination.

Injury Codes

One significant change from *ICD-9-CM* is that the axis of the classification has been changed from the type of injury in *ICD-9-CM*, e.g., fracture, dislocation..., to the anatomical site, e.g., head, neck, thorax... For example, *ICD-9-CM* has “fracture of the acetabulum, closed.”, whereas *ICD-10-CM* has “Fracture of the acetabulum” as a type of injury of the “abdomen, lower back, and pelvis.

As seen in the table, there are more than six times more codes provided for injuries than for any other category, with or without counting the 7th digit extensions. This is largely because the categories are smaller, offering, in some instances, exquisite detail. The following excerpt from the Guidelines suggests that there are significant implications for form and database design. Following this prescription would, almost certainly, require more diagnosis fields – if only to accommodate injuries – than does coding with *ICD-9-CM*.

“The injury codes are very specific, but provide a great deal of detail. Each injury code describes a single component of an injury. Assign a separate code for each component of an injury. As many codes as are needed to fully describe the injury should be used. At each category, there are instructional notes that indicate which other codes may be required to fully describe an injury. For example, at all open wound categories there is an instructional note to code any associated wound infection.”

Laterality

For bilateral organs, this draft of *ICD-10-CM* usually offers subcategories by which to record “right,” “left,” “both,” and/or “not specified.” This, of course, accounts for a great many of the codes in the volume. A similar approach is taken in the case of cerebral dominance.

Do the Codes Provide Greater Detail?

A major argument advanced for switching from *ICD-9-CM* to *ICD-10-CM* is that greater detail is needed and that *ICD-10-CM* provides it. Presumably this could have the simple answer – that because 10-CM has more codes, it must have more detail. In addition to the considerations above, there are at least two additional problems:

First: The two classifications do not cover the same territory.

Addendum C compares the Chapters in *ICD-9* and *ICD-10-CM* and their titles. Since both volumes are descendants of the WHO's classifications, and the category contents simply amplify those of WHO, the warning at the WHO web site is pertinent:

“Q: How can I translate between *ICD-10* and *ICD-9*?

“A: It is not possible to convert *ICD-9* data sets into *ICD-10* data sets or vice versa.¹⁴”

Second: We do not know exactly what is meant by “greater detail.”

Does greater detail mean more codes with one-to-one correspondence with individual diagnoses, i.e., more single-diagnosis categories?

One is immediately up against the problem of synonyms. For example, **Code D50.1 Sideropenic dysphagia**, has Kelly-Paterson Syndrome and Plummer-Vinson syndrome listed. These turn out to be synonyms (and Stedman's dictionary shows 4 additional synonyms). Apparently this is a single-diagnosis category, but to make sure required consulting the dictionary.

Does it mean more entries in the Index?

Comparing the numbers of entries in the roughly 1,000 pages in the printed index for *ICD-9-CM* with those in the 1,560 pages of the June 2003 draft of *ICD-10-CM* would be laborious and futile – the indexing process may have differed, and 10-CM covers additional territory, e.g., in Chapter 21, “Factors influencing health status and contact with health services.”

Does it mean more codes with greater detail, e.g., as to site and/or severity and other information, as in Chapter 19, “Injury, poisoning and certain other consequences of external causes”? An illustration follows. Recall that the 7th character, lower-case letter “l” in the example here, is required.

Code S82 Fracture of lower leg, including ankle, has the following subcode, which is required in entirety:

Code S82.121l Displaced fracture of lateral condyle of right tibia, subsequent encounter for open fracture type IIIA, IIIB, or IIIC with nonunion.

Does it mean that a greater number of things that bring persons into the healthcare system can be coded in some fashion?

By definition, a classification is able to place in its pigeonholes every member of its universe (in this case, diagnoses), and for this purpose *ICD* and its clinical modifications always have had “wastebasket categories,” such as “other diseases” or “other factors.”

¹⁴ This flat statement from <http://www3.who.int/whosis/faqs/faqs.cfm> clearly rules out satisfactory conversion tables or crosswalks between *ICD-9-CM* and *ICD-10-CM*. This, in turn means that one cannot safely “plug in” *ICD-10-CM* categories into the DRG system – there could be disastrous financial consequences for both payers and providers.

This time there was some universe expansion in Chapter 21, “Factors influencing health status and contact with health services,” which does contain categories that were not in its predecessor, Codes V01-V82, “Supplementary classification of factors influencing...,” and there may have been similar expansions in “External causes.”

ICD-10-CM has many codes which combine information, a feature which makes answering this question very difficult. See the comments under “combination codes.”

Many of the codes are subdivided or modified in order to provide sites, for example, with the subdivisions identical for a number of codes. In a sense, this is an artificial increase in the code count and in specificity, and is contrary to the relational database principle, widely used in other data processing applications.

In a relational system each kind of information would have its own code, and the diagnosis example (above) for the fracture would be constructed for the individual patient by putting together codes for (1) fracture, (2) site, (3) type, (4) type of encounter, (5) state of healing, and so on. The “code book” –whether manual or electronic – would be far simpler, and retrieval would be immensely more efficient.

Are There Diagnoses Without Their Own Codes?

Yes. There are many such diagnoses. How many, it is not possible to tell because there is no “complete list” of diagnoses – and there are new diagnoses every day. Addendum D is a sampling from each of the Chapters of the draft. We must assume that to some branch of medicine or health care, the loss of detail shown (and many, many others, for most Chapters) would be a serious deficiency.

The variability of detail among the chapters reflects, apparently, the attention given to the classification by representatives of the various branches of medicine. Chapters with few multiple-diagnosis codes and great specificity, such as Chapter 7, Diseases of the eye, reflect branches of medicine which have had special classification “champions.”

Concerned clinicians and others are urged to examine the full June 2003 Draft of *ICD-10-CM* (available as noted in Footnote 2) for the ability of *ICD-10-CM* to respond to their special areas of interest and expertise.

Notes on Specific Topics

Chapter 20 – External Causes

There is some ambiguity about whether or not, or in what applications, external cause codes are required.

From the guidelines pertaining to Chapter 19, Injuries, note the use of “must” and “should”:

“19.2.6 Use of an external cause code (Chapter 20) with an injury code.

When an injury code is assigned to a medical record, a corresponding external cause code must also be assigned to identify the cause of the injury.

Additionally, an activity code (Y93) and a place of occurrence code (Y92) should also be assigned. Place of occurrence codes are not required for adverse effects, poisonings and toxic effects.”

The guidelines pertaining to Chapter 20, External Causes, however, are more permissive:

“An external cause code may be used with any code in the classification that is a health condition due to an external cause. Though they are most applicable to injuries, they are also valid for use with such things as infections or diseases due to an external source, and other health conditions, such as a heart attack, that occurs during strenuous physical activity. They are for use in any health care setting.

“Assign as many external cause codes as necessary to fully explain each cause....”

The phrase “assign as many...codes as necessary” has implications for the design of forms and data bases.

If the Chapter 19 instruction is enforced, a proper code for any injury would include the appropriate code from Chapter 20. Thus the number of possible codes would be the product of the number of injury codes (40,071 from Table 1) times the number of applicable external cause codes (the possible total being the 6,697 from Table 1) – millions of codes – a coding nightmare.

HIV

In view of the history of coping with AIDS and HIV coding with *ICD-9-CM*, the following note from the Guidelines, instructing how to code HIV infection, is of interest:

“1.1 Human immunodeficiency virus [HIV] disease The *ICD-10-CM* has four codes and one subcategory to classify the HIV virus:

“Code B20, Human immunodeficiency virus [HIV] disease

“Code Z21, Asymptomatic human immunodeficiency virus [HIV] infection status

“Code R75, Inconclusive laboratory evidence of human immunodeficiency virus [HIV]

“Code Z20.6, Exposure to HIV virus Subcategory O98.7, HIV complicating pregnancy, childbirth, and the puerperium.”

SARS

In 2003, when SARS appeared, official directives placed it in any one of several “wastebasket” categories (for example, “other viral pneumonia”), from which it could never be specifically retrieved. Until the October 2003 coding list was issued, SARS simply did not exist in our coding system.

Of course, SARS is not in this draft of the classification. But *ICD-10-CM* would be managed in exactly the same way as has *ICD-9-CM*, i.e.,

“The *ICD-10-CM* is in the public domain, however, neither categories nor code titles may be altered in any way, except through the Coordination and Maintenance process, the annual updating procedure overseen jointly by NCHS and the Centers for Medicare and Medicaid Services (CMS).”

This means that *ICD-10-CM* offers no relief for the problem and the valid complaint that the coding system has no way to respond quickly to “new” things. Only an improved Medical Record Health Information System (MRHIS) which included (1) the addition to the medical record of a standard recording of individual diagnoses, and (2) a healthcare industry service which would enable the instant coding of new things rather than placing them in “wastebaskets” would solve this problem.

Avian Flu

Avian flu, much in the news in early 2004, is reportedly caused by a variant of the Type A influenza virus. Efforts will be made to keep track of what it is feared will become a world-wide pandemic. The epidemiologic information will come from case reporting in the public health system. Any retrospective analysis depending on information from medical records would be impossible under the coding provided by *ICD-10-CM* in its 2003 Draft – or any foreseeable version of the “ICD system.” Only three codes are offered in the current draft:

J10.89	Influenza with other manifestations
J10.1	Influenza with respiratory manifestations
J10.81	Influenzal gastroenteritis

This illustrates two things: (1) the futility of trying to predict future diagnoses, and (2) the inability of the current system to cope with new diagnoses. Avian flu would be up against the same problem as was SARS.

What About Codes for Procedures?

ICD-10-CM, unlike *ICD-9-CM*, has no procedure coding system. The Center for Medicare and Medicaid Services (CMS)¹⁵ contracted with the 3M Corporation to design such a system, which it has done. A copy is available for purchase from 3M.

The new system has been titled *ICD-10 Procedure Coding System (ICD-10-PCS)* although it has no conceptual relationship with *ICD-10-CM* or correlation with its structure. For example, its divisions do not correspond in any way with Chapters of *ICD-10-CM*. The only explanation for putting *ICD-10* into the title is that it was intended to be released at the same time, and to replace Volume 3, Procedures, of *ICD-9-CM*.

ICD-10-PCS is an exquisitely detailed modular code system which offers something approximating 300,000 procedure codes (although it could be expanded logically to uniquely code billions of different procedures). Discussion of its schema is available elsewhere.¹⁶

It seems doubtful whether one really needs the 27 “kinds” of appendectomies it offers, or that the billing system would like to have to cope with 300,000 different alphanumeric procedure codes in the payment formulas. Almost certainly, a grouping of procedure codes from *ICD-10-PCS* would be necessary for that purpose – and different groupings would be required for clinical purposes.

It is this reviewer’s position that the issue of procedure coding should be considered on its own merits, not tied to that of diagnosis coding. There appear to be several other options to be considered:

- 1) Continue with Volume 3 of *ICD-9-CM*, whose codes are already integrated in the DRG system,
- 2) Evaluate *SNOMED CT*¹⁷ (now placed in the public domain by the National Library of Medicine) for its suitability for this purpose, if a change in the procedure code for billing is a real necessity.
- 3) Consider *CPT*¹⁸ and *HCPCS*¹⁹ for inpatient use.

¹⁵ In the earlier version of this paper, the contract was erroneously attributed to the U. S. National Center for Health Statistics (NCHS).

¹⁶ Our paper “ICD-10 Procedure Coding System (ICD-10-PCS) is available at <http://www.tringa.com/icd10-pc.pdf> .

¹⁷ *Systematized Nomenclature of Medicine, Clinical Terms*, College of American Pathologists.

¹⁸ *Current Procedural Terminology*, American Medical Association (annually)

¹⁹ *Healthcare Financing Administration Common Procedure Coding System*.

Part II: A Look at the Pros and Cons of Switching to *ICD-10-CM*

Is the U.S. Out of Step with Other Nations?

Some argue that a switch to *ICD-10-CM* is mandatory and urgent to keep the U.S. in step with the rest of the world. This is not true.

ICD-10-CM is the United States' clinical modification (CM) of the World Health Organization's (WHO) *International Classification of Diseases, 10th Revision (ICD-10)*. *ICD-10-CM* is a U.S. product.

In its participation in WHO, the United States agrees to exchange mortality statistics using the current version of ICD, now *ICD-10*. We have already complied with that agreement (we began using *ICD-10* for mortality reporting in 1999). (Some nations began to use *ICD-10* for this purpose in 1995; others were not scheduled until 2003 or later.) Information for mortality statistics comes from death certificates, not from hospital or other health care records.

Many nations also use ICD for morbidity statistics, and its implementation for that purpose usually occurs later than for mortality. In addition, countries including the United States, Canada, and Australia have each made their own unique clinical modifications. As a result, exchange of morbidity data could occur only at the basic level of ICD, that is, after having collapsed the national modifications back into the basic codes of *ICD-10* itself.

In fact, because the participating countries vary greatly in the diagnostic detail of their morbidity data, WHO provides a special list of broad categories for morbidity statistics. This list in *ICD-10*, entitled "Tabulation List for Morbidity," collects *ICD-10's* roughly 13,000 codes into less than 300 categories.

Is There a Downside to Switching?

Several negative effects can be immediately identified with converting our coding system from *ICD-9-CM* to *ICD-10-CM*. The most prominently discussed is the financial cost, estimated in a report prepared for the Blue Cross-Blue Shield Association (BC/BSA) to be in the range of \$14 billion spread throughout the healthcare system. (That report is available from BC/BSA.)

But perhaps more significant to both providers and payers is the necessity to cope with the impact of the coding change on DRGs – as noted above the new diagnosis categories do not simply re-number the old, and thus they cannot simply replace the old categories in the formulas. The payment system could be seriously disrupted.

Other problems include:

Decline in data quality: There are bound to be more errors when starting a new coding system. Largely ignored has been the confusion during the early transition period when the

payment system, at least, will require use of both systems simultaneously until all claims are settled – for patients billed for care given before the switch and for patients treated after the switch. And arguments that *ICD-10-CM* will be prone to fewer errors when familiarity is achieved are far from convincing.

Crippling of longitudinal (trend) studies: To repeat the quotation above from the World Health Organization

“Q: How can I translate between *ICD-10* and *ICD-9*?”

“A: It is not possible to convert *ICD-9* data sets into *ICD-10* data sets or vice versa.”

This means that longitudinal studies which cross the date on which the switch was made may be crippled or even have to be abandoned. This is not a trivial matter. The United States switched from *ICD-9* to *ICD-10* for mortality statistics with 1999 data, knowing of this problem. Studies known as “bridge-coding” had been done by NCHS in an attempt to estimate the statistical impact of the switch, and perhaps be able to correct for changes. In spite of this preparation, the HIV mortality rate in Florida rose in the 1999 federal statistics by 6.7%, reversing a steady downward trend in that state. Recalculating for 1999 using the previous (1998) method showed that the downward trend would actually have continued at 6.6%, given the previous statistical treatment.²⁰

Perpetuation of primitive data management technology: The use of “the ICD series” for diagnosis coding originated in the mid-1950s as an important forward step in information technology at that time. But it consisted essentially in the computerization of what was being done manually. It is time to evaluate the information needs in the MRHIS through the eyes of modern methods of data management, rather than simply replacing one generation of an obsolete system with a later model. Implementation of *ICD-10-CM* prior to this step would divert much money and energy from preparing to make basic fixes in the system.

²⁰ Grigg, et al “Research Letter: Coding Changes and Apparent HIV/AIDS Mortality Trends in Florida, 1999,,” JAMA, Vol 286, No 15, page 1839, Oct. 17, 2001.

How Urgent is Implementation?

Implementation of *ICD-10-CM* has been termed “urgent” by several influential bodies, including the American Health Information Management Association (AHIMA) and the American Hospital Association (AHA). Two main reasons have been cited:

1. Getting Us “Up to Date”

Medical science has advanced rapidly over the last 30 years. It is argued that *ICD-10-CM* will get us up to date with modern medicine. Dan Rode, spokesman for AHIMA, writes in the January 2004 issue of the *Journal of AHIMA*²¹

“...a 30-year-old classification system does not represent 21st-century medicine...”

In evaluating this contention, one should remember that *ICD-9-CM* is simply our modification of the 1975 *ICD-9* (from the World Health Organization (WHO)) and that *ICD-10-CM* is the corresponding modification of *ICD-10*, also from WHO. *ICD-10*, although copyrighted in 1992, was “put to bed” in 1989.

The arrangement between the U.S. and WHO under which the new clinical modification was written requires, as did *ICD-9-CM*, that all modifications are made in such a manner that they are collapsible back into *ICD-10* itself. That means that in the overall framework of the classification, the U.S. is constrained by the organization scheme supplied by WHO – we can only provide more detail by subdividing the original categories.

Thus *ICD-10-CM* really reflects 1989 thinking as to diagnoses and how they should be classified, rather than “21st century” medicine. The modification is, at best, a compromise, and modifies thinking which is already 15 years old.

2. Enabling the NHII and EMR

The other main argument is that implementation of *ICD-10-CM* is necessary to advance our national health information technology. Dan Rode writes,

“...conversion to the *ICD-10-CM* and *ICD-10-CPS* systems is key in the nation’s move toward a national health information infrastructure (NHII) and a standard electronic health record...Any delay in such adoption could mean significantly higher costs for eventual implementation—and we’ll be no closer to an NHII or an EHR.”

There is no merit in this argument. Far more serious problems exist in the coding of diagnoses and procedures than whether they are trapped in 1975 or 1989 categories. Either way, we continue to lack the diagnostic detail required for patient care, research, and statistics.

The real problems with regard to diagnoses and procedures that adoption of the electronic medical record (EMR; “EHR” above) faces are:

²¹ Rode, Dan. “Taking the Next Step Forward for ICD-10,” *Journal of AHIMA*, 75, no. 1 (January 2004), 14-15.

- 1 The physician balks because the category codes and labels provided by *ICD-9-CM* (and *ICD-10-CM* would be the same) rarely allow him or her to record the exact diagnoses the patient presents – information which is needed for safe and high quality patient care.
- 2 The system has no way to accommodate new diagnoses and procedures except after a laborious consensus-building process as to their *classification* (what pigeonhole they belong in) and, after that, implementation only once a year. (See the comments re SARS.)

Unless the system, MRHIS, can be redesigned in order to meet these reasonable demands from the clinician, the EMR faces very slow implementation.

What's Next?

The present situation was well summarized by Dan Rode, cited above. The following excerpts are from his summary.

In November 2003 the National Committee on Vital and Health Statistics (NCVHS) agreed to recommend that the secretary of Health and Human Services (HHS) adopt the ICD-10-CM and the ICD-10-PCS classification standards as replacement for the ICD-9-CM classification currently used in the US.

The next step is for the Secretary to consider the recommendation. If he decides to follow the recommendation,

“...the secretary will issue a “notice of proposed rule making” (NPRM) to upgrade the coding systems from ICD-9-CM.

“This NPRM will give a history of the issue and explain why these particular rules or regulations are being considered. It will also cite the regulations being proposed and the department’s rationale behind them. In addition, it will cite specific sections of HIPAA for reference, name the bodies overseeing the maintenance of the classification systems, and describe potential economic impact. Finally, it will provide a comment period for the public to review the proposed rule and make any recommendations for changes, deletions, or additions. The period for comment will be 30 to 60 days.

“Once the comment period is closed, all two-way dialogue between HHS and the public ceases. If the department has a question, it can “fact find” for an answer, but no additional comments can be made or considered, unsolicited, until a final notice is published. The waiting period for a final rule can vary tremendously, as we have seen with other HIPAA regulations. It could be as short as 30 days or it could be years.”

Should the Secretary pursue this course, interested parties should keep careful watch for the publication of the NPRM and be prepared to move very rapidly. 30 to 60 days is an extremely short period in which to study carefully the “final” version of *ICD-10-CM* (3,000+ pages of technical print) and prepare and submit comments. Study of the 2003 draft, for which there is now time, of course, will be of little help unless the editors of the final version carefully annotate the changes from the 2003 draft.

As noted in Rode’s summary, the proposal is not only to replace *ICD-9-CM* for diagnoses, but also to introduce the newly-commissioned *ICD-10-PCS (ICD-10-Procedure Coding System)* to replace Volume 3 of *ICD-9-CM* for the coding of procedures. (See the discussion above about this issue.)

The Bottom Line

This review was, of course, stimulated by the possibility that *ICD-10-CM* will be mandated to replace *ICD-9-CM* in the Medical Record Health Information System (MRHIS)²². Therefore, it’s necessary not only to review the technical details of the new classification itself, but also the implications of switching from *ICD-9-CM*.

ICD-10-CM would simply update the system already in use. It codes diagnoses directly into their categories (where they go) in the *International Statistical Classification* and discards the exact diagnoses (what they are).

Arguments for the switch:

- 1 *ICD-10-CM* gives “clearer clinical descriptions.” This means that it gets closer to providing a code for each separate diagnosis. This is, in some instances, true, but is “closer” good enough? There are better solutions to the problem of lack of precision.
- 2 *ICD-10-CM* is more “up to date.” This is not a compelling argument, because *ICD-10-CM* is required to conform with *ICD-10* from WHO (1992), so it by no means reflects 21st century thinking. Nor is it necessary to use *ICD-10-CM* in order to take advantage of technological innovations of the 21st century.

The MRHIS carries out three tasks, with different information needs for each.

Task 1 Patient care. Here exact detailed diagnoses are essential. *ICD-10-CM* fails, as does *ICD-9-CM*. Only a change in our medical record system itself can meet this need. We should (1) add a code for every diagnosis and (2) give codes instantly to new diagnoses.

Task 2: Billing for care. Here diagnoses must be collected into “payment” categories. We do this with *ICD-9-CM* in a system which is well tuned for fiscal neutrality, and with which we have in place a system for annual updating. To change this would require much effort and cost – with no assurance of improvement.

Task 3: Healthcare statistics. Here, for proper statistics, diagnoses must be selected and grouped into categories appropriate for their purpose. As long as our data are coded directly into categories, i.e, are preaggregated, we must

²² A more thorough discussion of MRHIS is found in Appendix A.

make a single classification try to serve all purposes, from public policy to clinical research. This flaw cannot be corrected by simply using new category codes in the present system.

If we take care of the system's needs for patient care, as outlined here, we can easily compile statistics precisely suited to their purposes.

A proper course of action for the United States would be to

- 1) Keep our present system with *ICD-9-CM* for its use in our billing system, and then
- 2) Devote our energies to providing a system for input in the medical record itself which does two things:
 - 1 Codes the exact diagnoses (diagnosis entities) and
 - 2 Provides, instantly, unique codes for new diagnoses.
- 3) Begin to use statistics designed for specific purposes.

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Addenda:

- A The Medical Record Health Information System (MRHIS)
- B Schema of *ICD-10-CM*
- C Chapter Comparison of *ICD-9* and *ICD-10-CM*
- D Examples of Multi-Diagnosis Codes in *ICD-10-CM*.

Addendum A

The Medical Record Health Information System (MRHIS)

Current consideration of switching diagnosis and procedure coding (from *ICD-9-CM* to *ICD-10-CM* and *ICD-10-PCS*) have dealt only with the secondary uses of one of our most basic health information systems – the MRHIS.

MRHIS is defined as that healthcare information system which is based on the information contained in the patient's medical record – the legal document which is kept as an integral and irreplaceable part of taking care of a patient. It has one primary and two secondary functions:

- 1) Documentation of patient care – PRIMARY
- 2) Substantiating the bill for care – SECONDARY
- 3) Providing statistics about health and healthcare – SECONDARY²³

The reason that there can be an MRHIS is that a medical record is produced in every encounter between caregiver and patient. This record is essential to provide memory and communication for the caregivers and to be the legal record of original entry in patient care. It has no substitute for these functions. Yet there has been virtually no attention to the primary purpose of the system, patient care, in the discussions of the coding switch.

It is essential to look at the whole picture.

Patient Care

Surprisingly, our coding system for diagnoses and procedures is a critical issue in our efforts to encourage the adoption of the electronic medical record (EMR). No one disputes the facts that the EMR can improve patient care and safety, and that it will one day replace the paper record. In view of its many advantages, the slowness of physicians to embrace it has been puzzling to many – reportedly less than 5% of the care today is recorded in EMRs.

A primary reason for the reluctance of physicians to accept the EMR is that there has been no satisfactory method of getting the patient's diagnoses (and procedures) in. Here's what the physician faces today:

In the interests of convenience, diagnosis and procedure input to the EMR is offered by giving lists of diagnoses and procedures from which the physician can simply "click" off the desired term. Providing lists with everything the physician might seek is a challenge, so the EMR vendor typically lets the physician add the diagnostic and procedure terms used locally to the list already in the software.

²³ Definition from Slee's Health Care Terms, 5th Edition (in preparation), Tringa Press.

Having to make local modifications of the software is an attractive sales feature, but it proves to be a nuisance and, of course, the modifications, if made at all, usually follow frustrating attempts to find the desired diagnosis or procedure.

The physician can't afford to wait days or weeks for the list to be improved, so she in irritation clicks off "the nearest thing" (knowing that the system will at least be able to prepare the bill) and then she moves on to the next patient. The EMR has demonstrated its first failure – it has made it difficult or impossible to put in this basic information.

But assume that the desired diagnosis has been added to the click-off list. An even more serious problem shows up when the physician tries to retrieve the diagnosis at a subsequent visit. The diagnosis often isn't there at all, unless it happens to be buried in a narrative comment. It has simply vanished without a trace.

Here's how today's system works:

SARS would not have been in the click-off list when the software was written. In 2003, when SARS was first encountered, the physician would have had to click on something like "unspecified pneumonia." The local "fix" probably eventually added "SARS" to the input list.

But behind the scenes, within the software, SARS would still have been coded to something like "other virus pneumonia." After this step, only the code for the category to which SARS had been assigned would remain. The physician has been tricked into thinking she recorded and coded the actual diagnosis ("what it is" -- SARS), while the software simply coded and recorded the ICD-9-CM code ("where it goes" in the coding scheme). SARS itself was simply discarded in the coding. The retrieved diagnosis is now "other virus pneumonia."²⁴

Clearly, this is no way to make friends with the physician. The system fails to do what a medical record system should do at the point of care, keep the critical detailed information.

This example has illustrated two serious shortcomings of today's MRHIS:

- 1) There is no way to get an immediate "official" code for a "new" diagnosis.
- 2) There is no code offered for every diagnosis – codes are only offered for the categories into which diagnoses are placed in the classification.

These shortcomings are clearly system problems²⁵.

²⁴ MRHIS is not the source of information about epidemics such as SARS; such intelligence comes from the public health reporting system, not from medical records.

²⁵ Not shown is another, surprising, invisible, system problem – the codes used do not carry any identification as to their sources. So one day, for example, "code 395" changed from an ear disorder to a heart disease and there was no way to tell which condition that code represented.

To correct the first, we should and could have a system which permits instant assignment of codes to new diagnoses, and the dissemination of this information to coders, and throughout the system.

The second fault can only be corrected by adding to our system, right in the medical records themselves, codes for every individual diagnosis. Patient care would be enhanced, and placing the diagnoses in any classification could be handled as a subsequent step.

The system came by this second fault honestly, before computerization. Information about diagnoses was most useful when they were placed in coded groups for review and for reimbursement. But we let this “group coding,” known as category coding, persist into the electronic age.

The results were

- 1) To force us to use grouped data when we needed explicit diagnoses, and
- 2) To force us to make one grouping scheme, one classification (ICD-9-CM), serve all purposes, because data, once aggregated, can never be disaggregated.

What is needed is the addition to the MRHIS of precise coded diagnoses in every medical record, enabling a better system known as entity coding of the diagnoses. Then the entire system could serve its purposes properly.

Switching from *ICD-9-CM* to *ICD-10-CM* would only perpetuate the present, frustrating system by simply replacing the current obsolete model with one somewhat updated. At the same time, it would consume resources with which a proper system could be designed and implemented. So switching would do nothing to improve patient care or safety.

The improvement suggested must be an addition to the current MRHIS system, however, not a replacement of category coding, which is essential for reimbursement. We must continue to place the cases into categories to which “prices” can be attached. We could not afford a system which had separate prices for each of the hundreds of thousands of diagnoses and procedures. The current system, already well calibrated between the services rendered and their costs, should be retained, with the usual periodic, careful adjustments to keep up with diagnostic and treatment changes.

Reimbursement

Reimbursement for health care is, generally speaking, determined by what is done for the patient and the reason why it is done.

What is done is called a “procedure. Procedures include non-surgical as well as surgical services. Procedure codes from the medical records are the source of this information.

The reason why something is done is reported as the “diagnosis” (or diagnoses) (and other reasons for seeking health care, such as immunizations, which are given “diagnosis” codes). The diagnosis codes in bills are the source of this information.

Two recent studies²⁶ discuss the dollar costs of switching codes and give estimates as to the financial impact on the healthcare system. Nolan, for example states the dollar costs likely to be about \$14 billion. These costs are imposed on both payers and providers. General heading of this cost impact are those of

- Teaching and learning new coding systems.

- Obtaining and testing new coding and analytical software.

- Operating both old and new systems simultaneously during a period of transition.

- Recalculating DRGs and similar “products” for which reimbursement is made. This is essential in order to protect both providers and payers. It is not possible simply to replace the old diagnosis and procedure codes which go into the payment formulas with the new codes – the coded groups are not interchangeable or there would be no reason to propose the switch in the first place.

Equally important, but not quantifiable in dollars, are the costs in terms of the information provided by the MRHIS. The effects of the switch on information are reflected in the statistics derived from the system, as discussed next.

Statistics

A number of constituencies use the statistics in the MRHIS. They include

- Legislative bodies

- Providers

- Quality and safety evaluators

- Planners

- Clinical investigators

- Healthcare investigators

For virtually all of these users, the statistic at a single point in time is of little value. The trends are the important things – changes from one time period to another. The effect on trends of a coding change such as being considered was well demonstrated in a recent report:

²⁶ Libicki, M. and Brahmakulam, I., *The Costs and Benefits of Moving to the ICD-10 Code Sets*, Rand Science and Technology, TR-132-DHHS, March 2004. Robert E. Nolan Company, *Replacing ICD-9-CM with ICD-10-CM and ICD-10-PCS: Challenges, Estimated Costs and Potential Benefits*, Prepared for the Blue Cross and Blue Shield Association, October 2003.

Florida public health officials monitor, annually, the effectiveness of their efforts to contain or reduce AIDS mortality. The federal government, which had compiled its mortality statistics using ICD-9 through 1998, in accordance with an international agreement, switched to ICD-10 for 1999 data. Florida's trend line had shown a steady decline of about 6% per year. The new computation reported an increase of about 6.6%. Not only did the health department have a lot of explaining to do with the legislature and others interested in the fight against AIDS, but a new trend line had to be established under the new system and Florida's true public health progress cannot be determined until several years have passed. (Recompiling 1999's data with the 1998 formula showed a decline of 6.7% – thus the difference of over 13% was caused by the coding change).²⁷

This illustration is taken from mortality statistics, which come from death certificates (not from the MRHIS), and are tabulated according to the *International Classification of Diseases (ICD)* as published by the World Health Organization (WHO). These are the “parents” of our clinical coding system – and we are bound to conform to the parents.²⁸ So the same problem with trend information would be found in the morbidity statistics in the United States, because these are developed from data coded to the clinical modifications of ICD (this is the coding in the MRHIS.) These clinical modifications, authored by the U. S., are kept in step with *ICD* itself by agreement between the National Center for Health Statistics and WHO, so the switch under consideration is from 1975 thinking to 1989 thinking (the years in which *ICD* itself was “put to bed”). Arguments that the switch will “bring the classification up to date” are pretty weak in view of the medical progress since 1989.

The effects of the disruption of trends should not be minimized. For example

Some studies, under both private and public funding, simply cannot go forward. They, and their investments, would have to be abandoned

Studies (statistics) which cross “switch” dates and ignore the likely distortions may result in serious errors in public policy and in research investments.

The stakeholders who have been heard from in the considerations by NCVHS and its subcommittees are primarily (1) the National Center for Health Statistics (NCHS) (authors of the clinical modification), (2) the American Health Information Management Association (AHIMA) (representing the professionals who code diagnoses and procedures), (3) the American Hospital Association (AHA), and (4) the insurance industry.

²⁷ Grigg, et al., “Research Letter: Coding Changes and Apparent HIV/AIDS Mortality Trends in Florida, 1999,” *JAMA*, Vol. 286, No. 15, page 1839, Oct. 17, 2001.

²⁸ Nations have switched from *ICD-9* to *ICD-10* at different times, the earliest reported being 1995, while some nations had not switched by the end of 2003. International comparisons must be made with great care, because the same trend interruption seen in Florida morbidity data between years would disturb international studies as well.

Strangely absent from this list are the professions most affected by any tampering with the medical record itself and with eliciting information for the progress of medicine and healthcare – the medical, nursing, other clinical healthcare professionals, and public health organizations. Nor do public policy-makers seem to have taken note.

The proposal to switch the diagnosis and procedure coding in the nation's MRHIS on the one hand presents serious threats to the health care of individuals and, on the other hand, stands to seriously damage our knowledge of the nation's health and of its healthcare system's performance. The decision as to switching should add analysis of these threats to consideration of the financial cost.

Corrections for the problems of inadequate diagnosis and procedure information, both in the medical record itself, and in the rest of the MRHIS, should be the goals of any changes in the system, rather than simply replacing an obsolete system which has both conceptual and operational faults with an update of the same system. Providing the essential basic diagnosis and procedure information in the system would make the proposed "fix" by switching classifications unnecessary and at the same time give providers, payers, investigators, and policy makers better information – and probably at a considerably lower outright cost.

A wake-up call should be sounded to the constituencies so far unrepresented in the matter – the nation's legislative bodies, clinicians, and public health. Input from careful consideration by these experts should be heard before any decisions are reached.

The System We Should Demand – and Create

In view of today's varied uses for coded information, and with today's information management technology beyond even the dreams of the 1950s, we should demand a coding system which meets one simple requirement:

Our MRHIS must preserve forever, in coded form, the most detailed diagnostic information in the original medical record, rather than simply the pigeonhole of a classification in vogue at the time of coding. Such "entity" codes can always be decoded to the exact diagnosis terms used rather than to the labels of a classification.

The advantages are several:

We will be freed from dependence on a "one-size-fits-all" classification. We can then place the diagnoses into as many classifications as desired, each appropriate for its own purpose. Public policy, reimbursement, health care administration, epidemiology, clinical research, evidence-based medicine – each need "tailored" classifications.

Input coding will not have to change whenever classifications are changed, as inevitably they are, to accommodate new knowledge.

The information professional will be freed to deal with information rather than coding intricacies.

A Proposed Course of Action²⁹

If we provide a way to capture and unalterably code the exact diagnoses – the diagnosis entities – in the medical record, all these features of a proper medical record information system (MRHIS) can be achieved.

Diagnosis entities, the exact terms, are already in the medical record as words or phrases³⁰. If they were also given permanent, unalterable codes, we'd have what we need. Granted, this would mean adding another coding system, "ahead" of or parallel with, our present coding to ICD-9-CM, which we need for reimbursement, but this addition should not be difficult. Our coders, whether coding manually or with the aid of coding software, already have to identify the diagnoses. All that needs to be added is a permanent code for each diagnosis.

Addition of an easy method for recording diagnosis entities should greatly speed up the physician's acceptance of the EMR. A major barrier has been the awkwardness of the input methods for observations and diagnoses. Check lists have been the primary answer, along with the opportunity to enter narrative comments. But narrative comments are currently neither codable nor searchable.

Investigators have taken the position that the diagnostic input must be in a standard vocabulary, so that all sources of input would be speaking the same language – all medical records containing the same diagnosis would couch it in the same term. This implies that, until we can first provide an absolutely complete standard vocabulary, i.e., one containing every term one might want to use, and then somehow enforce its use, we are stumped.

Both portions of this proposal are fatuous – we can never think of everything physicians may want to put in the records, nor can we envision a world in which everyone can be forced to speak "correctly," i.e., like an authority says they should (not even considering dialects, ethnic backgrounds, education, geographic region, and similar confounding influences)³¹. Yet one must agree with the desirability of having the diagnoses in the records expressed in the same terms. The problem lies with attempting to require that the **input** be in the standard or controlled terms.

We propose that the input of diagnoses should be in free vocabulary, letting the physician use whatever terms she wants to use, and that the **computer** then map these synonyms into the standard vocabulary. This would solve the problem – and such a solution is easily within today's data processing technology.

²⁹ Our paper "Input of Diagnoses in the Medical Information System" is available at <http://tringa.com/dxinput.pdf>.

³⁰ Except in some EMR systems where only the category is offered as a check-off, and the physician is warned not to put in comments which may conflict with the category assigned.

³¹ A later attempt at a forced vocabulary, also by AMA, was its series of *Current Medical Terminology (CMT)* publications, begun in 1962 and abandoned in 1971.

The proposed medical record information system (MRHIS) would simply need the addition to the medical record of a “front end” segment which contains, permanently coded, the exact diagnoses.

First the MRHIS would accept the diagnoses in

Free diagnosis vocabulary (FDxV): Every “diagnosis” statement (entity term) would be placed in the medical record exactly as stated, in natural language, i.e., in “free vocabulary.” Of course, most of the time, the physician will use the “standard term,” which will simply be identified and given its code.³² The input method could be similar to that of the financial program Quicken, which finds the “payee’s name as one types in the string of characters, jumping quickly ahead as they match what is already there. If the term had been encountered previously, the computer would supply its already-assigned code. If it were new, a code would be supplied immediately (essentially an accession number). When the entity term is found, it would instantly be given its →

Free vocabulary diagnosis entity code (FDxVEC): This would be a unique, permanent, unalterable code. Diagnosis entity terms and their corresponding codes would come from a single, national, master database – the Diagnosis Entity Code Database (FVDxECD). At the same time, the FVDxECD would supply, for the entity term and code, its mapping to the →

Standard diagnosis vocabulary (SDxV). SDxV would be an agreed-upon “controlled” vocabulary, perhaps to be called the U. S. Standard Diagnosis Vocabulary. Such a vocabulary may, for example, be that provided by SNOMED CT³³ The standard diagnosis would, of course, also be given a permanent code (SDxVC). This mapping feature is necessary so that all medical records would contain the same diagnostic language.³⁴

Meanwhile, continuing our present coding to ICD-9-CM would avoid interruption of the reimbursement process.

The code-finding process (for ICD-9-CM) described above is already being carried out every day by a coder, usually with the aid of coding software. The only new things are the capture and coding of the original free vocabulary and its mapping to a standard vocabulary, both steps of which are straightforward computer-assisted processes.

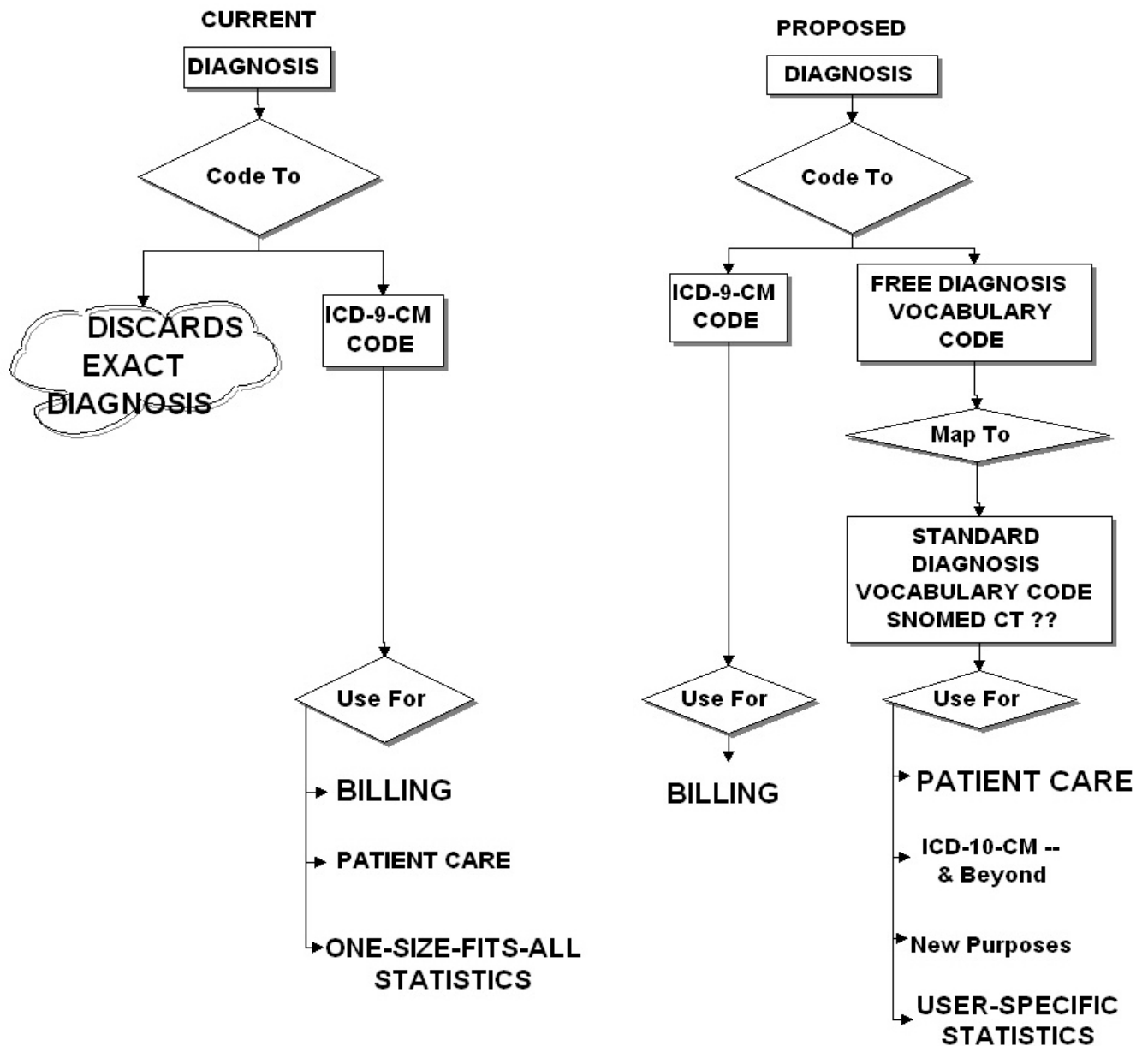
Process diagrams of today’s and the proposed diagnosis coding schemes are on the following page.

³² This proposal mirrors the wisdom as to how to know where to place the paved walks on a campus – pave the paths that people make.

³³ *Systematized Nomenclature of Medicine (SNOMED) Clinical Terms (CT)*, published by the College of American Pathologists and available from the National Library of Medicine.

³⁴ In future it would be a simple matter to use the same SDV codes to map cases into previous and future ICDs and into any classifications created for standard or *ad hoc* purposes, such as a new billing code and classifications for specific research.. No new input coding would ever be required – computer programming would take care of the task.

Diagnosis Coding in Medical Records



Current Medical Record Contains

ICD-9-CM Code

Proposed Medical Record Contains

**ICD-9-CM Code -- PLUS
Standard Dx Vocabulary Code**

Addendum B

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

Draft of June 2003

Schema

The Draft Preface states

“ICD-10-CM is a clinical modification of the World Health Organizations’s International Classification of Diseases, 10th Revision (ICD-10). The term clinical is used to emphasize the modification’s intent: to serve as a useful tool in the area of classification of morbidity data for indexing of medical records, medical care review, and ambulatory and other medical care programs, as well as for basic health statistics. To describe the clinical picture of the patient the codes must be more precise than those needed only for statistical groupings and trend analysis.” and “ICD-10-CM far exceeds its predecessors in the number of concepts and codes provided. The disease classification has been expanded to include health-related conditions and to provide greater specificity at the sixth digit level and with a seventh digit extension.”

The Official Guidelines state

“The *ICD-10-CM* is in the public domain, however, neither categories nor code titles may be altered in any way, except through the Coordination and Maintenance process, the annual updating procedure overseen jointly by NCHS and the Centers for Medicare and Medicaid Services (CMS).”

There are no codes for procedures in *ICD-10-CM*.

Following are the Chapter and “block” headings as they appeared in June 2003. The full volume (1775 pages), of course, has many instructions, such as “excludes,” “includes,” “code also,” “code first,” “use additional code,” along with lists of diagnoses and other instructions accompanying both the chapter heading notes and the codes themselves.

Chapter 1: Certain infectious and parasitic diseases (A00-B99)

A00-A09	Intestinal infectious diseases
A15-A19	Tuberculosis
A20-A28	Certain zoonotic bacterial diseases
A30-A49	Other bacterial diseases
A50-A64	Infections with a predominantly sexual mode of transmission
A65-A69	Other spirochetal diseases
A70-A74	Other diseases caused by chlamydiae
A75-A79	Rickettsioses
A80-A89	Viral infections of the central nervous system
A90-A99	Arthropod-borne viral fevers and viral hemorrhagic fevers
B00-B09	Viral infections characterized by skin and mucous membrane lesions
B15-B19	Viral hepatitis
B20	Human immunodeficiency virus [HIV] disease
B25-B34	Other viral diseases
B35-B49	Mycoses
B50-B64	Protozoal diseases
B65-B83	Helminthiasis
B85-B89	Pediculosis, acariasis and other infestations
B90-B94	Sequelae of infectious and parasitic diseases
B95-B97	Bacterial, viral and other infectious agents
B99	Other infectious diseases

Chapter 2: Neoplasms (C00-D48)

C00-C75	Malignant neoplasms, stated or presumed to be primary, of specified sites, except of lymphoid, hematopoietic and related tissue
C00-C14	Lip, oral cavity and pharynx
C15-C26	Digestive organs
C30-C39	Respiratory and intrathoracic organs
C40-C41	Bone and articular cartilage
C43-C44	Skin
C45-C49	Mesothelial and soft tissue
C50	Breast
C51-C58	Female genital organs
C60-C63	Male genital organs
C64-C68	Urinary tract
C69-C72	Eye, brain and other parts of central nervous system
C73-C75	Thyroid and other endocrine glands
C76-C80	Malignant neoplasms of ill-defined, secondary and unspecified sites
C81-C96	Malignant neoplasms, stated or presumed to be primary, of lymphoid, hematopoietic and related tissue
D00-D09	In situ neoplasms
D10-D36	Benign neoplasms
D37-D48	Neoplasms of uncertain behavior
D49	Neoplasms of unspecified behavior

Chapter 3: Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50-D89)

D50-D53	Nutritional anemias
D55-D59	Hemolytic anemias
D60-D64	Aplastic and other anemias
D65-D69	Coagulation defects, purpura and other hemorrhagic conditions
D70-D78	Other diseases of blood and blood-forming organs
D80-D89	Certain disorders involving the immune mechanism

Chapter 4: Endocrine, nutritional and metabolic diseases (E00-E90)

E00-E07	Disorders of thyroid gland
E08-E14	Diabetes mellitus
E15-E16	Other disorders of glucose regulation and pancreatic internal secretion
E20-E36	Disorders of other endocrine glands
E40-E46	Malnutrition
E50-E64	Other nutritional deficiencies
E65-E68	Obesity and other hyperalimentation
E70-E89	Metabolic disorders

Chapter 5: Mental and behavioral disorders (F01-F99)

F01-F09	Mental disorders due to known physiological conditions
F10-F19	Mental and behavioral disorders due to psychoactive substance use
F20-F29	Schizophrenia, schizotypal and delusional, and other non-mood psychotic disorders
F30-F39	Mood [affective] disorders
F40-F48	Anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders
F50-F59	Behavioral syndromes associated with physiological disturbances and physical factors
F60-F69	Disorders of adult personality and behavior
F70-F79	Mental retardation
F80-F89	Pervasive and specific developmental disorders
F90-F98	Behavioral and emotional disorders with onset usually occurring in childhood and adolescence
F99	Unspecified mental disorder

Chapter 6: Diseases of the nervous system (G00-G99)

G00-G09	Inflammatory diseases of the central nervous system
G10-G13	Systemic atrophies primarily affecting the central nervous system
G20-G26	Extrapyramidal and movement disorders
G30-G32	Other degenerative diseases of the nervous system
G35-G37	Demyelinating diseases of the central nervous system
G40-G47	Episodic and paroxysmal disorders
G50-G59	Nerve, nerve root and plexus disorders
G60-G64	Polyneuropathies and other disorders of the peripheral nervous system
G70-G73	Diseases of myoneural junction and muscle
G80-G83	Cerebral palsy and other paralytic syndromes
G90-G99	Other disorders of the nervous system

Chapter 7: Diseases of the eye and adnexa (H00-H59)

H00-H05	Disorders of eyelid, lacrimal system and orbit
H10-H13	Disorders of conjunctiva
H15-H21	Disorders of sclera, cornea, iris and ciliary body
H25-H28	Disorders of lens
H30-H36	Disorders of choroid and retina
H40-H42	Glaucoma
H43-H45	Disorders of vitreous body and globe
H46-H47	Disorders of optic nerve and visual pathways
H49-H52	Disorders of ocular muscles, binocular movement, accommodation and refraction
H53-H54	Visual disturbances and blindness
H55-H59	Other disorders of eye and adnexa

Chapter 8: Diseases of the ear and mastoid process (H60-H95)

H60-H62	Diseases of external ear
H65-H75	Diseases of middle ear and mastoid
H80-H83	Diseases of inner ear
H90-H95	Other disorders of ear

Chapter 9: Diseases of the circulatory system (I00-I99)

I00-I02	Acute rheumatic fever
I05-I09	Chronic rheumatic heart diseases
I10-I15	Hypertensive diseases
I20-I25	Ischemic heart diseases
I26-I28	Pulmonary heart disease and diseases of pulmonary circulation
I30-I52	Other forms of heart disease
I60-I69	Cerebrovascular diseases
I70-I79	Diseases of arteries, arterioles and capillaries
I80-I89	Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified
I95-I99	Other and unspecified disorders of the circulatory system

Chapter 10: Diseases of the respiratory system (J00-J99)

J00-J06	Acute upper respiratory infections
J10-J18	Influenza and pneumonia
J20-J22	Other acute lower respiratory infections
J30-J39	Other diseases of upper respiratory tract
J40-J47	Chronic lower respiratory diseases
J60-J70	Lung diseases due to external agents
J80-J84	Other respiratory diseases principally affecting the interstitium
J85-J86	Suppurative and necrotic conditions of the lower respiratory tract
J90-J94	Other diseases of the pleura
J95-J99	Other diseases of the respiratory system

Chapter 11: Diseases of the digestive system (K00-K93)

K00-K14	Diseases of oral cavity and salivary glands
K20-K31	Diseases of esophagus, stomach and duodenum
K35-K38	Diseases of appendix
K40-K46	Hernia
K50-K52	Noninfective enteritis and colitis
K55-K63	Other diseases of intestines
K65-K68	Diseases of peritoneum and retroperitoneum
K70-K77	Diseases of liver
K80-K87	Disorders of gallbladder, biliary tract and pancreas
K90-K94	Other diseases of the digestive system

Chapter 12: Diseases of the skin and subcutaneous tissue (L00-L99)

L00-L08	Infections of the skin and subcutaneous tissue
L10-L14	Bullous disorders
L20-L30	Dermatitis and eczema
L40-L45	Papulosquamous disorders
L50-L54	Urticaria and erythema
L55-L59	Radiation-related disorders of the skin and subcutaneous tissue
L60-L75	Disorders of skin appendages
L76	Intraoperative and postprocedural complications of dermatologic procedures
L80-L99	Other disorders of the skin and subcutaneous tissue

Chapter 13: Diseases of the musculoskeletal system and connective tissue (M00-M99)

M00-M02	Infectious arthropathies
M05-M14	Inflammatory polyarthropathies
M15-M19	Osteoarthritis
M20-M25	Other joint disorders
M26-M27	Dentofacial anomalies [including malocclusion] and other disorders of jaw
M30-M36	Systemic connective tissue disorders
M40-M43	Deforming dorsopathies
M45-M49	Spondylopathies
M50-M54	Other dorsopathies
M60-M63	Disorders of muscles
M65-M67	Disorders of synovium and tendon
M70-M79	Other soft tissue disorders
M80-M85	Disorders of bone density and structure
M86-M90	Other osteopathies
M91-M94	Chondropathies
M95-M99	Other disorders of the musculoskeletal system and connective tissue

Chapter 14: Diseases of the genitourinary system (N00-N99)

N00-N08	Glomerular diseases
N10-N16	Renal tubulo-interstitial diseases
N17-N19	Renal failure
N20-N23	Urolithiasis
N25-N29	Other disorders of kidney and ureter
N30-N39	Other diseases of the urinary system
N40-N51	Diseases of male genital organs
N60-N64	Disorders of breast
N70-N77	Inflammatory diseases of female pelvic organs
N80-N98	Noninflammatory disorders of female genital tract
N99	Other disorders of genitourinary system

Chapter 15: Pregnancy, childbirth and the puerperium (O00-O99)

O00-O08	Pregnancy with abortive outcome
O09	Supervision of high-risk pregnancy
O10-O16	Edema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium
O20-O29	Other maternal disorders predominantly related to pregnancy
O30-O48	Maternal care related to the fetus and amniotic cavity and possible delivery problems
O60-O77	Complications of labor and delivery
O80, O82	Encounter for delivery
O85-O92	Complications predominantly related to the puerperium
O93	Sequelae of complication of pregnancy, childbirth, and the puerperium
O94-O99	Other obstetric conditions, not elsewhere classified

Chapter 16: Certain conditions originating in the perinatal period (P00-P96)

P00-P04	Newborn affected by maternal factors and by complications of pregnancy, labor, and delivery
P05-P08	Disorders related to length of gestation and fetal growth
P10-P15	Birth trauma
P19-P29	Respiratory and cardiovascular disorders specific to the perinatal period
P35-P39	Infections specific to the perinatal period
P50-P61	Hemorrhagic and hematological disorders of newborn
P70-P74	Transitory endocrine and metabolic disorders specific to newborn
P75-P78	Digestive system disorders of newborn
P80-P83	Conditions involving the integument and temperature regulation of newborn
P84	Other problems with newborn
P90-P96	Other disorders originating in the perinatal period

Chapter 17: Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)

Q00-Q07	Congenital malformations of the nervous system
Q10-Q18	Congenital malformations of eye, ear, face and neck
Q20-Q28	Congenital malformations of the circulatory system
Q30-Q34	Congenital malformations of the respiratory system
Q35-Q37	Cleft lip and cleft palate
Q38-Q45	Other congenital malformations of the digestive system
Q50-Q56	Congenital malformations of genital organs
Q60-Q64	Congenital malformations of the urinary system
Q65-Q79	Congenital malformations and deformations of the musculoskeletal system
Q80-Q89	Other congenital malformations
Q90-Q99	Chromosomal abnormalities, not elsewhere classified

Chapter 18: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)

R00-R09	Symptoms and signs involving the circulatory and respiratory systems
R10-R19	Symptoms and signs involving the digestive system and abdomen
R20-R23	Symptoms and signs involving the skin and subcutaneous tissue
R25-R29	Symptoms and signs involving the nervous and musculoskeletal systems
R30-R39	Symptoms and signs involving the urinary system
R40-R46	Symptoms and signs involving cognition, perception, emotional state and behavior
R47-R49	Symptoms and signs involving speech and voice
R50-R69	General symptoms and signs
R70-R79	Abnormal findings on examination of blood, without diagnosis
R80-R82	Abnormal findings on examination of urine, without diagnosis
R83-R89	Abnormal findings on examination of other body fluids, substances and tissues, without diagnosis
R90-R94	Abnormal findings on diagnostic imaging and in function studies, without diagnosis
R99	Ill-defined and unknown cause of mortality

Chapter 19: Injury, poisoning and certain other consequences of external causes (S00-T98)

S00-S09	Injuries to the head
S10-S19	Injuries to the neck
S20-S29	Injuries to the thorax
S30-S39	Injuries to the abdomen, lower back, lumbar spine, pelvis and external genitals
S40-S49	Injuries to the shoulder and upper arm
S50-S59	Injuries to the elbow and forearm
S60-S69	Injuries to the wrist and hand
S70-S79	Injuries to the hip and thigh
S80-S89	Injuries to the knee and lower leg
S90-S99	Injuries to the ankle and foot
T07	Unspecified multiple injuries
T14	Injury of unspecified body region
T15-T19	Effects of foreign body entering through natural orifice
T20-T32	Burns and corrosions
T33-T34	Frostbite
T36-T50	Poisoning by, adverse effect of and underdosing of drugs, medicaments and biological substances
T51-T65	Toxic effects of substances chiefly nonmedicinal as to source
T66-T78	Other and unspecified effects of external causes
T79	Certain early complications of trauma
T80-T88	Complications of surgical and medical care, not elsewhere classified

Chapter 20: External causes of morbidity (V01-Y98)

V00-V99	Transport accidents
V00-V09	Pedestrian injured in transport accident
V10-V19	Pedal cyclist injured in transport accident
V20-V29	Motorcycle rider injured in transport accident
V30-V39	Occupant of three-wheeled motor vehicle injured in transport accident
V40-V49	Car occupant injured in transport accident
V50-V59	Occupant of pick-up truck or van injured in transport accident
V60-V69	Occupant of heavy transport vehicle injured in transport accident
V70-V79	Bus occupant injured in transport accident
V80-V89	Other land transport accidents
V90-V94	Water transport accidents
V95-V97	Air and space transport accidents
V98-V99	Other and unspecified transport accidents
W00-X58	Other external causes of accidental injury
W00-W19	Falls
W20-W49	Exposure to inanimate mechanical forces
W50-W64	Exposure to animate mechanical forces
W65-W74	Accidental drowning and submersion
W85-W99	Exposure to electric current, radiation and extreme ambient air temperature and pressure
X00-X09	Exposure to smoke, fire and flames
X10-X19	Contact with heat and hot substances
X30-X39	Exposure to forces of nature
X52, X58	Accidental exposure to other specified factors
X71-X83	Intentional self-harm
X92-Y08	Assault
Y21-Y33	Event of undetermined intent
Y35-Y38	Legal intervention, operations of war, military operations, and terrorism
Y62-Y84	Complications of medical and surgical care
Y62-Y69	Misadventures to patients during surgical and medical care
Y70-Y82	Medical devices associated with adverse incidents in diagnostic and therapeutic use
Y83-Y84	Surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure
Y90-Y98	Supplementary factors related to causes of morbidity classified elsewhere

Chapter 21: Factors influencing health status and contact with health services (Z00-Z99)

Z00-Z13	Persons encountering health services for examination and investigation
Z14-Z15	Genetic carrier and genetic susceptibility to disease
Z16	Infection with drug-resistant microorganisms
Z20-Z28	Persons with potential health hazards related to communicable diseases
Z30-Z39	Persons encountering health services in circumstances related to reproduction
Z40-Z53	Persons encountering health services for specific procedures and health care
Z55-Z65	Persons with potential health hazards related to socioeconomic and psychosocial circumstances
Z66	Do not resuscitate [DNR] status
Z67	Blood type
Z69-Z76	Persons encountering health services in other circumstances
Z79-Z99	Persons with potential health hazards related to family and personal history and certain conditions influencing health status

Addendum C

Chapter Comparison of ICD-9 and ICD-10-CM ³⁵				
Chapter	Codes		Title	
	ICD-9	ICD-10	ICD-9	ICD-10-CM
1	001-139	A00-B99	Infectious and parasitic diseases	Certain infectious and parasitic diseases
2	140-239	C00-D48	Neoplasms	Neoplasms
3	240-279		Endocrine, nutritional and metabolic diseases and immunity disorders	
		D50-D89		Diseases of blood and blood-forming organs and certain disorders involving the immune mechanism
4	280-289		Diseases of blood and blood-forming organs	
		E00-E90		Endocrine, nutritional, and metabolic diseases
5	290-319	F01-F99	Mental disorders	Mental and behavioral disorders
6	320-459	G00-G99	Diseases of the nervous system and sense organs	Diseases of the nervous system
7	390-459		Diseases of the circulatory system	
		H00-H95		Diseases of the eye and adnexa
8	460-519		Diseases of the respiratory system	
		H60-H99		Diseases of the ear and mastoid process
9	520-579		Diseases of the digestive system	
		I00-I99		Diseases of the circulatory system
10	580-629		Diseases of the genitourinary system	
		J00-J99		Diseases of the respiratory system
11	630-676		Complications of pregnancy, childbirth, and the puerperium	

³⁵ From Slee, VN, et al, *The Endangered Medical Record: Ensuring Its Integrity in the Age of Informatics*, Tringa Press, 2000.

		K00-K93		Diseases of the digestive system
12	680-709	L00-L99	Diseases of the skin and subcutaneous tissues	Diseases of the skin and subcutaneous tissues
13	710-739	M00-M99	Diseases of the musculoskeletal system and connective tissue	Diseases of the musculoskeletal system and connective tissue
14	740-759		Congenital anomalies	
		N00-N99		Diseases of the genitourinary system
15	760-779		Certain conditions originating in the perinatal period	
		O00-O-99		Pregnancy, childbirth, and puerperium
16	780-799		Symptoms, signs, and ill-defined conditions	
		P00-P96		Certain conditions originating in the perinatal period
17	800-999		Injury and poisoning	
		Q00-Q99		Congenital malformations, deformations, and chromosomal abnormalities
18		R00-R99		Symptoms, signs, and abnormal clinical and laboratory findings nor elsewhere classified
19		S00-T98		Injury, poisoning, and certain other consequences of external causes
20		V01-Y98		External causes of morbidity and mortality
21		Z00-Z99		Factors influencing health status and contact with health services
	E800-E999		Supplementary classification of external causes of injury and poisoning	
	V01-V82		Supplementary classification of factors influencing health status and contact with health services	

Addendum D
Examples of Multi-diagnosis Categories
Draft of June 2003 of ICD-10-CM

- A81.0 Creutzfeldt-Jakob disease**
 Subacute spongiform encephalopathy (with dementia) [Note: no provision for “New-variant” type]
- C30.1 Malignant neoplasm of middle ear**
 Malignant neoplasm of antrum tympanicum
 Malignant neoplasm of auditory tube
 Malignant neoplasm of eustachian tube
 Malignant neoplasm of inner ear
 Malignant neoplasm of mastoid air cells
 Malignant neoplasm of tympanic cavity
- D75.1 Secondary polycythemia**
 Acquired polycythemia
 Emotional polycythemia
 Hypoxemic polycythemia
 Nephrogenous polycythemia
 Polycythemia due to erythropoietin
 Polycythemia due to fall in plasma volume
 Polycythemia due to high altitude
 Polycythemia due to stress
 Relative polycythemia
- E85 Amyloidosis:**
 amyloid polyneuropathy (Portuguese)
 familial Mediterranean fever
 hemodialysis-associated amyloidosis
 hereditary amyloid nephropathy
 heredofamilial (neuropathic) (non-neuropathic) amyloidosis
 localized amyloidosis
 organ-limited amyloidosis
 secondary systemic amyloidosis
- F07.0 Personality change due to known physiological condition**
 Frontal lobe syndrome
 Limbic epilepsy personality syndrome
 Lobotomy syndrome
 Organic personality disorder
 Organic pseudopsychopathic personality
 Organic pseudoretarded personality
 Postleucotomy syndrome
- G71.1 Myotonic disorders**
 Chondrodystrophic myotonia
 Dominant myotonia congenita [Thomsen]
 Drug-induced myotonia
 Dystrophia myotonica [Steinert]
 Myotonia congenita NOS
 Neuromyotonia [Isaacs]
 Paramyotonia congenita
 Pseudomyotonia
 Recessive myotonia congenita [Becker]
 Symptomatic myotonia

- H30.9 Unspecified chorioretinal inflammation Chorioretinitis NOS** [Note: subdivisions are provided for right, left, both, and unspecified]
 Choroiditis NOS
 Neuroretinitis NOS
 Retinitis NOS
 Retinochoroiditis NOS
- H65.9 Unspecified nonsuppurative otitis media** [Note: subdivisions are provided for right, left, both, and unspecified]
 Allergic otitis media NOS
 Catarrhal otitis media NOS
 Exudative otitis media NOS
 Mucoid otitis media NOS
 Otitis media with effusion (nonpurulent) NOS
 Secretory otitis media NOS
 Seromucinous otitis media NOS
 Serous otitis media NOS
 Transudative otitis media NOS
- I73.8 Other specified peripheral vascular diseases**
 Acrocyanosis
 Erythrocyanosis
 Erythromelalgia
 Simple acroparesthesia [Schultze's type]
 Vasomotor acroparesthesia [Nothnagel's type]
- J98.0 Diseases of bronchus, not elsewhere classified**
 Broncholithiasis
 Calcification of bronchus
 Stenosis of bronchus
 Tracheobronchial collapse
 Tracheobronchial dyskinesia
 Ulcer of bronchus
- K86.8 Other specified diseases of pancreas**
 Aseptic pancreatic necrosis
 Atrophy of pancreas
 Calculus of pancreas
 Cirrhosis of pancreas
 Fibrosis of pancreas
 Pancreatic fat necrosis
 Pancreatic infantilism
 Pancreatic necrosis NOS
- L03.0 Cellulitis and acute lymphangitis of finger and toe**
 Infection of nail
 Onychia
 Paronychia
 Perionychia
- M26.5 Dentofacial functional abnormalities**
 Abnormal jaw closure
 Malocclusion due to abnormal swallowing
 Malocclusion due to mouth breathing
 Malocclusion due to tongue, lip or finger habits
- M60.15 Interstitial myositis, thigh [Note: subdivisions do not provide for both thighs]
M60.151 Interstitial myositis, right thigh
M60.152 Interstitial myositis, left thigh
M60.159 Interstitial myositis, unspecified thigh
- N50.8 Other specified disorders of male genital organs**

Atrophy of scrotum, seminal vesicle, spermatic cord, tunica vaginalis and vas deferens
 Edema of scrotum, seminal vesicle, spermatic cord, testis, tunica vaginalis and vas deferens
 Hypertrophy of scrotum, seminal vesicle, spermatic cord, testis, tunica vaginalis and vas deferens
 Ulcer of scrotum, seminal vesicle, spermatic cord, testis, tunica vaginalis and vas deferens
 Chylocele, tunica vaginalis (nonfilarial) NOS
 Urethroscrotal fistula
 Stricture of spermatic cord, tunica vaginalis, and vas deferens

O75.4 Other complications of obstetric surgery and procedures

Cardiac arrest following obstetric surgery or procedures
 Cardiac failure following obstetric surgery or procedures
 Cerebral anoxia following obstetric surgery or procedures
 Pulmonary edema following obstetric surgery or procedures

P22.0 Respiratory distress syndrome of newborn

Cardiorespiratory distress syndrome of newborn
 Hyaline membrane disease
 Idiopathic respiratory distress syndrome [IRDS or RDS] of newborn
 Pulmonary hypoperfusion syndrome
 Respiratory distress syndrome, type I P

Q43.8 Other specified congenital malformations of intestine

Congenital blind loop syndrome
 Congenital diverticulitis, colon
 Congenital diverticulum, intestine
 Dolichocolon
 Megaloappendix
 Megaloduodenum
 Microcolon
 Transposition of appendix
 Transposition of colon
 Transposition of intestine

R41.4 Neurologic neglect syndrome

Asomatognosia
 Hemi-akinesia
 Hemi-inattention
 Hemispatial neglect
 Left-sided neglect
 Sensory neglect
 Visuospatial neglect

S36.032 Major laceration of spleen

Avulsion of spleen
 Laceration of spleen greater than 3 cm
 Massive laceration of spleen
 Multiple moderate lacerations of spleen
 Stellate laceration of spleen

S10.0 Contusion of throat

Contusion of cervical esophagus
 Contusion of larynx
 Contusion of pharynx
 Contusion of trachea

T83.29 Other mechanical complication of graft of urinary organ

Obstruction (mechanical) of graft of urinary organ
 Perforation of graft of urinary organ
 Protrusion of graft of urinary organ

W27.0 Contact with workbench tool

Contact with auger
 Contact with axe

Contact with chisel
Contact with handsaw
Contact with screwdriver

Z59.8 Other problems related to housing and economic circumstances

Foreclosure on loan
Isolated dwelling
Problems with creditors