

# coding matters



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*CAP delegation in Chicago  
I-r Peter MacIsaac, Don Walker, Geoff Sims, Cathy Jubb,  
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## SNOMED CT

The headline of this issue should be the same as June edition of *Coding Matters* – “Everything old is new again”! That is because, in writing about SNOMED CT, I am reminded of heated discussions back in the 1960s when Australia changed from use of the *Standard Nomenclature of Diseases and Operations* to the *International Classification of Diseases*.

### **Nomenclature or statistical classification?**

Back then, it was a question of choosing between a nomenclature and a statistical classification. At the time, a nomenclature was defined as a list of approved terms for describing clinical and pathological conditions, where every recognised disease entity regardless of its significance is included. On the other hand, a statistical classification was said to consist of groups chosen to make easier the statistical study of disease phenomena, with a separate title for a disease chosen only where warranted by its frequency of occurrence or importance as a morbid condition of disease.

In retrospect, this was really the difference between describing the input (terms reflecting diseases and procedures) and output (statistical classes). With the use of databases to hold a classification such as ICD-10-AM, we have the capacity to relate and capture specific terms in ▶

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the index to a statistical classification (in fact, a nomenclature) and the classes in the tabular list (a statistical classification).

Interest in nomenclatures has been revived with the focus on the language of electronic health records and the opportunities afforded by our ability to capture terms used in records and assign codes. It has been particularly spiked by the development of SNOMED CT, a terminology evolving from a partnership between the College of American Pathologists (CAP) and the United Kingdom National Health Service (NHS). For some decades, the College has been responsible for SNOMED (the *Systematized Nomenclature of Medicine* which grew out of the *Systematized Nomenclature of Pathology* or *SNOP*), the current release being SNOMED RT (Reference Terminology). The NHS brings to the partnership Clinical Terms Version 3 (CTV3), in former versions known as the Read Codes. The combination of SNOMED RT and CTV3 will form SNOMED CT (Clinical Terms).

### **SNOMED CT and Australia**

SNOMED CT has been promoted as an international, multi-lingual terminology resource – a true global terminology for health and veterinary science. The August 2000 *Report of the General Practice Coding Jury*, while recommending that ICD-10-AM, with the addition of general practice terms, be adopted as the coding system to be used in general practice in Australia for the next five years, also recommended that Australia should become involved in SNOMED CT developments.



**CAP delegation at the US National Library of Medicine in Washington, DC**

To explore this possibility, an Australian delegation visited the United States for a week during June this year. The visit was supported by the Commonwealth Department of Health and Aged Care and initiated by Dr Peter MacIsaac, Senior Medical Advisor in the department. He lead the group, which also included Cathy Jubb and Elizabeth Moss (Health), Geoff Sims (Australian Institute of Health and Welfare), Dr Ric Marshall (National Health Information Management Group and Victorian Department of Human Services), Dr Don Walker (Medical Informatics Consultant, South Australia, and member of the GP Coding Jury) and myself.

### **SNOMED CT trials**

The visit turned out to be a highly concentrated and stimulating whirlwind – firstly to Washington and the National Library of Medicine for one day – and then to Chicago and the CAP for a four-day intensive “look” at SNOMED CT. I should explain that SNOMED CT has not yet been released. The alpha trials, of selected subject domains, are taking place between July and September this year. Candidates for inclusion in the alpha trials are international users of SNOMED RT and others who might have a particular interest. Australia exhibited this interest during and after our visit, and as a result, has negotiated participation of several sites, including NCCH, in these alpha trials. Beta trials will commence in December 2001 with the expected launch date of SNOMED CT in June 2002. The reason for an initial stop in Washington was to ascertain the US Government position on SNOMED and possible uptake in that country.

The Australian delegation was most warmly welcomed by the SNOMED CT developers at CAP. We were exposed to detailed explanations of the structure of the terminology for both input and output. SNOMED CT core structure includes concepts, descriptions (terms) and relationships. The terminology covers primary care and specialty medicine, is multi-hierarchical and has an average of 10 levels of hierarchy per concept. The hierarchies include findings (diagnoses), interventions, body structures, organisms, substances, social and administrative issues, environmental factors, staging, scales and qualifiers. Over 1 million parent-child or “Isa” relationships between concepts are explicitly defined to allow consistent data retrieval. Mappings to classifications such as ICD-9-CM, ICD-10 and ICPC are either available or underway.



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Mechanisms have been established for development of subsets, extensions and dialects. A full description of SNOMED is featured in *Classification Corner* on page 4 of this issue of *Coding Matters*.

As well as the formal and informal presentations with key staff from CAP and some 'modellers' from NHS, the delegation was exposed to technical issues relating to the structure of the terminology and tools to hold this and other terminologies to which it is or might be mapped. SNOMED CT also contains LOINC (Logical Observation Identifiers Names and Codes), used primarily for classification of diagnostic test results.

At the time of writing, NCCH is negotiating a licence to use the Cyber+LE software to hold the SNOMED CT alpha trial data and ICD-10-AM so that mappings can be commenced. Members of the US delegation have agreed to form an Australian SNOMED Advisory Group and will add representatives from the medical software industry and professional organisations. The NCCH project is, of course, only one among many that will be prompted by the availability of SNOMED CT. The relationship between the terminology and existing classifications is extremely important, but urgent work needs to be done on integrating the terminology into the structure and content of electronic health records for all health service delivery.



**I-r Don Walker, Kent Spackman (CAP)  
and Peter MacIsaac**

A great deal of excitement has been generated by these developments. I think that readers of *Coding Matters* need to be reassured that ICD-10-AM and other reporting classifications will not disappear. I believe they will instead be enhanced by making more objective the connection between terms and classes and between patient record content and terms abstracted for coding. For me, it brings together the fundamental functions of a clinical coder – to decide what needs to be coded and then to choose the appropriate code. SNOMED CT will not replace clinical coders but will be a vital tool in making more visible the relationships between terms, concepts and classes. I must say it helps to be able to look back nearly forty years – I wish I could also look forward to the 2060s to see the evolution of this ground breaking 'new' terminology. I can certainly look forward to the next issue of *Coding Matters* and bringing you up to date on Australian involvement in SNOMED CT. In the meantime, you might wish to visit SNOMED yourself – at [www.snomed.org](http://www.snomed.org).

▶ **Rosemary Roberts**  
Director

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***SNOMED CT has been promoted as an international, multi-lingual terminology resource – a true global terminology for health and veterinary science.***

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# Classification corner **Systematized Nomenclature of Medicine (SNOMED)**

**SNOMED is the *Systematized Nomenclature of Medicine* (previously *Systematized Nomenclature of Human and Veterinary Medicine*). SNOMED was first published in 1974 and is owned and copyrighted by the College of American Pathologists (CAP).**

SNOMED is a hierarchical, multiaxial system of terms and codes that enables complex medical statements to be composed and codes derived. One of the main reasons for its development and evolution has been the increasing use of computers and consequentially, the need for a supporting nomenclature for an electronic health record.<sup>1</sup>

## **SNOMED I and II**

The first version of SNOMED had six axes (or modules):

1. Topography
2. Morphology
3. Aetiology
4. Function
5. Disease/diagnosis
6. Procedures.

The second version, introduced in 1979, added another axis – Occupations – to enable research on the relationship of occupation (and environment) to health.<sup>1</sup>

## **SNOMED International (SNOMED III)**

SNOMED International, which is also known as SNOMED III, was released in 1993.

'International' reflects that the nomenclature was developed in many different language editions.<sup>2</sup> The content was significantly expanded, the aetiology axis was split into four new axes and a general linkage modifiers axis was introduced (see Table 1).<sup>1</sup> An important component of SNOMED International is that most ICD-9-CM terms and codes have been incorporated. This has enabled users to index in SNOMED terms and codes and to report in ICD-9-CM terms and codes.

**Table 1 Axes of SNOMED International<sup>3</sup>**

<b>T</b>	<b>Topography (anatomy)</b>	detailed anatomic terms used in human and veterinary medicine
<b>M</b>	<b>Morphology</b>	terms used to describe structural changes in the body. It includes an exact replica of the tumour nomenclature found in the morphology section of the International Classification of Diseases for Oncology (ICD-O) 1990
<b>F</b>	<b>Function</b>	terms used to describe both normal and abnormal functions of the body to include physiology and physiopathology with observations and diagnoses made by nursing personnel
<b>D</b>	<b>Disease/diagnosis</b>	detailed listing of the names of diseases and diagnostic entities encountered in human and veterinary medicine. Essentially all of the diagnostic terms found in the ICD-9-CM are assigned specific and individualised codes
<b>P</b>	<b>Procedures</b>	comprehensive listing of the administrative, therapeutic and diagnostic procedures used by health care personnel. It encompasses all medical specialties
<b>J</b>	<b>Occupations</b>	the WHO International Labour Office's (ILO) list of occupations
<b>L</b>	<b>Living organisms</b>	unabridged classification of the animal and plant kingdoms. Included are essentially all of the pathogens and animal vectors of disease
<b>C</b>	<b>Chemicals, drugs and biological products</b>	a compilation of both generic and proprietary drugs each assigned to their respective class. A full listing of chemicals and plant products are also included
<b>A</b>	<b>Physical agents, forces and activities</b>	a listing of those devices and activities commonly associated with disease and trauma
<b>S</b>	<b>Social context</b>	a formative listing of social conditions and relationships of importance in medicine
<b>G</b>	<b>General linkage/modifiers</b>	a set of linkages, descriptors and qualifiers used to link or modify terms from each module

Table 2

Four ways to classify 'acute appendicitis'

<b>D5-46210</b>	Acute appendicitis, NOS
<b>D5-46100</b>	Appendicitis, NOS
<b>G-A231</b>	Acute
<b>M-41000</b>	Acute inflammation, NOS
<b>G-C006</b>	In
<b>T-59200</b>	Appendix, NOS
<b>G-A231</b>	Acute
<b>M-4000</b>	Inflammation, NOS
<b>G-C006</b>	In
<b>T-59200</b>	Appendix, NOS

The first version of SNOMED International contained 130,580 terms and codes in eleven axes. The composition of terms in this system had the potential to code almost all aspects of the health care process in fine detail. Version 3.5 was released in 1998 and contained 156,965 terms and codes.

The hierarchy of the nomenclature was represented by alphanumeric codes. Following is an example from the *Function* axis which demonstrates the hierarchical relationship:

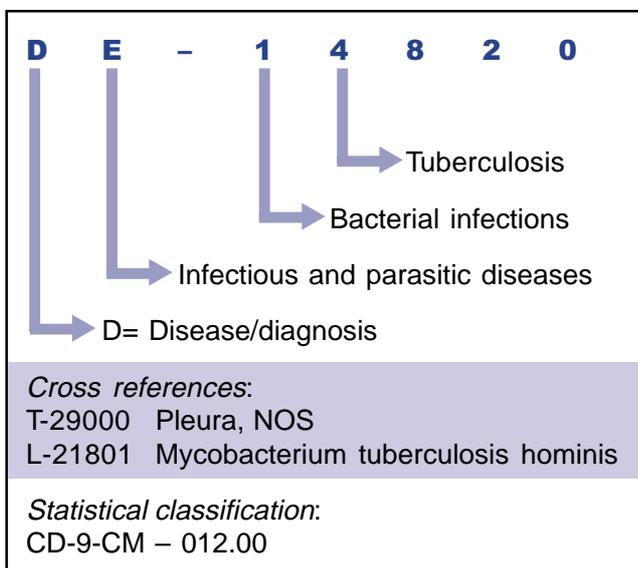
- F-28900 Apnea NOS
- F-28910 Initial apnea (includes primary apnea)
- F-28920 Late apnea (includes secondary apnea)
- F-28930 Apnea in the newborn (Apnea neonatorum)
- F-28940 Terminal apnea...

These codes were meaningful and provided contextual information (see Figure 1). Cross references were used to describe the essential characteristics of a disease and demonstrate the relationships between concepts thus representing clinical knowledge.<sup>1,2</sup> They were also used to demonstrate the relationship between the SNOMED International concept and the ICD-9-CM concept. For example, 'tuberculosis of the pleura' can be coded as DE-14820. The coded representation in Figure 1 shows that tuberculosis of the pleura is a bacterial infectious disease. The cross-references to the topography and living

organisms axes further define the entity. Tuberculosis of the pleura is classified to ICD-9-CM code 012.00 *Tuberculous pleurisy, unspecified* for statistical reporting purposes.<sup>2</sup>

The composition and hierarchical structure of SNOMED International were acclaimed as major strengths when the nomenclature was released. However, researchers have also identified some weaknesses.<sup>1</sup> A lack of rules governing the combination of terms in SNOMED International meant that nonsense terms, such as 'fracture of eyebrow' could be built. The same concept could also be coded in different ways. Evans et al<sup>4</sup> found seventeen different ways of classifying 'acute appendicitis' (see Table 2 for some examples). This creates problems in data retrieval, especially for electronic clinical decision support tools, when the relationships between these terms are not explicitly identified.

Figure 1  
SNOMED III example of coding of tuberculosis of pleura



SNOMED International's hierarchical structure allows terms to have only one hierarchical placement. For example, 'systemic lupus erythematosus' is both a connective tissue disorder and an autoimmune disorder. SNOMED International classifies it as a connective tissue disorder. This can create problems when retrieving information. A search for all cases of autoimmune disorders would not include cases of 'systemic lupus erythematosus'.<sup>1</sup> Users of the ICD are familiar with this problem. The hierarchical structure of the ICD is similarly represented.

Despite these weaknesses, SNOMED International was recognised in two landmark studies<sup>5,6</sup> as the "most comprehensive candidate" for use as the terminological base for an electronic health record.<sup>1</sup> The College of American Pathologists (CAP) recognised the

potential and weaknesses and embarked on its most promising upgrade to date – the transformation of the nomenclature into a reference terminology.

**SNOMED RT (Reference Terminology)**

SNOMED RT is a concept-based reference terminology that was released in 2000. Development began in 1997 and is the result of the combined efforts of the CAP and the team members of the Kaiser Permanente Convergent Medical Terminology Project.<sup>7</sup>

The NCCH defines a reference terminology as a core set of standardised terms, each uniquely identified by a code. It is based on a terminological model that defines the semantic relationships and hierarchy. Reference terminologies are best suited to electronic environments because concepts and concept relationships are explicitly represented. Previous versions of SNOMED expressed terms and their relationships in a hierarchy compatible with human, not machine, comprehension. In a reference terminology, the relationships between terms and concepts are explicitly expressed through description logic (or other formal knowledge-based representation mechanisms). Table 3 illustrates the explicit representation of concepts and terms in SNOMED RT.<sup>1</sup>

Description logic solves the problems in previous versions of SNOMED where different ways of classifying the same concept were not linked or related.<sup>8</sup> For each concept there must be only one preferred term. However, concepts can have many synonyms. For example, while the terms ‘winter itch’ and ‘pruritus hiemalis’ each have unique description identifiers, their concept identifiers are the same, indicating that ‘winter itch’ is synonymous with ‘pruritus hiemalis’. The term ‘cast’ has three different concept identifiers: a cast can be a device, a morphologic abnormality or a substance.<sup>7</sup>

The performance of SNOMED RT is yet to be extensively evaluated, so it was somewhat of a surprise when in April 1999 the College of American Pathologists announced a project to unite SNOMED RT and Clinical Terms Version 3 (formerly the Read Codes). The collaboration between the CAP and the United Kingdom’s National Health Service (Clinical Terms Version 3 is crown copyright to the NHS) is in recognition of their common goal in terminology development – to decrease duplication of effort

**SNOMED concept:  
Coronary atherosclerosis**

has topography coronary artery  
has morphology atherosclerosis,  
arteriosclerosis

Explicitly representing the essential characteristics of a concept through role relationships enables the computer to recognise that this disease affects the coronary artery and presents as a vascular sclerosis.

Parent/child hierarchy tables in SNOMED RT create explicit relationships between the more specific child term and the less specific parent term.

<i>Child term</i>	<i>Relationship</i>	<i>Parent term</i>
coronary artery	is a part of	heart
heart	is a part of	cardiovascular system
cardiovascular system	is a part of	body system
body system	is a part of	physical anatomical entity
atherosclerosis	is a	vascular sclerosis
vascular sclerosis	is a	degenerative abnormality
degenerative abnormality	is a	morphology
coronary atherosclerosis	is a	coronary artery disease
coronary artery disease	is a	heart disease
heart disease	is a	disease of cardiovascular system
disease of CV system	is a	disease

**Figure 3**  
**SNOMED RT example of an explicit representation of a concept**

and create a “unified international terminology that supports the integrated electronic medical record.”<sup>9</sup>

**SNOMED CT (Clinical Terms)**

SNOMED Clinical Terms (SNOMED CT) is due for release in 2002. It will incorporate SNOMED RT and Clinical Terms Version 3 – an estimated 300,000 concepts, 400,000 terms and more than 1,000,000 semantic relationships.<sup>7</sup> Mappings to classifications such as ICD-9-CM and ICD-10 will aim to create relationships between SNOMED CT and these classifications.

SNOMED RT and Clinical Terms Version 3 will continue to exist separately until SNOMED CT is well established. <sup>9</sup> SNOMED CT will undergo extensive testing before it is released – software developers will evaluate the technical functions while clinical domain experts will review the clinical content.<sup>7</sup>

## Conclusion

SNOMED (and its predecessors) has been used in Australia for more than thirty years, primarily in pathology laboratories (both private and public). The principal use is for the coding of histopathology reports for statistics and data retrieval. It is also used for coding cytology and by some of the state Pap test registers.<sup>10</sup>

More information about SNOMED can be obtained from their web site

<http://www.snomed.org>

or from the references cited. In particular, the journal articles by Karen Kudla are detailed and informative. The 1998 article can be downloaded from the AHIMA web site

<http://www.ahima.org/journal>

The 2001 article should soon be available from the web site. The recent presentations about SNOMED CT at the NCCH Conference can also be downloaded from our web site

<http://www.cchs.usyd.edu.au/ncch>

click on the link to the 7<sup>th</sup> Biennial Conference.

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# Mauritius and Seychelles

NCCH staff were looking closely for signs of a suntan following my recent missions for WHO in Mauritius and Seychelles. These are both beautiful islands or groups of islands in the Indian Ocean, and fall under the Eastern and Southern African team of the African Region of WHO. My mission was to make recommendations about the introduction of ICD-10 for inpatients and outpatients and to provide training for relevant staff in hospitals and Ministries of Health. On both occasions there was little time for beachcombing although I can recommend either or both for utter relaxation and escape in wonderful tropical environments.

## Mauritius

Mauritius has a well developed infrastructure for hospital medical record systems and extracts diagnoses and procedures for coding using



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ICD-9 and ICPM. ICD-9 is used for cause of death reporting. My recommendations were to introduce ICD-10 for both morbidity and mortality coding in 2002, and to consider procedure coding options in 2003. ▶

Medical record department and Ministry of Health staff were eager for training in classification and coding, but also in medical record systems and software support. The notification of hospital statistics is well developed, with outpatient as well as inpatient reporting. Guidelines are being introduced for non-communicable diseases such as diabetes, hypertension, coronary heart disease and asthma and there is a dedicated one person team supporting the registration of all cancers. The most notable feature of my visit was the enthusiasm and technical expertise of those involved, but as is often found in Australia, medical record systems have not always had the attention they deserve, and require some resources to make the most of the rich clinical data they contain.

### **Seychelles**

This last observation was even more true of Seychelles, where the population is smaller (~80,000 compared with Mauritius which has ~1.2 million). Seychelles has been coding using ICD-10 short lists for morbidity and mortality since 1996. Coding is currently done centrally in the Ministry of Health from diagnoses and causes of death notified from the hospitals and hospital wards (for morbidity) and from the Civil Status Office (for mortality). All (up to 3 per episode) diagnoses and causes of death are entered on database software, but current reports are on main condition or underlying cause only, so that the codes for additional diagnoses could provide a much fuller picture for reporting. I recommended that the full ICD-10 be used and that procedure information be captured from 2003.



***Mr Sukhdeo Pem and Rosemary Roberts at the training session in Mauritius***



***I-r Dr Mounkaila Abdou and Mr Danny Poiret, Acting Director, Environmental Health Services, Ministry of Health, Seychelles***

The Seychelles mission was joined with a team composed of WHO staff from Geneva and Harare who were promoting a Burden of Disease study in Seychelles. This experience brought home to me the importance of mortality data in such studies, and the potential that exists for using person related as well as episode related data. In this respect, Seychelles is in an excellent position, having a National Identity Number which has been in place since 1992 and allows linkage of all health service activities. This is particularly important in this country which is made up of a multitude of islands, some quite isolated, where communication is of utmost importance.

I hope that these experiences with the African Regional Office of WHO will lead to closer and ongoing relations with our western neighbour. There is certainly much to share with the two countries I visited, and with the other larger countries which make up the African Region. One of the outcomes of our involvement will be the participation of Dr M Abdou from AFRO in the Washington meeting of the Heads of Collaborating Centres for Classification of Diseases to be held in October this year.

▶ **Rosemary Roberts**  
Director

## the 10-AM commandments

**T**his regular feature provides guidance to clinical coders about frequently asked questions and aims to address those areas of coding which require immediate attention by clinical coders. Any major changes in practice (such as change of principal diagnosis sequencing for certain conditions) which may affect the integrity of state and national morbidity data collections will be flagged and should be introduced from the July following publication. If you find that any advice published in this section significantly changes your current practice, you should not do so until a suitable time in the collection year (January or July). You may feel it necessary in such circumstances to also seek advice from your state or territory health authority for a suitable date for implementation.

### Abdominal apron/overhang

Patients may present for surgery, (eg liposuction, radical abdominoplasty) with a principal diagnosis of either 'abdominal apron' or 'abdominal overhang'. In these cases 'abdominal apron' or 'abdominal overhang' refers to localised adiposity (E65 *Localised adiposity*), not lipodystrophy (E88.1 *Lipodystrophy, not elsewhere classified*). Lipodystrophy is a metabolic disorder of unknown cause. It may be a side effect of treatment with protease inhibitors in HIV-positive patients and is also associated with insulin resistance.

When the reason for surgery, such as localised adiposity, is documented, code this condition as the principal diagnosis even if the procedure performed is of a cosmetic nature. If the surgery is being undertaken for cosmetic reasons, Z41.1 *Other plastic surgery for unacceptable cosmetic appearance* should be assigned as an additional diagnosis. When the condition is not specified or is a term not indexed in ICD-10-AM, assign Z41.1 *other plastic surgery for unacceptable cosmetic appearance* as the principal diagnosis.

### Infected intravenous (IV) site

Infections related to intravenous access may be described as localised or systemic. Localised infections will be indicated by erythema, oedema, purulent discharge, pain and possibly pyrexia. Systemic infections associated with intravenous access devices may be difficult to recognise. The only symptoms may be low-grade pyrexia and an elevated white cell count. Generally, localised infections are associated with presence of the access device (ie insertion of the catheter) rather than the procedure of infusion, transfusion or injection.

The indexing under 'Infection, due to' provides guidance in this area. 'Infection, due to, infusion...' leads to T80.2 *Infections following infusion, transfusion and therapeutic injection*, whereas 'Infection, due to, device, catheter, infusion' leads to T82.7 *Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts*.

The following guidelines may help in the assignment of the correct codes:

When there is documentation of 'infected IV site' or other clinical evidence which indicates that the infection is localised, assign

- T82.7 *Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts*
- Y84.8 *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* (if the insertion was not performed as an open surgical procedure) together with the appropriate place of occurrence code.

When there is documentation of the infection being systemic and/or related to the procedure of infusion, transfusion or injection (rather than the access device), assign T80.2 *Infections following infusion, transfusion and therapeutic injection* Y84.8 *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* together with the appropriate place of occurrence code.

### Osteosclerosis

The term osteosclerosis describes hardening, thickening, and increased density of bone. It may involve part of a bone, a whole bone, or the whole skeleton. The most common form, ►

called osteopetrosis, is a rare inherited disease where bones become brittle and fracture more easily than do normal bones. Osteosclerosis may also develop in part of a bone as a result of an infection or tumour.

Currently, the index entry for 'osteosclerosis' leads to Q78.2 *Osteopetrosis*. This is not correct and will be amended in a future erratum. In the meantime, for all cases of acquired osteosclerosis, assign M85.8- *Other specified disorders of bone density and structure*. This code is reached by the index entry of 'Density, increased, bone'.

### Flow chart for anaesthesia and pain relief in obstetric patients

The flow chart for anaesthesia and pain relief in obstetric patients (see below) is a revised version of that published in the workbook for the ICD-10-AM Second Edition education workshops, held in early 2000. The NCCH had received a number of queries relating to the coding of combined spinal/epidural anaesthesia in obstetric patients.

The revised flowchart now indicates how this scenario is to be coded.

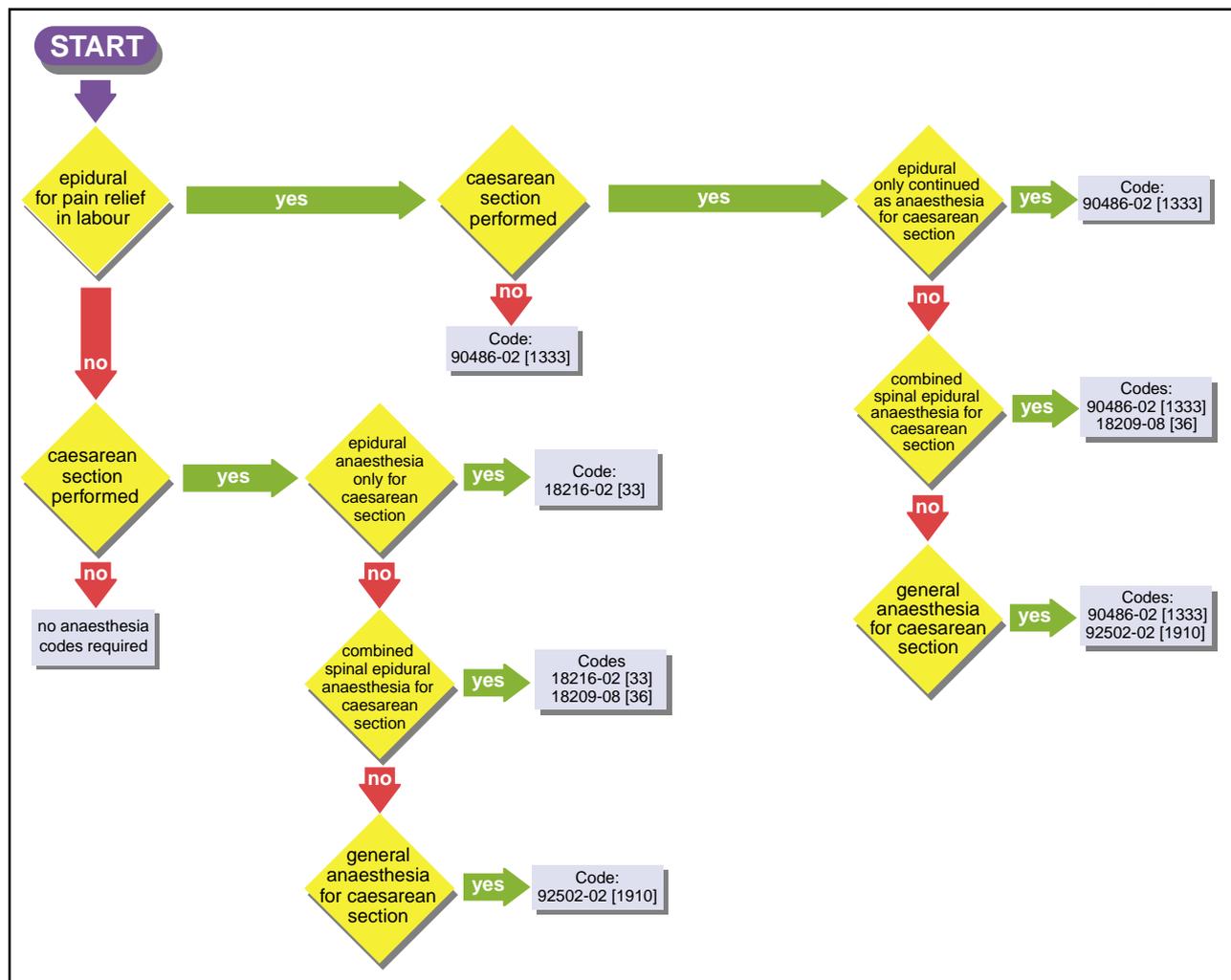
### Diabetes and osteoarthritis

Patients who have diabetes mellitus may also have a history of osteoarthritis. The code E1-.61 *\*Diabetes mellitus with diabetic musculoskeletal and connective tissue complication* should not be assigned in these cases. The Tabular List and Alphabetic Index will be amended in ICD-10-AM Third Edition to indicate which conditions should be classified to this code.

### Microvascular complications and diabetic foot

In Australian Coding Standard 0401 *Diabetes mellitus, E1-.71 Diabetes mellitus with multiple microvascular complications* is one of the conditions that can form part of diabetic foot. Please note that this entry is only included under the heading of category 3, 'Peripheral neuropathy'. This means that only when peripheral neuropathy is a component of microvascular complications that the code

**Flow chart for anaesthesia and pain relief in obstetric patients**



E1-.71 *Diabetes mellitus with multiple microvascular complications* meets the criteria for diabetic foot.

Therefore, if the patient has a condition listed under Category 1 *Infection and/or ulcer* and also has multiple microvascular complications including a neurological component, then E1-.73 *\*Diabetes mellitus with foot ulcer due to multiple causes* would be assigned. In ICD-10-AM Third Edition an additional note will be included under Category 3 *Peripheral neuropathy* to clarify this point.

### Diabetes with leg ulcer and peripheral vascular disease (PVD)

Diabetes mellitus with 'ulcer of leg' or 'ulcer of lower extremity' is coded differently from diabetes mellitus with 'ulcer of foot'. Ulcer of leg with diabetes should not be coded to E1-.73 *\*Diabetes mellitus with foot ulcer due to multiple causes* as this code is specifically for the condition of diabetic foot. Diabetes with an ulcer of the foot or leg not meeting the criteria for

diabetic foot should be coded to E1-.69 *\*Diabetes mellitus with other specified complication*. It is acknowledged that the index look-up for this condition, 'Diabetes, with, ulcer' has the non-essential modifier of 'lower extremity'. This entry has been amended in ICD-10-AM Third Edition to distinguish between ulcers of the foot and those of the lower extremity (ie leg).

### ICD-10-AM Chronicle

The NCCH often receives requests from morbidity data users about what changes have been made to ICD-10-AM since its creation. To meet that need, the NCCH plans to create a chronicle of all the major changes made to ICD-10 to create the three editions of ICD-10-AM. We anticipate that this will be an electronic document rather than paper-based with a search mechanism to find information by code or text. We plan to begin in earnest on this document in September after we have completed the content for ICD-10-AM Third Edition.



The University of Sydney



National Centre  
for Classification in Health

## Modifications to ICD-10-AM CALL FOR SUBMISSIONS

The National Centre for Classification in Health (NCCH) is inviting public submissions for modifications to the *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM)*. *ICD-10-AM* is a classification of diseases and procedures and is based on the World Health Organization statistical classification ICD-10. From 1 July 1999, *ICD-10-AM* became the Australian standard for morbidity classification in acute health services and day facilities. The fourth edition is due for national implementation from 1 July 2004.

The NCCH is an Australian centre of expertise in classifications for morbidity, mortality and health interventions and is responsible for the maintenance of *ICD-10-AM*. It is the intention of the NCCH to update *ICD-10-AM* biennially.

The main objectives of the public submission process are to ensure that *ICD-10-AM*:

- meets the needs of various users throughout the healthcare system
- continues to be a comprehensive and clinically meaningful classification.

The NCCH invites written submissions from interested members of the public and representatives of relevant agencies or organisations.

Clinical coders should note that they are able to submit via the public submission process. However this mechanism is not intended to replace or circumvent the standard procedures for addressing routine coding queries.

Written guidelines on the submission process can be obtained from

NCCH (Sydney)  
The University of Sydney, PO Box 170  
Lidcombe NSW 1825  
Phone: 02 93519461  
Fax: 02 93519603  
email: [NCCHAdmin@cchs.usyd.edu.au](mailto:NCCHAdmin@cchs.usyd.edu.au)  
or from the NCCH homepage:  
<http://www.cchs.usyd.edu.au/ncch/>

**Submissions must be lodged between 1 February 2002 and 28 February 2002**

NCCH (Sydney) is funded by the Casemix Program, Commonwealth Department of Health and Aged Care.

# The ICD-10-AM Mental Health Manual

*A classification for mental and behavioural disorders with glossary descriptions and diagnostic guidelines*

The NCCH has developed a diagnostic and classification tool for use in community-based mental health services in Australia. The *ICD-10-AM Mental Health Manual* is a subset of the ICD-10-AM Third Edition and has been adapted, with permission, from the World Health Organization (WHO), to include community-based mental health services. It also contains components from other WHO publications.

## Background

In 1998, the Victorian Mental Health Coding Special Interest Group (formed under the auspices of the Victorian branch of the Health Information Management Association of Australia Ltd) approached the Victorian Department of Human Services (DHS) to develop a suitable classification tool for Victorian community-based mental health services. The DHS recognised potential for the tool to be applied nationally and approached the Mental Health Branch of the Commonwealth Department of Health and Aged Care to fund the project. After discussions, the Department funded the NCCH to undertake the project.

*The benefits of introducing an ICD-10-AM mental health classification are that:*

- using ICD-10-AM provides continuity of coded data in the community and acute health sectors which maintains understanding and reliability of coded data. ICD-10-AM has been used to report mental health disorders in the acute care setting since 1998. The ability to transmit meaningful coded data across sectors is integral to the national electronic health record initiative
- a key stakeholder concern during planning was that community health clinicians must first be concerned with diagnosis, not coding. The *ICD-10-AM Mental Health Manual* includes diagnostic guidelines and glossary descriptions that make it useful as a diagnostic tool and a coding manual. The *Manual* also contains other WHO tools to assist in the diagnostic process



- ICD-10-AM is the classification of choice because its base, ICD-10, is a nationally and internationally recognised statistical reporting system. ICD-10-AM is maintained by the NCCH and has a biennial update cycle which allows for enhancements to be made while retaining some stability of the coded data produced.

## Project aims and objectives

The NCCH aims to:

- develop a subset of the ICD-10-AM Third Edition which includes diagnostic tools and a classification scheme in a small, portable format
- produce a diagnostic and coding tool which will create a common morbidity data language between the acute and community sectors
- improve the coding and data quality of diagnoses and interventions carried out during non-admitted episodes in mental health services
- educate mental health professionals to apply the *Manual* in terms of the diagnostic criteria and the coding process itself.

The *Manual* is a national product that is consistent with its parent classification, both being maintained by the NCCH. The translation of clinical information into code facilitates data collection, retrieval and reporting for the compilations of statistical information. There are also clear benefits in improved data quality and national consistency when data available from acute and community-based mental health services are available in the same 'language'.

## The ICD-10-AM Mental Health Manual Working Group

A working group has been established to solicit contributions to the *Manual's* development and to advise about education needs. The Group included psychiatrists, clinical psychologists, nurses, social workers, occupational therapists, health information managers, and data users such as epidemiologists and researchers from the Commonwealth Department of Health and Aged Care and the Australian Institute of Health and Welfare. The National Mental Health Information Strategy Committee, a body established under the Commonwealth's National Mental Health Strategy, is also represented on the Group.

## Structure of the ICD-10-AM Mental Health Manual

### Chapter One – Mental and behavioural disorders

Chapter One provides a list of the ICD-10-AM Third Edition Chapter V (F00-F99) categories of mental and behavioural disorders and glossary descriptions with diagnostic guidelines for each disorder.

The diagnostic guidelines in this chapter were drawn from the *ICD-10 classification of mental and behavioural disorders – clinical descriptions and diagnostic guidelines (CDDG)*.

### Chapter Two – Other (medical) conditions

Chapter Two contains a list of conditions from ICD-10-AM Third Edition, Volume 1, other than those from Chapter V Mental and Behavioural Disorders. They are provided so clinicians can record diagnoses associated with mental and behavioural disorders.

The majority of conditions are given only at the three character code level. Where deemed appropriate, four and five character codes are provided for certain diagnoses.

The conditions chosen for inclusion in this chapter were based on those in the annex of the *ICD-10 classification of mental and behavioural disorders – CDDG*.

### Chapter Three – Contextual factors

Chapter Three contains certain codes from ICD-10-AM Third Edition, Volume 1, Chapter XXI *Factors influencing health status and contact with health services*, with brief definitions.

This chapter provides clinicians opportunity to record contextual factors that are considered to:

- contribute significantly to the occurrence, presentation, course, outcome or treatment of the present mental and physical disorders recorded on Chapter One; or
- be of clear relevance for the clinical care of the present illness episode.

The contextual factors are grouped and formulated in accordance with ICD-10-AM Third Edition Z00-Z99 categories. The definitions were based on those in the *Multiaxial presentation of the ICD-10 for use in adult psychiatry – Axis Three*.

## Chapter Four – Mental health interventions

Chapter Four contains certain codes from Chapter XIX *Non-invasive, cognitive and interventions, not elsewhere classified* of the Australian Classification of Health Interventions (Volumes 3 & 4 of ICD-10-AM Third Edition). These codes provide clinicians opportunity to record interventions that are undertaken. Brief definitions are provided for most codes and some are based on those in *Management of mental disorders (third edition)*.

## Appendix One – WHO short disability assessment schedule (WHO DAS-S)

Appendix One is the short version of the WHO Disability Assessment Schedule (WHO DAS-S) which was derived from the WHO Psychiatric Disability Assessment Schedule (WHO DAS).

## Appendix Two – ICD-10-AM symptom checklist for mental disorders

Appendix Two is the ICD-10-AM Symptom Checklist for Mental Disorders – a semi-structured instrument intended for clinician assessment of the psychiatric symptoms and syndromes in the categories F00-F69 of Chapter One of the *Manual*. The checklist is derived from the WHO *ICD-10 symptom checklist for mental disorders v1.1*.

## Appendix Three – ICD-10-AM multiaxial diagnostic formulation form

Appendix Three is the ICD-10-AM adaptation of the WHO ICD-10 Multiaxial Diagnostic Formulation Form, structured specifically for use with the *Manual*. Diagnosis within the community-based mental health setting necessarily involves consideration of a number of different clinical features. By dealing with these features on axes that are separate from ►

the psychopathological pattern or syndrome, it has proved possible to record clinically useful information in a manner that is both more comprehensive and more comparable than that in the usual disease category approach. The *Manual* provides certain sections of the ICD-10-AM Third Edition in a format that is adaptable to multi-axial assessment.

The form was designed with reference to the *Multiaxial presentation of the ICD-10 for use in adult psychiatry* – Multiaxial Diagnostic Formulation Form.

### **Publication and implementation**

*The Manual is due to be released in January 2002 and is expected to be implemented in July 2002.*

### **Education**

Education is a final, but critical component of this project. The primary focus of the education program will be the synchronous use of the diagnostic guidelines and the classification system. The education strategy will take into account that community-based mental health practitioners are multidisciplinary and mobile in the community and team members are seldom together at one time. The NCCH is investigating

the feasibility of delivering face-to-face sessions by NCCH staff or community mental health team leaders trained by NCCH staff. The education package may also include some Internet-based components, although it is recognised that some community-based mental health services have limited or no access to computers and the Internet.

National education sessions are planned to run in the first half of 2002. Where possible, the NCCH aims to integrate education sessions with other training initiatives that may be conducted during this time by the Commonwealth under the Second National Mental Health Plan or the State/Territory Health Authorities.

### **Conclusion**

The *ICD-10-AM Mental Health Manual* is an exciting new initiative from the NCCH. It will provide a useful tool for community and other mental health clinicians and through its use, improve the quality and consistency of coded morbidity data in mental health services. It also marks another important step towards the establishment of a common clinical language in health – a vital part of an electronic health record environment with all the benefits to the patient and clinician that this will bring.

## **CASEMIX, DRGs AND CLINICAL CODING BOOK SERIES CD-ROM VERSION**

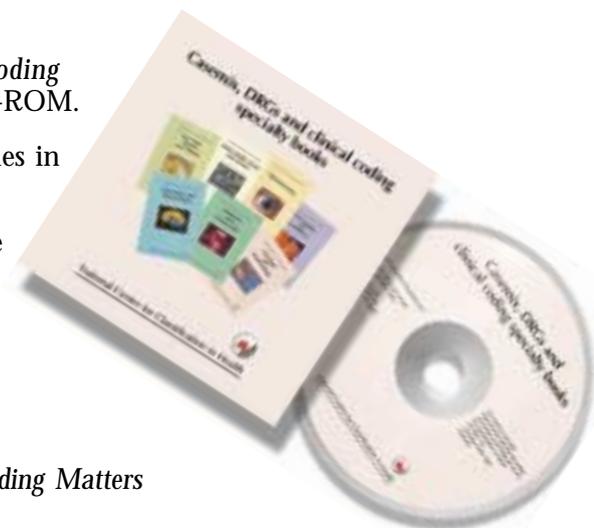
The ever-popular *Casemix, DRGs and clinical coding* series of specialty books is now available on CD-ROM.

The CD-ROM version includes all titles in the series in Adobe PDF format with a cumulative index.

The specialty book series provides an informative and useful resource of health information managers, clinicians and clinical coders.

**The cumulative index is also available from the NCCH website.**

*Book and CD-ROM versions of the series can be purchased by using the order form distributed with Coding Matters or by visiting our website:  
[www.cchs.usyd.edu.au/ncch/](http://www.cchs.usyd.edu.au/ncch/)  
and downloading the order form.*



# The WHO Update Reference Committee

**Maintaining the currency of a classification is an enormous and necessary task.**

**Credible classifications must:**

- provide a common language for clinicians and administrators
- be receptive to new disease processes
- accommodate emerging evidence of aetiologies of known diseases, new technologies and surgical procedures.

The NCCH has extensive experience in maintaining ICD-10-AM and contributes to international maintenance efforts in the roles of Chair/Secretariat of the WHO Update Reference Committee (URC).

It is 12 years since the *Report of the International Conference for the Tenth Revision of the International Classification of Diseases* recommended that:

**“WHO endorse the concept of an updating process between revisions and give consideration as to how an effective updating mechanism could be put in place”.<sup>1</sup>**

The URC has been firmly established in the last two years and its work has progressed.

## Purpose

The URC is responsible for recommending mortality and morbidity changes to the ICD-10 to the Heads of Collaborating Centres for

Diseases (HoC) each year. The URC is also responsible for developing policies on managing the update process.

## Policies

**Updates to ICD-10 are described as minor or major. Examples of minor updates include:**

- correction or clarification of existing index entry that only changes the code assignment to a code within the same three-character category
- enhancements to the tabular list or index (such as the addition of an inclusion term to an existing code; the addition of an exclusion note; the duplication of an existing index entry under another main term)
- corrections of typographical errors.

**Examples of major updates are:**

- addition or deletion of codes
- movements of codes between categories or chapters
- changes to existing index entries which alter the code assignment from one three-character category to another three-character category (movement of terms)
- changes to rules or guidelines which affect the integrity of morbidity or mortality data collections.

**Table 1 Update policy and version control**

ICD-10 Version	Minor/Major* (*inclusive of minor changes)	Publication on WHO website	Official implementation date
ICD-10 (1999)	Minor	January 1998	January 1999
ICD-10 (2000)	Major	January 1999	January 2000
ICD-10 (2001)	Minor	January 2000	January 2001
ICD-10 (2002)	Minor	January 2001	January 2002
ICD-10 (2003)	Major	January 2002	January 2003
ICD-10 (2004)	Minor	January 2003	January 2004
ICD-10 (2005)	Minor	January 2004	January 2005
ICD-10 (2006)	Major	January 2005	January 2006
ICD-10 (2007)	Minor	January 2006	January 2007
ICD-10 (2008)	Minor	January 2007	January 2008
ICD-10 (2009)	Major	January 2008	January 2009

## Work program

URC members annually submit proposed ICD-10 updates to the Secretariat between 1 February – 30 April. The proposals are collated and distributed to all members for comment. This process is reiterative and continues until the end of August when final recommendations are sent to WHO for distribution to the HoC in readiness for the annual October meeting. URC work is conducted by e-mail with one annual face-to-face meeting (at the HoC meeting).

## The URC Forum

The URC Secretariat established and manages an e-mail morbidity discussion list – the URC Forum (the forum) – to streamline work and improve turnaround. The forum provides a venue to continue discussions of work items and limits the need to collect, collate and re-distribute comments.

The forum also facilitates discussions about morbidity coding and classification issues in general. The URC Secretariat anticipates that the list will become an international classification and coding resource for ICD-10 in a similar way that Code-L assists Australian clinical coders. The secretariat moderates the URC business on the forum but does not moderate general morbidity coding queries.

## Submissions to URC

As well as managing the work of the URC, Australia is a significant contributor to this work. Of the 112 submissions received over the past two years, 49 have come from Australia. Some of these are:

- diabetes
- procedural complications
- necrotising fasciitis
- cerebral palsy
- obstetric sequela
- suicidal ideation
- Charcot's arthropathy
- gestational hypertension/transient hypertension
- laryngomalacia
- (persistent) pulmonary hypertension of newborn
- pseudomeningocele
- secondary pulmonary hypertension

- polycystic kidney
- appendicitis with peritonitis
- anaemia in myelofibrosis
- morbidly adherent placenta
- splenosis
- primary osteoarthritis

All submissions received are managed in a database. Each submission is uniquely identified, its progress tracked and decisions recorded. Official WHO Updates are prepared after final decisions are made at annual HoC meetings. They are produced in two formats: an individual list of official updates for the relevant year and a cumulative list of official updates, incorporating all updates since 1996. The official lists indicate the unique identifier, source, date update approved, type of update (major/minor) and implementation date. The official WHO updates are posted on its web site each January.

## Future challenges

As well as updating ICD-10 in all its formats (hardcopy and electronic files), all ICD-10 subsets, such as adaptations for oncology, dermatology, psychiatry, neurology also require updates. ICD-10 is translated into many languages (French, German, Finnish, Croatian, Icelandic, Japanese, Portuguese and Polish among others). Any changes made to the base classification are translated, analysed for their impact on the translated version and included, if relevant. Mapping tables demonstrate the relationships between changes in different versions of a classification and are essential for historical research. As the updating process for ICD is still in its infancy, a process for dissemination of updates to countries (Internet access or not) needs to be effected.

These issues will be discussed at the October 2001 meeting of HoC in Washington DC.

## Conclusion

The challenges to maintain classifications assume a different perspective at the international level. Balanced against the need to update is the requirement to maintain stability in a classification used for a myriad of purposes related to mortality and morbidity reporting. In its role as URC Chair/Secretariat the NCCH is well equipped for these international challenges through its experience in maintaining ICD-10-AM.

1 See ICD-10-AM Vol 1 page xxv for the full Report.

# ACHS Clinical Indicators: | Using PICQ

***The Australian Council on Healthcare Standards (ACHS) has recognised that an enhanced version of the Performance Indicators for Coding Quality (PICQ) software could be used to streamline clinical indicator data collection and enhance consistency between data provided by various health care organisations.***

NCCH has undertaken a preliminary review to determine the number of indicators that rely, fully or in part, on ICD-10-AM codes or *National Health Data Dictionary* (NHDD) fields for data abstraction. The aim was not to look only at indicators where the exact ratio is attainable through coded data, but to consider all instances where extraction of either the numerator or denominator could be facilitated.

This process also highlighted areas where review of Australian Coding Standards and coding practice may be necessary to enable the collection of data for indicator reporting. For example, there are a number of gastroenterology indicators that look at management of patients admitted with haematemesis and melaena. However, as current coding practice dictates that these conditions are not coded when there is an underlying condition identified as responsible for the bleeding, this data cannot be extracted from the morbidity database.

In the current PICQ product most of the data items required to run the indicators are data items related to coding and DRG assignment, such as separation date, ICD-10-AM codes or coding standard numbers. These parameters will be modified to accommodate application to the ACHS clinical indicators. For example, 'separation status' will be included to allow reporting of indicators relating to death or transfer.

Minimal enhancements were made to the PICQ software to test its application on a sample of clinical indicators. The prototype programming was tested against a large dataset of Australian morbidity data. This demonstrated that PICQ's reporting capabilities would provide a number of benefits that would simplify the data collection process, such as:

- creating multiple reports generated in one step
- allowing flexible report parameters
- organising reports by specialty
- allowing reports to be viewed on-screen
- permitting download into a separate database.

NCCH will be discussing this project and demonstrating the prototype software at the 13<sup>th</sup> National Casemix Conference in Hobart in September. At this early stage of development, feedback and suggestions from those currently collecting the data for clinical indicators is welcome and may be sent directly to Kerri Chalmers (K.Chalmers@cchs.usyd.edu.au).

UPDATE NOW AVAILABLE

## ICD-10-AM Second Edition Browser



- ▼ Easy to use
- ▼ All volumes in one searchable file
- ▼ Update includes all errata
- ▼ Network version available

*See order form distributed with Coding Matters or call 02 9351 9461 for further information about network or e-mail versions.*

## PICQ training in Singapore

The Singapore Ministry of Health (MoH) contracted the NCCH to create a version of *Performance Indicators for Coding Quality* (PICQ) to use with ICD-9-CM coded data sets. As part of the contract, the NCCH provided training in the use and implementation of PICQ for a group of Singapore public hospital coders, health information managers and information technology staff.

Training was conducted in Singapore 29–31 May 2001. Trainers were Shannon Watts (Quality and Education Co-ordinator), Andrew Brion (Technical Consultant, OR Systems) and Nikki Schmidt (Database and LAN Administrator).

Participants were enthusiastic, asked challenging and insightful questions and had a good depth of knowledge about PICQ and health information management. Feedback from participants indicate that they believe that PICQ is a useful quality tool that will be successfully implemented in Singapore to assist the effective management of health information.

The trainers met with MoH staff before and after the training sessions were completed. These meetings provided feedback from the training sessions and time to discuss the use and implementation of PICQ in Singapore.

The NCCH team considered the visit to Singapore very successful. The facilities were excellent and the Ministry of Health staff were extremely hospitable.

### Singapore Casemix Conference workshops

NCCH was represented at the inaugural Singapore Casemix Conference in August by Shannon Watts (Quality and Education Co-ordinator), Linda Best (Project Officer), and Andrea Groom (HIM Consultant). The team conducted five workshops:

- understanding coding and DRG pathways
- effective utilisation of casemix
- coding audits and the quality cycle
- coding and casemix working together
- the development of coding standards.



*The NCCH and Ministry of Health staff in Singapore l-r: Peter Lee, Lee Chien Earn, Nikki Schmidt, Shannon Watts, Siew Hwee, Kian Wei, Andrew Brion, Viktoria King*

### QED hosts visit from NSW Department of Health

Representatives from the Casemix Policy Unit of the NSW Department of health visited QED at La Trobe University in July. The NSW Department of Health has purchased statewide licences for *Performance Indicators for Coding Quality* and *Australian Coding Benchmark Audit*, and is investigating options for regular auditing processes.

### Training plan for implementation of ICD-10-AM Third Edition

A draft training plan to support the introduction of ICD-10-AM Third Edition has been presented to the Coding Standards Advisory Committee. Further details about planned training sessions will be published in the next edition of *Coding Matters* (December 2001), and on Code-L.

## NCCH and Singapore Ministry of Health MoU commemorated

The Memorandum of Understanding (MoU) between the NCCH and the Singapore Ministry of Health was commemorated during the inaugural Singapore Casemix Conference in August.

The MoU identifies the NCCH as an expert centre in health classification theory, and confers preferential status as a service and product supplier to the Ministry. Several projects have been carried out by the NCCH for the Ministry, including a series of workshops and creation of an ICD-9-CM version of PICQ for use in Singapore.



*Shannon Watts presented a plaque commemorating the MoU to Mr Moses Lee, Permanent Secretary of Health*

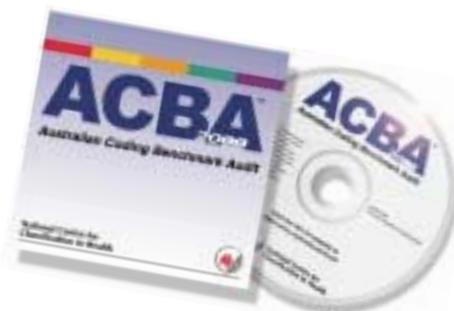
## PICQ and ACBA training in South Australia

Three one-day PICQ and ACBA training sessions were conducted in South Australia at the end of June following the South Australian Department of Human Services' purchase of statewide licences for PICQ and ACBA. Shannon Watts, Quality and Education Co-ordinator and Andrea Groom, Victorian HIM Consultant worked with 53 South Australian clinical coders, health information managers and IT personnel to familiarise these users with PICQ and ACBA. Participants received detailed explanations of the PICQ and ACBA concepts, information about data preparation and step-by-step demonstrations of PICQ and ACBA software.

## ICD-10-AM Browser update

The update for the ICD-10-AM Browser incorporating Erratas 3 and 4 is now available. It is available free to registered browser users or can be purchased using the NCCH order form. If you haven't received notice of your update contact Cath Stanhope on (02) 9351 9768 or by e-mail: [c.stanhope@cchs.usyd.edu.au](mailto:c.stanhope@cchs.usyd.edu.au)

# ACBA<sup>TM</sup> 2000



Health care decisions are dependent on good quality morbidity data. **Australian Coding Benchmark Audit 2000 (ACBA)** provides a mechanism to assess quality of coded morbidity data. **ACBA 2000** is a coding audit method that involves re-coding a sample of hospital-admitted patient episodes and uniformly recording results.

### ACBA

- **identifies** errors in coding practice
- **automates** results reporting

*See order form distributed with Coding Matters or call 02 9351 9461 for further information.*

# ICD-10 training in Bangladesh

***Another opportunity to work in south-east Asia! was my initial reaction to being asked by the NCCH to conduct an ICD-10 training course in Dhaka, Bangladesh. Very quickly I was excitedly planning another foray into Asia. I returned from an Indian adventure in 1998 with that inexplicable urge to return.***

It took a while for details to be sorted out with the Ministry of Health in Bangladesh, the World Health Organization South East Asia Regional Office (WHO SEARO) in Delhi, the NCCH and me. I landed at Dhaka airport on 5 May 2001.

I had visited Bangladesh twice before (my sister and her family lived there) but my last visit was in 1991 and Dhaka has changed quite dramatically. One thing that was unchanged is the gracious hospitality of the Bangladesh people. I was treated like visiting royalty.

The training facility for the course, the Institute of Epidemiology, Disease Control and Research, is situated within walking distance of the Ministry of Health. The nineteen extremely enthusiastic course participants were recruited from all of Bangladesh's health districts. After one of the participants asked "what is a limb?" we quickly adapted our teaching strategies to ensure that all levels of clinical knowledge would be accommodated. Only two participants (both doctors) had clinical knowledge. It was wonderfully helpful to be able to call on the doctors to translate in Bengali when our explanations of clinical terms and processes could not make the concepts clear in English.

Dr Sunil Senanayake from Sri Lanka assisted with the training. We took turns presenting and conducting coding exercises, which gave the participants a change of voice and reduced our vocal loads!



***ICD-10 course participants***

My Australian accent gradually changed into a pseudo-English-Bengali one that the participants found much easier to understand. I felt like a bit of a dill, but I was there to impart knowledge, and if changing my voice helped, then change my voice I did!

We adapted the NCCH training program to suit the participants. Dr Senanayake's MS PowerPoint presentations were much easier to use than overhead transparencies. We were both in awe that the power fluctuations seemed to be in our favour and on only two or three occasions had to turn in to 'real' teachers and use the whiteboard.

The 10-day training program was fairly intensive and I was continually amazed at the participants' enthusiasm. I must admit that I did get caught up in the enthusiasm, especially when participants mastered complex concepts and performed well in the coding exercises.

Unfortunately, it was not possible for the participants to visit a hospital and see medical records in a real setting. However, after a bit of negotiating, we were able to borrow medical records from a local hospital to show the participants. I am sure many readers are thinking "So much for confidentiality!"

The records were no more than a bunch of papers with no fasteners, other than folding pages over at a top corner! Each month, the papers for patients seen during the month are rolled up, secured with string and thrown on top of the pile in the cupboard! No one accessed the records from that point and if a patient returned in the new month, a new record was generated.

The lack of clinical information, and in particular, a definite final diagnosis amazed the participants. They coded as best they could from the records, but agreed that much needs to be done in basic medical record keeping before the records would be at a standard worthy of their own new coding sophistication! The final exam proved to be a source of great angst for most of the participants. ▶

Our assurances that the exam really was not *that* hard did nothing to reduce their anxiety. I am pleased to report that all nineteen participants passed the exam. The highest score was 97%, an amazing effort by a young statistician. I had noticed he had been very focussed for the entire 10 days of training and had obviously spent a lot of his free time reading over the 'rules' to make sure he understood the underlying logic. When I congratulated him on such an outstanding result, he remarked that he had seen this opportunity to receive training from an Australian as something quite special and he was determined to do his very best. This was a very humbling moment for me, who in the past, has taken opportunities to learn for granted.

In our final report, we advised that all participants should be given the opportunity to undertake medical terminology and basic anatomy and physiology courses before gaining proficiency to train others in ICD-10. Participants' feedback supported this advice.

The two and a half weeks passed very quickly and I enjoyed every minute. Yes, the weather was unbelievably warm and humid (my record is five showers in one day), and I was an object of undisguised curiosity, but I had a wonderful time!

***Dr Sunil Senanayake  
assists course participants***



***Kathryn Baxter with the  
ICD-10 course participants***

It was a fabulous opportunity to be involved in the inaugural training class for ICD-10 in Bangladesh. I met a terrific group of fun, hardworking and enthusiastic people who made me feel very welcome in their country. They excused my weird Australian accent and were very grateful for the opportunity they had been given to participate in the training. Time did not permit visits to all health districts (where of course I was invited) and what a wonderful opportunity that would have been. Perhaps I will return to Bangladesh one day, and hopefully I will have a few days to explore the country's rural regions.

The training course was a giant step in education for the Ministry of Health staff in Bangladesh. However, there is still so much to be done to establish basic medical record practices, and to equip coding staff with the knowledge to support their new coding skills.

I would like to thank NCCH Director Rosemary Roberts and Associate Director Sue Walker for their confidence as I represented the NCCH as a WHO short-term consultant.

I would like to acknowledge the hospitality of the Ministry of Health staff in Dhaka, and especially the friendship and support of Dr Sunil Senanayake.

▶ **Kathryn Baxter**

Kathryn Baxter is Project Leader, Computer Services, Southern Health Care Network, Melbourne.

# ACBA training course in Myanmar

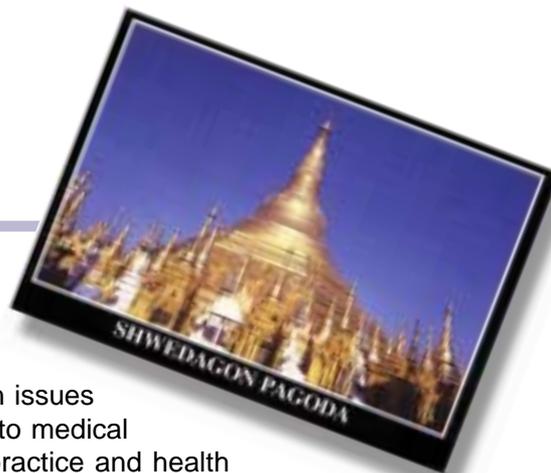
Conducting an Australian Coding Benchmark Audit (ACBA) training course in Yangon, Myanmar in July 2001 has provided a rewarding experience. Getting information about Myanmar was difficult and my family wondered if I should go there given the political unrest in recent times.

The *Intercountry workshop for trainers on the assessment of ICD-10 coding in countries of the region* was conducted for the World Health Organization (WHO) South-East Asia Regional Office (SEARO). The opening ceremony was quite an occasion. The Deputy Minister of Health and the WHO Resident Representative made speeches, followed by a rather substantial, sit-down morning tea. A report of the ceremony appeared on page two of *The New Light of Myanmar* – one of the country's newspapers. Wow, we were important!

The workshop's objective was to train the participants from Myanmar, Indonesia, Bangladesh, Sri Lanka and Thailand in the concept and application of ACBA over five days. The first four days were devoted to the presentation of the concepts and practical application of the ACBA tool. The fifth day was



**Andrea Groom and Daw Htay Htay Aye, Department of Health Planning, Myanmar**



spent on issues relating to medical record practice and health information management in the region. The range of coding skills and English comprehension and language levels presented a considerable teaching challenge.

Medical records supplied from local hospitals were used for teaching. There were some diagnoses I was not used to coding – cobra bite, worm colic, Koch's lung (TB) and '# BB' (fracture of both bones of the leg). We visited Yangon General Hospital and Central Women's Hospital where, after taking tea with the Medical Superintendents, the computer-assisted medical record systems were demonstrated.

Coding in Myanmar involves only the 'main condition' (principal diagnosis) which is presented to the coder in a pick-list of the 165 most common diagnoses (although others can be added). Additional information can be captured in drop-down boxes on the computer screen.

We managed to do a little sightseeing. Shwe Shwe Dagon Pagoda is stunning. It is huge – about 60 metres high – and glittering in gold. We were shown photos of the jewel-encrusted cupola and windvane at the top of the structure. At the tip of the pagoda is 76 carat solitaire diamond which is encrusted with 4351 smaller stones. There is plenty of evidence of Myanmar's abundance of precious and semi-precious stones all over this fascinating site.

The National Museum is filled with treasure that belonged to the royal family. (It was pointed out that these were the treasures that had been given back – many more remain in Britain).

The people of Myanmar were very generous in their welcome – from the WHO and Ministry of Health and Health Planning officials, right down to the hotel staff who straightened and tied the laces on shoes in my room each day!

▶ **Andrea Groom**

Andrea Groom is a health information management consultant

# Precision and recall as tools to measure information retrieval

## Introduction

Tools are available to measure the quality of retrieved information in queries of textual databases and online indexes such as search engines or library catalogues. In these environments keywords are used either singly or in combination to retrieve record sets. Precision and recall are measurements of quality in this setting. This short article describes these tools and how they have been applied in a small study at NCCH Brisbane that looked at the use of keywords in retrieving de-identified patient records.

## Background

Precision and recall are simple measures of the effectiveness of a computerised information retrieval system<sup>1</sup>, that quantify the relevance and comprehensiveness of the results of a keyword search. To calculate these measures it is necessary to 'know the denominator'. This is particularly true for precision. The diagram below illustrates the concepts.

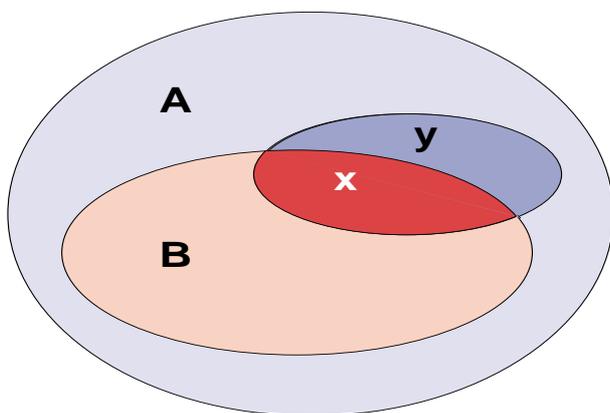


Diagram 1: A keyword query

Diagram 1 shows what happens when we do a keyword search. The return set (x+y) is a mixture of what we want (B) and what we don't want (A). Recall tells us how many results from a total possible set we obtained. It is a ratio, calculated in this instance as follows:

$$x / B \times 100\%$$

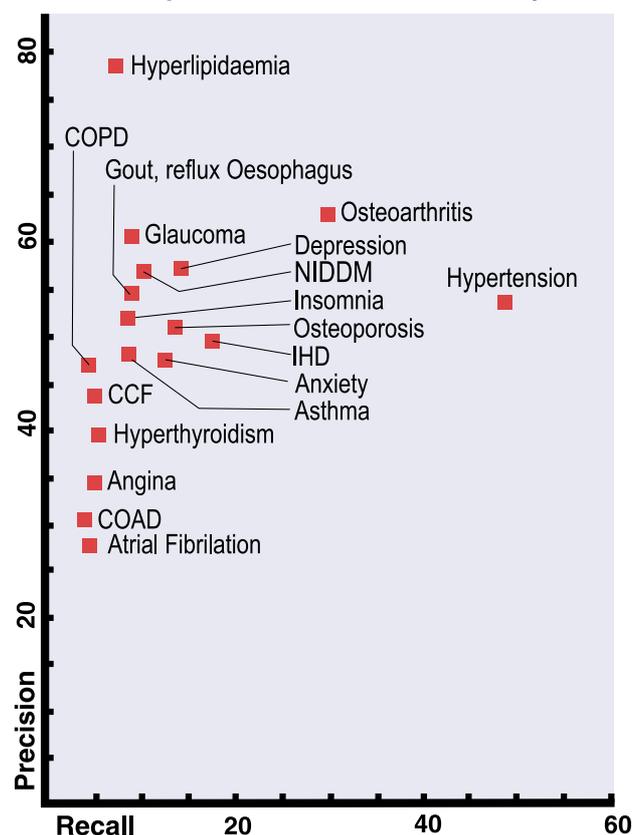
Precision tells us what fraction of the result set is appropriate (ie the "good ones") for the purposes of the search. In this instance, it is a ratio proportional to:

$$(x / (y+x)) \times 100\%$$

## Method

A small study was undertaken to look at the efficacy of certain diagnostic keywords in discovering further potential suitable candidates for a coordinated care health trial<sup>2</sup>. The top twenty diagnoses were culled from a sample of 300 de-identified patient records from the trial's first phase, after permission was obtained from the data custodian. Patient records were converted to individual web pages containing fields of ID, Assessment Status, Diagnosis 1, Diagnosis 2, ... Diagnosis 10. These web pages were then searched using the keywords and the precision and recall for the keywords determined. (It was the task to determine the

Graph 1: Precision vs recall for keywords



suitability of these diagnosis keywords in discovering records belonging to a certain assessment status. This was in the belief these keywords may describe a larger set of suitable patients for the health intervention.)

## Results

Graph 1 shows the two measures plotted against each other. 100% recall and 100% precision is desirable but has not been obtained. (This is normal and results of the order of 40% are considered reasonable.) As well, the general form of the results supports the contention that precision and recall are generally tradeoffs. In other words the larger the recall set, the smaller the proportion of suitable records becomes. These terms possessed moderate to high precision and low recall, although two keywords had acceptable levels of recall.

## Discussion

Keyword searches in nonstructured databases can be assessed by measures of precision and recall, and this is an established information management technique. Recall and precision

rates approaching 100% are only possible in structured databases<sup>3</sup>. Examples of these are relational databases and also some classifications where individual items have been recorded, such as a census<sup>4</sup>. In this study it would be useful to code the diagnostic terms and then repeat the analysis. Watch this space!

### ▶ Peter Scott

Peter Scott is Project Officer at NCCH (Brisbane)

- 1 Rowley JE (1992) *Organizing Knowledge – An Introduction to Information Retrieval*, 2nd Edition. Gower Publishing. United Kingdom.
- 2 <http://www.health.gov.au/hsdd/primcare/first/brisbane.htm>
- 3 Colomb R (1997) Impact of Semantic Heterogeneity on Federating Databases. *The Computer Journal* **40**(5): 235-244.
- 4 Colomb R. *ibid*

## AR-DRG V4.2: Addendum to the Definitions Manual

**The Australian Refined Diagnosis Related Groups (AR-DRG)** classification needs to be modified from time to time in line with changes to medical, surgical and coding practices. AR-DRG version 4.2 is a revision to the classification. It accommodates changes that occurred between the First and Second Editions of ICD-10-AM, and includes a number of fixes.



The AR-DRG version 4.2 *Addendum to the Definitions Manual* provides details of what is new and different about AR-DRG version 4.2. It is a single volume, with CD-ROM.

The AR-DRG version 4.2 *Addendum to the Definitions Manual* is \$50 plus GST. Copies may be purchased from the NCCH.



# NCCH People

## NCCH farewells a long-standing member of our team

Irene Kearsey, who has been a stalwart of the Quality and Education Division, has returned to her full-time commitment at the Victorian Department of Human Services. Irene's commitment to her projects is legendary, and the NCCH team will miss her valuable contributions. Irene has been a major contributor to QED's work in general, and particularly to the development of *Performance Indicators for Coding Quality*.



*I-r Irene Keasey and Rosemary Roberts*

## Peter Harkness

Peter Harkness has recently started work at NCCH in Brisbane as Quality Assurance and Training Officer. This is a conjoint appointment with the Queensland Trauma Registry. Peter holds a degree in Health Services Management (Information) from Charles Sturt University and is currently undertaking a master's degree in health information management. Peter has extensive experience in clinical coding and has previously worked as a consultant in clinical data in NSW, Tasmania and Queensland.



*Peter Harkness*



NCCH has 34 personnel  
employed at its three sites

## Professional experience

### Quality and Education Division

My placement with the Monash University National Centre for Coronial Information (MUNCCI) and NCCH has broadened my horizons about opportunities in the health information management sector. I found joining Karen Peasley at MUNCCI for almost two weeks of my placement to be a valuable experience.

I was involved in capturing information in a different way from what I had been exposed previously. But, I came to realise that it was not so different at all. The coding process is similar whether it reflects a stay in hospital or cause of death. Coded information is uploaded to either the Department of Human Services (Victoria) for hospitals or to MUNCCI from the coroners offices. A variety of classifications are used to capture data for the National Coroners Information System (NCIS). Once I grasped this concept, I began to understand the types of



**Emma Caldwell**

information, training and guides coronial coders need.

After working at MUNCCI, I spent three weeks with the Quality and Education Division of NCCH at La Trobe University. Some of the tasks I was involved with included preparing material for training, summarising evaluations from past coder education training sessions and updating the quality bibliography database. I was made to feel welcome and part of the team and contributed to many

projects in progress.

I would like to thank Karen Peasley, Shannon Watts, Irene Kearsey and the team at MUNCCI for their time and effort to ensure that I received the best benefit from the placements.

▶ **Emma Caldwell**

Emma Caldwell is a Bachelor HIM student (III), School of Public Health, La Trobe University.

### Student placement Sydney

Two weeks prior to returning to university for my final semester, Associate Professor Rosemary Roberts kindly allowed me an opportunity to work alongside the staff at the NCCH (23 July – 3 August).

During my placement, I helped Michelle Bramley to gather information needed to prepare an education strategy for the ICD-10-AM Mental Health Subset project. My task was to contact State/Territory Health Authority representatives on the National Mental Health Information Strategy Committee. I sought to determine the number of facilities requiring training in the use of the *ICD-10-AM Community Mental Health Manual*, plus suggestions for when and how to best conduct training sessions.

I also spent time retrieving data to map ICD-9-CM syndrome codes to ICD-10-AM codes and



**Karyn Chen**

collated them into an MS Excel spreadsheet, under the instruction of Monica Komaravalli. I left this unfinished task in the hands of Grace Kwaan (Masters student).

Several of the staff took time out of their busy schedules to discuss their respective roles and current projects with me. Thanks to Sheree, Rodney, Tina, Donna, Ann, Monica, Nicole and Michelle. I also spoke with Sue and the staff in Brisbane, and Karen and Shannon in Melbourne.

I found all of the staff at the NCCH friendly and helpful and felt very welcome during my brief stay. It was a positive and worthwhile experience.

▶ **Karyn Chen**

Karyn Chen is a HIM-III student, School of Health Information Management Faculty of Health Sciences, The University of Sydney.



The University of Sydney



National Centre  
for Classification in Health

The National Centre for Classification in Health, (NCCH), is funded by the Commonwealth Department of Health & Aged Care and employs 25 staff. The NCCH sets Australian standards for coding of diseases and procedures according to the International Statistical Classification of Diseases and Related Health Problems, Australian Modification Tenth Revision (ICD-10-AM). The centre produces classifications and standards for health services to describe patients' diseases and treatments in a uniform way.

**Quality Assurance (QA) Officer – Monash University National Centre for Coronial Information**

*(HEO Level 7, Full-time)*

**Reference No. D001946**

The NCCH is seeking a motivated individual for the position of Quality Assurance Officer at the Monash University National Centre for Coronial Information (MUNCCI). The position also provides support to the Quality and Education Division of the NCCH. This full time position is located in two offices: the MUNCCI office, Coronial Services Centre, Southbank, Victoria (4 days per week) and the NCCH Quality and Education Division, La Trobe University, Bundoora, Victoria (1 day per week). Negotiation of days and hours will be considered.

The successful applicant will be responsible for the systematic monitoring assessment and improvement of the quality, timeliness and completeness of the data supplied to the National Coroners Information System (NCIS). The successful applicant will liaise with data entry personnel at the participating coronial jurisdictions around Australia regarding the continuous improvement of the data quality. Duties relating to the Quality and Education Division, NCCH include providing support for the Quality and Education Manager, with projects relating to clinical classifications, education and data quality. Some coronial and mortality data research will also be required.

**Essential:** Tertiary qualifications in a health related area, quality management or equivalent experience. Skills in health data coding using ICD-10, ICD-10-AM, ICECI or other classification systems. Excellent understanding of medical terminology. Excellent oral and written communication skills, as well as excellent organisational and interpersonal skills and demonstration of the ability to work in a consultative environment. Experience in database interrogation, coding software along with good skills in the use of word processing, PowerPoint, spreadsheet and database applications. Knowledge of disease processes, surgical procedures and AR-DRGs is also required.

**Closing:** 28 September 2001

**Project Officer – Quality and Education Division**

*(HEO Level 7, Full-time)*

**Reference No. D001947**

The NCCH is seeking a motivated individual for the newly created position of Project Officer within the Quality and Education Division. The NCCH, Quality and Education Division is based at the School of Public Health, La Trobe University, Bundoora, Victoria. The successful applicant will be responsible to the Manager, Quality and Education Division. The position is full time, however, negotiation of hours will be considered.

The successful applicant will be responsible for providing assistance with the implementation and maintenance of the NCCH quality software products, the Performance Indicators for Coding Quality (PICQ) and the Australian Coding Benchmark Audit (ACBA). Other duties include the review of state and national morbidity data for coding quality issues, assistance in the coordination of a national coding auditor's network. Participation in the coordination of the PICQ and ACBA consulting service, and involvement in the development, preparation and presentation of coding and coding quality educational materials.

**Essential:** Tertiary qualifications in Health Information Management or other health related discipline. Knowledge of coding audit methods and experience in the analysis of coded data sets. Excellent oral and written communication skills. Excellent organisational and interpersonal skills as well as excellent skills in word processing, PowerPoint, spreadsheets, database and statistical applications. Sound experience in classification of diseases and procedures and coding using ICD-9-CM and ICD-10-AM. Good knowledge of medical terminology, disease processes and surgical procedures and knowledge of coding software and AR-DRGs is also required.

**Closing:** 12 October 2001.

Both of the successful applicants will be contracted employees of the University of Sydney, through NCCH (Sydney). Both positions will be for a fixed term to 30 June 2003, subject to the completion of a satisfactory probationary period for new appointees. Both positions may require some interstate travel.

**Remuneration package:** \$55,896 - \$60,895 p.a. (which includes a base salary Level 7 \$47,233 - \$51,457 p.a., leave loading and up to 17% employer's contribution to superannuation) effective 7 September 2001.

Enquiries and further information: **Karen Peasley, Quality and Education Manager, Phone (03) 9684 4458 (Mon – Thurs) or (03) 9479 1135 (Fri); Fax (03) 9682 7353, Mobile 0418 116 723 or email: karenp@vifp.monash.edu.au or k.peasley@latrobe.edu.au**

Applications should quote the reference number, address the selection criteria, include a CV, the names, addresses, e-mail, fax and phone number of two confidential referees and should be forwarded to: The Personnel Officer, College of Health Sciences, Cumberland Campus (C42), The University of Sydney, PO Box 170, Lidcombe NSW 1825.

*The University is a non-smoking workplace and is committed to the policies and principles of equal employment opportunity and cultural diversity. The University reserves the right not to proceed with any appointment for financial or other reasons. See <http://www.usyd.edu.au/>*

# QUIZ:

*Test your knowledge for fun!*

**1. The characteristic dyslipidaemia attributed to insulin resistance features:**

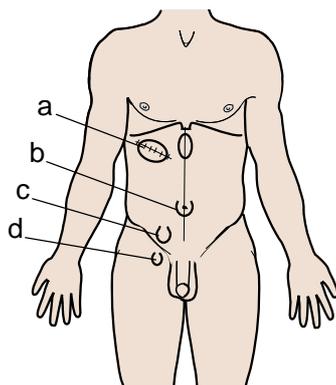
- a. Depressed triglycerides and elevated HDL-cholesterol
- b. Elevated triglycerides and depressed HDL-cholesterol
- c. Depressed triglycerides and elevated LDL-cholesterol
- d. Elevated triglycerides and depressed LDL-cholesterol

**2. Which is the odd one out and why?**

- a. LVF
- b. CHF
- c. IVF
- d. APO

**3. Name the hernias:**

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_



**4. When coding a mild cognitive disorder (F06.7) which term does not support the diagnosis?**

- a. Change, cognitive
- b. Disorder, cognitive
- c. Mental retardation
- d. Loss of memory

**5. Cluster B personality disorder relates to a group of personality disorders. Name two:**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

**6. What service would use the following terms?**

- a. bleaching
- b. wrought bar
- c. pulpotomy
- d. occlusal splint

**7. Is an infusion:**

- a. forced in by syringe
- b. blown in
- c. dropped in
- d. flowed in by gravity

**8. Where would you find the sigmoid sinus?**

- a. bowel
- b. chest
- c. head
- d. lower limbs

**9. Where did the NCCH 5<sup>th</sup> Annual NCCH Conference in 1998 take place?**

- a. Adelaide, SA
- b. Alice Springs, NT
- c. Coolumb, QLD
- d. Hobart, TAS

**10. What is the most up-to-date and preferred term for serious infection?**

- a. sepsis
- b. septicaemia
- c. fever
- d. bacteraemia

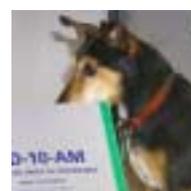
**11. The definition of metabolic syndrome requires how many of the following conditions?**

- a. diabetes mellitus (not type 1)
- b. obesity
- c. hypertension
- d. dyslipidaemia
- e. insulin resistance/hyperinsulinism

**12. Who is the odd person out and why?**



a. Rosemary Roberts



b. Flipper



c. Lindy Best, Project Officer



d. Lynn Lehman, a clinical coder

*Answers: Inside back cover*

# What do all those letters mean?

## A user's guide to some acronyms and abbreviations

It's not news to many involved in clinical coding, patient data or casemix that the field abounds with shortened word forms. This list will help to interpret the names of many committees, organisations, reports, classification systems and related concepts.

<b>A</b>		BPA	British Paediatric Association, <i>now known as Royal College of Paediatrics and Child Health</i>	DRML	Data-entry and Reporting Markup Language
AACR	Australasian Association of Cancer Registries			DSM	Diagnostic and Statistical Manual for Mental Disorders
ABS	Australian Bureau of Statistics	<b>C</b>		DSS	decision-support system
ACBA	Australian Coding Benchmark Audit	CAN	Coding Auditors Network	<b>E</b>	
ACBHSC	Australian Community-Based Health Services Codeset	CCCA	Casemix Clinical Committee of Australia	EAN 128	Barcode specification that is able to encode all the characters that are on a conventional keyboard
ACHS	Australian Council on Healthcare Standards	CCCG	Clinical Classification and Coding Group	EDI	Electronic Data Interchange (a form of e-mail)
ACHSE	Australian Council of Health Service Executives	CCSA	Clinical Coders' Society of Australia	EDP	electronic data processing
ACR	automatic character recognition	CDC	Centers for Disease Control and Prevention (USA)	EFMI	European Federation for Medical Informatics
ACS	Australian Cancer Society Australian Coding Standards	CEN	Coding Educators Network	EHR	electronic health record
AHA	Australian Healthcare Association	CEN-I	Coding Educators Network –International	EHRT	Electronic Health Records Taskforce
AHIA	Australian Health Insurance Association	CHIC	Collaborative Health Informatics Centre	EIS	executive information system
AHIMA	American Health Information Management Association	CHIME	Community Health Information Management Enterprise	EMR	electronic medical record electromagnetic radiation
AHMAC	Australian Health Ministers Advisory Council	CM	<i>Coding Matters</i> Clinical Modification	EPR	electronic patient record
AHSAC	Australian Hospital Statistics Advisory Committee	CMR	computerised medical record	<b>F</b>	
AHW	Australian Institute of Health and Welfare	COSTAR	Computer Stored Ambulatory Record System (developed by the Massachusetts General Hospital in the 1970s)	FDA	Food and Drug Administration (USA)
AIS	Abbreviated Injury Scale			FMRC	Family Medicine Research Centre
AMA	Australian Medical Association	CPT	(American Medical Association) Current Procedural Terminology	FTP	file transfer protocol
AMIA	American Medical Informatics Association			<b>G</b>	
AN-DRG	Australian National Diagnosis Related Group	CSAC	Coding Standards Advisory Committee	GALEN	General Architecture for Languages Encyclopaedias and Nomenclatures in Medicine
ANSI	American National Standards Institute	CSDD	Classification Support and Development Division (NCCH)	GPCG	General Practice Computing Group
APAMI	Asia Pacific Association for Medical Informatics	CUF	Classification Update Forum	GUI	graphical user interface
APHA	Australian Private Hospitals Association	CUI	concept unique identifier	<b>H</b>	
AR-DRG	Australian Refined Diagnosis Related Group	<b>D</b>		HCI	human-computer interaction
ASA	Australian Society of Anaesthesiologists	DBMS	database management system	HIC	Health Informatics Conference Health Insurance Commission
ASCII	American Standard Code for Information Interchange	DHAC	Department of Health and Aged Care	HIM	health information manager
ASERNIP/S	Australian Safety and Efficacy Register of New Interventional Procedures – Surgical	DHS	Department of Human Services (Victoria)	HIMAA	Health Information Management Association of Australia Ltd
		DICOM	Digital Imaging and Communication in Medicine	HIN	health information networks
<b>B</b>		DOCLE	Coding data system modelled on Linnaean classification principles	HIR	health information resources
BEACH	Bettering the Evaluation and Care of Health	DOH	Department of Health	HIS	hospital information system
		DRG	diagnosis related group	HISA	Health Informatics Society of Australia ▶

HL-7	Health Level Seven (standard to define computer-computer messages)	MEDLINE	A large database of abstracts of articles in the international medical journals at the National Library of Medicine (NLM)	PDQ	Patient Data Query – A database for oncology clinical trial protocols developed by the National Cancer Institute (US)
HTML	Hyper Text Markup Language	MeSH	Medical Subject Headings	PICQ	Performance Indicators for Coding Quality
<b>I</b>		MI	medical informatics	POE	physician order entry
IARC	International Agency for Research on Cancer	MIS	management information system	<b>Q</b>	
ICD	International Statistical Classification of Diseases and Related Health Problems	MPR	multimedia patient record	QED	Quality and Education Division (of NCCH)
ICD-10	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision	MSRB	Medicare Schedule Review Board	QUT	Queensland University of Technology
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification	MUNCCI	Monash University National Centre for Coronial Information	<b>R</b>	
ICD-10-PC	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Primary Care	<b>N</b>		RAM	random access memory
ICD-O	International Classification of Diseases - Oncology	NAHCC	National Allied Health Casemix Committee	ROM	read-only memory
ICECI	International Classification of External Causes of Injury	NCIS	National Coroners Information System	<b>S</b>	
ICF	International Classification of Functioning, Disability and Health	NHDC	National Health Data Committee	SDI	selective dissemination of information
ICNP	International Classification for Nursing Practice	NHDD	National Health Data Dictionary	SGML	Standard Generalised Markup Language
ICPC-2+	International Classification of Primary Care Second Edition Plus	NHIM	National Health Information Model	SNOMEDCT	Systematized Nomenclature of Human and Veterinary Medicine – Clinical Terminology
IFHRO	International Federation of Health Records Organizations	NHIMAC	National Health Information Management Advisory Council	SNOMEDRT	Systematized Nomenclature of Human and Veterinary Medicine – Reference Terminology
IMIA	International Medical Informatics Association	NHIMG	National Health Information Management Group	SNOP	Systematized Nomenclature of Pathology (a nomenclature system – a predecessor to SNOMED)
IRD	information requirement determination	NHISAC	National Health Information Standards Advisory Council	SQL	Structured Query Language
ISDN	Integrated Services Digital Network	NHISP	National Health Informatics Standards Plan	<b>T</b>	
ISO	International Organization for Standardization	NHMRC	National Health and Medical Research Council	TCP/IP	Transfer Control Protocol/ Internet Protocol
<b>K</b>		NHS	National Health Service (UK)	TGA	Therapeutic Goods Administration
KADS	knowledge acquisition and design structuring	NIS	nursing information system	<b>U</b>	
KBS	knowledge-based system	NLM	National Library of Medicine (USA)	UMLS	Unified Medical Language System
KPS	kilobytes per second	NLP	natural language processing	<b>W</b>	
<b>L</b>		NPSU	National Perinatal Statistics Unit	WAN	wide area network
LAN	local area network	<b>O</b>		WHO	World Health Organization
LOINC	Logical Observation Identifiers Names and Codes	OCIS	Oncology Clinical Information System	WHOHOCC	World Health Organization Heads of Collaborating Centres
<b>M</b>		OCR	optical character recognition	WHO URC	World Health Organization Update Reference Committee
MAIC	Motor Accident Insurance Commission	<b>P</b>		WHOSEARO	World Health Organization South East Asia Regional Office
MBS	Medicare Benefits Schedule	PACS	picture archiving and communications systems	WHOWPRO	World Health Organization Western Pacific Regional Office
MCCA	Medicines Coding Council of Australia	PAS	patient administration system	WONCA	World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians
MDC	major diagnostic category	PBS	Pharmaceutical Benefits Schedule	WORM	write once, read many times
		PCL	Printer Control Language	<b>X</b>	
		PCR	parent-child relationship (a hierarchical relationship between records in a database)	XML	eXtensible Markup Language
		PDF	Portable Document Format		
		PDMS	patient data management system		

# <feedback>

17 July 2001

Hello

*I would like to thank the team who produce Coding Matters for the June issue this year. This has been a much more informative and interesting issue than the previous ones.*

*The articles about the various groups, forums and committees and the work they have done or are doing, have been very informative giving me wider knowledge of what is going on in the field and also giving me a real sense of inclusion in the dynamic processes 'behind the scenes'. While reading these articles I felt a greater involvement, even though remote, in the development and review processes.*

Thank you again

Lynne Budworth  
Clinical Coder  
Gold Coast Hospital

Thank you Lynne! It's wonderful to get feedback from readers, and especially good when it is positive feedback. At 'Coding Matters Central' there has been a lot of discussion in the past few months about how we can best meet the needs and interests of our readers. We're glad that you got a sense of some of the behind-the-scenes activities, which was our aim.

Just about everyone at the NCCH contributes to most editions, as well as many invited contributors.

The publication team is always pleased to receive readers' comments.

AJ and RB

## QUIZ ANSWERS

- |  |  |
|--|--|
| 1. b   | 5. a. Antisocial   |
| 2. c. IVF: In vitro fertilisation:<br>All the others are related to congestive heart failure<br>LVF: Left ventricular failure,<br>CHF: Congestive heart failure, APO: Acute pulmonary oedema | b. Borderline<br>c. Histrionic<br>d. Narcissistic  |
| 3. a. Incisional<br>b. umbilical<br>c. inguinal<br>d. femoral  | 6. Dental service<br>7. d<br>8. c<br>9. b<br>10. a<br>11. Two<br>12. Rosemary, as she doesn't code on a regular basis. |
| 4. c   |  |

# PICQ<sup>TM</sup> 2000

**Performance Indicators for Coding Quality (PICQ)** is a set of predetermined performance indicators which identify coding variation in a defined dataset.

When coding variations are identified, causes can be investigated and corrective action taken.



## PICQ:

- **identifies** data problem areas
- **identifies** specific records for correction
- **suggests** possible problem causes
- **suggests** possible corrections

See order form distributed with Coding Matters or call 02 9351 9461 for further information.

# coding matters



Volume 8 Number 2 September 2001

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# HIMAA DISTANCE EDUCATION COURSES

## 2002 Enrolments Open Now

### HIMAA Comprehensive Medical Terminology Course

Know anyone who needs to have a thorough understanding of Medical Terminology or who is preparing for the clinical coding subject? Comprehensive Medical Terminology Distance Education Course lays the ground work for those wishing to progress to Clinical Coding. A Challenge Examination is available to test the Medical Terminology pre-requisite for coding or the need to undertake the Comprehensive Medical Terminology Course.

### Introductory ICD-10-AM Third Edition Coding Distance Education Course

This Clinical Coder training course is designed for those who have never coded before. It assumes no prior knowledge of clinical coding and begins with the basics of disease and procedure classification, coding from medical record information. In this course students will learn to use the ICD-10-AM classification system. Next intake closes 12 February 2002.

### Intermediate ICD-10-AM Third Edition Coding Course

Enrolments in this distance education course is open to those with previous coding training and/or coding experience including all past Introductory ICD-10 or ICD-9 students, health information management graduates and OTEN introductory coding course graduates. Next intake closes 1 February 2002.

### HIMAA Education Services

<http://www.himaa.org.au/education.html>  
or inquiries e-mail to [denisej@himaa.org.au](mailto:denisej@himaa.org.au)

### Advanced ICD-10-AM Third Edition coding course

The HIMAA Advanced coding course is designed for those who already have significant experience in clinical coding and who wish to gain exposure to a broad casemix at an expert level.

The course will develop understanding of current advanced level coding issues and also help coders to develop research skills for their own ongoing education in the future.

It may be viewed as preparation for the Coder Certification exam but **is not** an essential prerequisite for the exam.

First intake closes 1 March 2002

## HIMAA MEMBERSHIP OPEN

HIMAA is the national professional organisation representing health information managers (HIMs) and others who have an interest in health information management. Member benefits include subscription to HIMAA e-Newsletter, Health Information Management e-Journal, discounts on publications and professional development activities and conferences, participation in state branch activities, membership certificate plus more. Membership categories: Full Member (HIM Graduate), Associate Membership, Student Membership and Organisational Membership. Membership Information: e-mail [membership@himaa.org.au](mailto:membership@himaa.org.au) or phone: (02) 9887 5001



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