

coding matters



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New External Cause Categories in ICD-10-AM Third Edition



Sports injuries can now be classified by activity

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The External Causes chapter of ICD-10-AM (Chapter XX) has developed considerably between the Second and Third Editions. The greater specificity will make Australia's hospital statistics more useful for injury prevention and control.

Special Injury Edition

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Some major gaps in information are now being filled. In particular, sports injury and work-related injury are beginning to be described to a level of detail in keeping with the importance of these activities as settings for injury.

Other developments reflect changes in patterns of risk (eg the emergence of four wheel drives as common vehicles on Australian roads); recognition that some useful categories were lost with the change from ICD-9 to ICD-10 (eg poisoning by motor vehicle exhaust gas); demand for more detail on the circumstances of some common types of hospitalised injury (eg falls by children from playground

equipment); and interest in achieving capacity to distinguish certain case types that attract much interest, though the case frequency may be low (eg shark attacks).

The changes arose out of a consultation process managed by the National Centre for Classification in Health and reflect views of people concerned with injury prevention and control in Australia about topics and categories that would increase the value of hospital separations data for injury prevention and control. Practicability of implementation was kept in mind, and clinical coders participated in the process of identifying topics and designing new categories. All of the changes provide more specific categories by splitting existing external cause categories. Thus, data collected according ICD-10-AM Third Edition can be made compatible with data collected according to earlier versions of ICD-10-AM by collapsing the new categories into the broader ones available in previous editions.

Transport-related injuries

Not many years ago, four wheel drive vehicles were uncommon on Australian roads. They are now common. These vehicles tend to have characteristics that present special risk to their occupants, and to other road users. These characteristics include large mass, high centre of gravity and limited occupant protection. Chapter XX treated these vehicles in a way that was appropriate for uncommon, special purpose vehicles: briefly and somewhat ambiguously. The new edition treats these vehicles as cars (V40-V49) and introduces a fifth digit classification to distinguish several major types, one of which is 'all-terrain four-wheel drive' vehicles. This approach also enables distinction of 'people movers' and the much less common but hazardous 'quad cycles' and related four-wheeled motor cycles.

A related development is enhanced capacity to distinguish types of motorcycle, particularly the types designed for off-road use such as 'dirt bikes' and 'ag bikes' on farms.

Some transport-related injuries are recorded as being intentional, or of undetermined intent. To date, there has been essentially no capacity in the ICD to record information about the nature of these events. A fourth character expansion has been provided to enable the 'counterpart' (another vehicle, a fixed object, etc.) to be recorded in these cases.

Falls

Information about the circumstances in which falls occur is one of the foundations of prevention. The fourth character position has been used to increase the specificity of information about types of recreational conveyances from which falls often occur. W02 is one of the new categories for falls involving the small folding scooters that have become common in the past two years. W09 is about types of playground equipment. It will be possible to code 'falls on the same level' (W01) separately according to whether they result from slipping, tripping, or stumbling.

Sports injury

Sports injuries are very common, but the ICD has provided very little information about them. The first step towards rectifying this in national hospital data was taken in the second Australian edition of ICD-9-CM. Item E889 was provided to enable sport-related cases to be identified, and to enable a few major types of sporting activity to be distinguished. A new feature of ICD-10-AM is the 'activity' classification in the external causes chapter. Originally, this provided the capacity to distinguish injury 'while engaged in sports activity' but no further detail. ICD-10-AM Second Edition re-introduced the short list of types of sport distinguished by the fourth digit of E889 (this was made possible by treating the 'activity' item, and the 'place' item, as essentially separate items, rather than as fourth and fifth character expansions of external cause codes). During development of ICD-10-AM Third Edition, there was found to be strong user demand for extension of this list for example, to distinguish 'boxing'. Technical factors would have prevented any extension of the list of sports under the approach used to include 'activity' codes in the Second Edition (that is, as a fourth and fifth digit expansion of Y93). The most satisfactory solution was to move the activity classification to the unused range of ICD-10 codes commencing with the letter 'U'. The list of 'types of sport' included there is based on the one in the International Classification of External Causes of Injury (ICECI) version 1.0. That in turn was based on one that forms part of the Australian Sports Injury Data Dictionary.

In addition, a fourth character expansion has been added to W21 to improve understanding of circumstances of common types of sports injury. Finally, the existing category 'sports and athletics area' in the place classification has been expanded to distinguish several types of venue

(ie outdoor sporting grounds, indoor sporting facilities, swimming centres, racetracks, equestrian facilities, skating rinks and skiing facilities).

The changes in ICD-10-AM Third Edition, combined with the classification's existing high quality information about injury diagnoses and procedures should greatly enhance understanding of the occurrence of serious sports injury in Australia.

Work-related injury

For many years, work-related injury has been an important blind-spot in ICD. Categories were available in ICD-9 to identify a few types of case, such as involving railway workers, and the place classification gave some clues. However, only with the introduction of the ICD-10 activity classification has there been a category defined in terms familiar to contemporary occupational health and safety, that is, injury while working for income. ICD-10-AM Third Edition takes this capability a step further, by providing sub-categories for work-related cases occurring in eight major industry sectors including mining, construction and health services. This will make information based on hospital separations data substantially more useful for purposes of occupational health and safety.



ICD-10-AM Third Edition provides sub-categories for work-related cases

Intentional self-harm

Motor vehicle exhaust gas is one of the more common means of suicide in Australia.

ICD-9 provided a specific category for this external cause (E952.0). In ICD-10, this cause is included in the broader category X67 *Intentional self-poisoning by and exposure to*

Practicability of implementation was kept in mind, and clinical coders participated in the process of identifying topics and designing new categories

other gases and vapours. A fourth character expansion has been added, chiefly to enable specific identification of motor vehicle exhaust gas cases. For consistency, the same capability is provided for accidental poisoning, assault and poisoning of undetermined intent.

Assault

Some categories in the 'Assault' section of the ICD-10 external causes chapter enable the type of perpetrator to be distinguished (Y06 and Y07). In ICD-10-AM Third Edition this approach has been extended to the whole of the assault section. Some categories are:

- spouse or domestic partner
- parent
- carer
- person unknown to the victim.

Cutting and stabbing are common modes of assault. Existing categories provide no information on the types of sharp objects used. A fourth character expansion of X99 will enable distinction of some common such as knife or glass, and high-interest (eg hypodermic needle) types. A parallel extension has been provided for self-harm and undetermined intent cases involving a sharp object. (A technical difficulty prevented application of the same change to categories for accidental injuries by sharp objects.)

Machinery

Expansion of item W30 at fourth character level will enable major types of agricultural machinery involved in injuries to be identified.

Similar expansion of W31 will provide categories for some other major types of injurious machinery. Among other benefits, these categories will enhance the value of the expanded capability to code work-related injuries (described above).

Animal-related injury

Several changes will improve capacity to identify injury cases resulting from contact with animals.

The changes allow:

- biting to be distinguished from other types of harm involving dogs, such as being knocked over
- falls from horses, and falls from other animals, to be distinguished from other events included in category V80.0
- sharks to be distinguished from other marine animals (W56) and platypus from other specified venomous animals (X27)
- contact with snakes to be coded according to whether the snake is known to be venomous (in which case categories are provided for several types), or is known to be non-venomous, or venomousness is unknown (W59 and X20). (There was no satisfactory category for unknown venomousness previously)
- more specific coding of some noteworthy types of arthropod, where recorded, for example, funnel web and red back spider; jumper ants and fire ants

- identification of some types of venomous marine animals (eg box jellyfish, stone fish, venomous octopus (blue-ringed, for example))

Other changes

Other changes enable:

- doors to be distinguished from other causes of crushing injury, such as 'of fingers' (W23)
- drowning and immersion in a 'spa, Jacuzzi or hot tub' to be distinguished from drowning and immersion in a bath, or in a swimming pool. (This will also resolve a coding ambiguity)
- distinctions between injury due to contact with: hot drink, hot food and hot fat and cooking oil (X10); running hot water (such as from a tap or shower) and contained hot water (as in a bath) (X11); and steam from motor vehicle radiators, steam or hot vapours from food, and steam or hot vapours from other sources (X13)
- more specific identification of 'place of occurrence', by further use of the fifth character.

New categories distinguish:

- 'driveway' from other parts of the home (vehicles are sometimes reversed over small children)
- 'roadway', 'sidewalk' and 'cycleway' as parts of street and highway
- provision of categories for several types of residential institution (notably 'prison' and 'aged care facility')
- sporting facilities (listed above) to be identified
- trade and service areas including 'shop and store', 'office building', 'café, hotel and restaurant' to be recorded
- industrial and construction areas, for example 'construction area', 'demolition site', 'factory and plant', 'mine and quarry' to be documented
- other places – 'stream of water', 'beach', 'forest', 'parking lot' can be defined.

Inclusions and terminology are based closely on ICD-10.

▶ James Harrison

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CLINICAL CODERS'



SOCIETY OF AUSTRALIA

ACN 075 387 727

THE CLINICAL CODERS' SOCIETY OF AUSTRALIA LTD was established in 1996 and is affiliated with the Health Information Management Association of Australia (HIMAA).

The CCSA constitution states that the primary objective of the Society is to provide a forum and also support for clinical coders and those interested in the coding of health care data.

The CCSA aims to provide members with advice on workforce and professional issues, continuing education activities, coder accreditation support, regular publications, in addition to helping to raise the profile of the clinical coders and to promote the understanding of the value of coded data.

The constitution of the CCSA enables membership to be offered to clinical coders, health information managers and those interested in clinical coding.

The CCSA is managed through a Board of Directors comprised of a member from each state and territory and a HIMAA Board member who will act as an ex-officio director.

The membership fees are \$50 annually with a one off \$30 initial joining fee. These fees are tax deductible.

For further information contact:

www.himaa.org.au/CCSA

(membership information and forms on-line);

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CCSA Membership

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What's new in Third Edition?

In keeping with the bee theme at the NCCH 7th Biennial Conference, the NCCH has been a hive of activity over the past few months in the final production stages of ICD-10-AM Third Edition.

The word 'export' has taken on a new meaning as the carefully revised volumes are extracted from the ICD-10-AM database, checked and cross-checked, before the processes of typesetting, proofing and finally, publication, occur.

The following is a summary of the major changes that will be effective with ICD-10-AM Third Edition.

Diseases

A significant number of disease codes have been expanded at fourth or fifth character level. For example:

- Codes at category P07 *Disorders related to short gestation and low birth weight, not elsewhere classified* have been expanded to further specify the weight ranges
- Category F32 *Depressive episode* has a fifth character indicating whether the condition arose within the postnatal period
- Category Z06 *Infection with drug-resistant microorganism* has fourth character breakdown to identify MRSA or VRE.

The aetiology 'daggers' were removed from 68 codes, where the dagger codes duplicated information already contained in the manifestation 'asterisk' code.

The perinatal and congenital chapters (P and Q codes) were expanded to update the classification in line with the recently released British Paediatrics Association version of ICD-10.

Morphology

Morphology codes have been reviewed in light of the release of International Classification of Diseases for Oncology, Third Edition (ICD-O-3). ICD-O-2 was published in the late 1980s and since then significant changes to the classification of morphology have occurred.

This is particularly important in the lymphoproliferative disorders (leukaemia and lymphoma) where knowledge about their classification has progressed quickly and has made ICD-O-2 inappropriate.

External Causes

Codes within Chapter XX *External causes of morbidity and mortality* have been expanded to improve the reporting on cause of injuries. This revision was performed primarily in response to a public submission received from the National



Injury Surveillance Unit. Many of the changes have been made with direct reference to the International Classification of External Causes of Injury (ICECI).

Areas expanded include:

- X20 – X29 *Contact with venomous animals and plants*
eg X20.0 *Contact with venomous snake* requires a fifth digit to identify the type of snake
- X85 – Y09 *Assault* requires a fifth digit to identify the relationship of the perpetrator to the victim
- V90 – V94 *Water transport accidents* codes require a fifth digit to identify the type of watercraft
- W00 – W19 *Falls*
eg W09 *Fall involving ice-skates, skis, roller skates or skateboards* requires a fifth digit to identify the equipment involved (ie snow ski, water ski, snowboard etc).

Category Y93 *Activity* has been deleted and a much expanded section, U50 – U73 *Activity*, has been created.

The majority of the new codes are contained within the section U50 – U72 *While engaged in sports and leisure*. Many sporting activities previously bundled under Y93.08 *While engaged in sports, other* now have specific codes, for example:

- U61.32 *Karate*
- U53.1 *Jet skiing*
- U56.1 *Jogging and running*

Procedures

In ICD-10-AM Third Edition, the procedure classification (Volumes 3 and 4) has been renamed the *Australian Classification of Health Interventions (ACHI)*. (See page 10).

Modifications based on changes to the Medicare Benefits Schedule (MBS) from November 1999, May 2000, November 2000 and May 2001 have been included.

The first edition of ACHI (then known as MBS-Extended) was closely aligned with MBS, both in the numbering system and terminology. The MBS utilises diagnostic information to describe many item numbers and this feature was maintained in MBS-Extended. However, in ICD-10-AM Third Edition, a number of diagnostic statements have been deleted from code titles, in line with the principle that a procedure classification should describe only the procedure performed.

The anaesthetic codes have been reviewed, and will provide a more concise and user-friendly code structure. The patient's American Society of Anesthesiologists (ASA) Physical Status Classification is included in the new code structure as the last two characters of the anaesthetic code. For further information on the ASA, see the report on page 13.

Significant improvements have also been made in the classification of:

- spinal procedures (fusion, laminectomy, discectomy)
- colorectal surgery
- urinary diversions
- spinal angiography
- allied health interventions.

Australian Coding Standards

There are 14 new Standards and a further 68 Standards have been amended. Many of these changes reflect advice previously published in *Coding Matters*. A further 18 Standards have been deleted as a result of new codes, index improvements or amalgamation with other Standards.

Australian Coding Standard 0002 *Additional diagnoses* contains additional guidelines to further clarify the application of this standard. The specific criteria for defining an additional diagnosis have not been altered.

Australian Coding Standard 0020 *Multiple/bilateral procedures* has been revised with increased emphasis on coding procedures as often as they are performed.

Australian Coding Standard 0401 *Diabetes mellitus and impaired glucose regulation* has been renamed and expanded to reflect the changes previously outlined in *Coding Matters* 8(1):13, June 2001.

ICD-10-AM Third Edition education

Education to familiarise experienced clinical coders with changes to the classification that will appear in ICD-10-AM Third Edition will be conducted throughout Australia from March to June 2002.

Web-based learning

An interactive web-based educational tool is being investigated which will be accessed through the NCCH web site <http://www.cchs.usyd.edu.au>. It is planned that after registering, users will access the password-protected area and work through the educational material and exercises at their own pace. Alternative options, including CD-ROM and a hard copy version, is currently being investigated to assist clinical coders who do not have access to the World Wide Web.

Some coders may feel that the web-based education option will be sufficient for their education needs, but supplementary face-to-face workshops will also be conducted.

Face-to-face workshops

Workshops are planned for capital cities and major regional centres in each state and territory from May to June 2002.

More information...

Keep an eye on Code-L and the NCCH web site for further updates about these educational activities.

the 10-AM commandments

This 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.

Bankart lesion

A Bankart lesion is a detachment of the anterior glenoid labrum and capsule of the shoulder as a result of an anterior dislocation or subluxation of the shoulder. This may predispose to recurrent anterior dislocation.

Classification

- Where a Bankart lesion is documented in conjunction with a current traumatic shoulder dislocation, please assign S43.01 *Anterior dislocation of humerus* together with S43.4 *Sprain and strain of shoulder joint* and the appropriate external cause, place of occurrence and activity codes.
- Where a Bankart lesion is documented and there is no evidence of a current injury, please assign M24.41 *Recurrent dislocation and subluxation of joint, shoulder region* together with M24.21 *Disorder of ligament, shoulder region*.

SLAP lesion

Superior labrum anterior-posterior (SLAP) lesions are injuries to the labrum that extend from anterior to the biceps tendon to posterior to the biceps tendon. There are four types:

- Type 1 – the attachment of the labrum to the glenoid is intact, but there is evidence of fraying and degeneration
- Type 2 (the most common type) – involves detachment of the labrum and long head tendon of the biceps from the glenoid rim
- Type 3 – the labrum is detached and displaced into the joint, but the long head tendon is intact
- Type 4 – both the labrum and the long head tendon of the biceps are separated from the glenoid rim and displaced into the joint, and the tear of the labrum extends into the biceps.

This information may be summarised in the following table:

Type of SLAP lesion	State of labrum	State of biceps tendon
1	intact but frayed	intact
2	detached	detached
3	detached	intact
4	detached	detached and torn

SLAP lesions usually occur as a result of injury, which may be an acute injury or an over-use injury. Occasionally they may be regarded as degenerate tears, but that would be uncommon.

Types 2 and 4 SLAP lesions are unstable lesions and can generally be repaired arthroscopically by reattaching the labrum to the glenoid. Types 1 and 3 SLAP lesions are stable lesions and repair by arthroscopic debridement is usually adequate.

Classification

Where documentation is incomplete, clinical advice should be sought to determine if the lesion resulted from an acute injury (traumatic) or a degenerate tear (non-traumatic). The classification of these lesions is shown in the table below:

SLAP lesion	Traumatic	Non-traumatic
Type 1 & 3	S43.4 <i>Sprain and strain of shoulder joint</i>	M24.11 <i>Other articular cartilage disorders, shoulder region</i>
Type 2 & 4	S43.4 <i>Sprain and strain of shoulder joint</i> S46.1 <i>Injury of muscle and tendon of long heads of biceps</i>	M75.8 <i>Other shoulder lesions</i>

The distinction between M24.11 and M75.8 is based on the tearing of the biceps tendon. ▶

Open acromioplasty

Decompression of the subacromial space may be achieved by three methods:

- acromioplasty
- excision of acromioclavicular joint (acromionectomy)
- excision of distal clavicle

or any combination of these.

'Decompression of the subacromial space' may not always be documented, as essentially it is not a procedure in itself, rather an outcome of another procedure, eg, acromioplasty.

Classification

If the acromioplasty is open, but not further specified, please assign 48903-00 [1400] *Decompression of subacromial space* (This is not currently indexed under **Acromioplasty**). The following improvements have been made to the Tabular List (volume 3) and Alphabetic Index (volume 4) in this area for ICD-10-AM Third Edition:

Tabular List

1400 Other excision on shoulder	
48951-00	Arthroscopic decompression of subacromial space Arthroscopic acromioplasty <i>Includes:</i> division of coraco-acromial ligament
48903-00	Decompression of subacromial space <i>Includes:</i> acromionectomy acromioplasty excision of: <ul style="list-style-type: none"> • acromioclavicular joint • coraco-acromial ligament • distal clavicle <i>Excludes:</i> that by arthroscopic approach (48951-00 [1400]) that with repair rotator cuff (48909-00 [1404])

Changed code title and moved from block 1404

New inclusion terms

Alphabetic Index

Acromioplasty (open) 48903-00 [1400]
- with rotator cuff repair 48909-00 [1404]
- - arthroscopic (mini-open) 48960-00 [1405]
- arthroscopic 48951-00 [1400]

Index entry for open acromioplasty

Further information on acromioplasty may be found in *Coding Matters* Vol 7 No 1 (June 2000) p13.

Injection of thrombin and autologous growth factor (AGF) into bone

In this procedure, concentrated autologous growth factors (AGF) are harvested from the patient via haemapheresis. The buffy coat containing the concentrated platelets and growth factors is filtered, mixed with thrombin and then sprayed over an amount of granules to form a gel. This AGF gel is then moulded into any shape and is used to graft bony defects. The remaining red blood cells and platelet deficient plasma are transfused back into the patient.

Classification

For the above procedure, please assign a code for bone graft of the appropriate site together with 13750-06 [1892] *Other therapeutic haemapheresis*.

Use of codes from B95 – B97 *Bacterial, viral and other infectious agents*

Some hospitals and day procedure centres are using codes from B95-B97 *Bacterial viral and other infectious agents* as principal diagnosis. The main problems relate to the use of B96.81 *Helicobacter pylori as the cause of diseases classified to other chapters* and B97.7 *Papillomavirus as the cause of diseases classified to other chapters*.

It should be remembered that codes in this block are not intended for use as principal diagnoses. As indicated in the code titles, they are provided for use as supplementary or additional codes when it is desired to identify the infectious agent(s) in diseases classified elsewhere.

The use of B96.81 *Helicobacter pylori as the cause of diseases classified to other chapters* and B97.7 *Papillomavirus as the cause of diseases classified to other chapters* are explained in more detail in Australian Coding Standard 1122 *Helicobacter/Campylobacter* and Australian Coding Standard 1408 *Human Papilloma Virus (HPV)*.

Deep vein thrombosis (DVT) due to travel

Recent media attention has highlighted the possibility of people developing deep vein thrombosis (DVT) as a result of prolonged immobility while travelling by plane, train, bus etc. It has also been described as 'economy class syndrome', although passengers in first

and business class are equally at risk. The NCCH has received a number of queries regarding how to code this condition in order to distinguish DVTs due to travel from those due to other causes.

Classification

Where a definite causal link has been identified by the treating clinician between the occurrence of a deep venous thrombosis (DVT) and immobility due to travel, then X51 *Travel and motion* may be assigned as an additional code, together with the appropriate place of occurrence and activity codes.

Low birth weight

A code for low birth weight at normal gestational age should only be assigned on the infant's record when this is documented by the obstetrician/clinician/midwife and meets the criteria of an additional diagnosis. It should not be assigned routinely for all babies less than 2500g at full term.

The correct code for this condition is P05.0 *Light for gestational age*. The codes from P07 *Disorders related to short gestation and low birth weight, not elsewhere classified* are intended for use where low birth weight occurs in a premature infant.

Tonsillotomy

Tonsillotomy is a relatively new procedure that involves intracapsular removal of tonsil tissue. In this procedure, a 'channeling' technique is employed to debulk the tonsil, rather than excise the entire tonsil. In the weeks following the procedure, tissue adjacent to the channels continues to shrink, further reducing the size of the tonsils.

Classification

Clinical advice received by the NCCH indicates that the procedure of tonsillotomy should be assigned 41789-00 [412] *Tonsillectomy without adenoidectomy* or 41789-01[412] *Tonsillectomy with adenoidectomy* as appropriate. Whilst this procedure employs a different method for removal of tonsillar tissue, it is yet to be proven as a viable and long-term alternative to routine tonsillectomy.

Vertebroplasty

Vertebroplasty is a relatively new technique that is being used to treat vertebral compression fractures. The procedure involves the injection of a cement-like material (polymethylmethacrylate – PMMA) into the vertebral body to stabilise and strengthen collapsed or crushed bone. Vertebroplasty is a non-surgical procedure performed using fluoroscopic guidance.

Classification

There is no specific code for this procedure in ICD-10-AM. Please assign 90589-00 [1571] *Repair of bone, not elsewhere classified*. A review of spinal procedures is planned for ICD-10-AM Fourth Edition.

Awareness during anaesthesia

Awareness during anaesthesia occurs when a muscle relaxant has been administered (parenteral or intravenous) in combination with cerebral anaesthesia and the patient is aware but unable to move to indicate the lack of anaesthetic effect. It does not occur with inhalational anaesthesia alone, as in this case the patient is able to move to express their displeasure at the lack of anaesthesia. Awareness during anaesthesia is always regarded in the anaesthetic literature as a complication of the anaesthesia.

Classification

Awareness during anaesthesia is not classified as a misadventure as in most cases correct procedures are followed and the lack of anaesthetic effect may be due to unknown factors. Where there is clinical documentation of 'awareness during anaesthesia', please assign the following codes:

- T88.5 *Other specified complication of anaesthesia*
- Y48.1 *Parenteral anaesthetics causing adverse effects in therapeutic use*
- Y92.22 *Place of occurrence at or in health service area.*

MBS-Extended gets a new name

In 1998 a new procedure classification was produced by the NCCH based on the Medicare Benefits Schedule. It was called MBS-Extended (MBS-E) because the coding system included the MBS item number with a two-character extension for each specified procedure.

This classification forms Volumes 3 and 4 of ICD-10-AM and is familiar to clinical coders in Australia who have used it since its inception. Times are changing and the NCCH saw a need to consider a change of name for MBS-Extended to give it more relevance to both national and international audiences. At the July 2001 meeting of the Coding Standards Advisory Committee (CSAC) the NCCH proposed a change of name to better reflect the truly Australian nature of the classification and to indicate the breadth of inclusions – both inpatient and ambulatory. CSAC agreed to the new name proposed by NCCH – *Australian Classification of Health Interventions (ACHI)* – which will be adopted with the introduction of ICD-10-AM Third Edition.

ICD-10-AM Mental Health Manual education

An education program to coincide with the introduction of the *ICD-10-AM Mental Health Manual* is being developed. (For more information about the *ICD-10-AM Mental Health Manual*, see *Coding Matters* volume 8, number 2, September 2001, pages 12-14).

The planned education strategy is that community-based mental health professionals from each state and territory will undertake train-the-trainer education, and will then assist to administer the program Australia-wide.

An interactive web-based program is also being planned. The proposed package may be used by trainers to conduct face-to-face education sessions for community-based mental health professionals within their region, but could also be used as a self-learning tool for clinicians to undertake at their own pace.

The program's scope will focus on the application of the ICD-10-AM diagnostic criteria and include basic guidelines on the application of general ICD-10-AM classification principles and classification principles specific to the *ICD-10-AM Mental Health Manual*.

WHO considers ACHI as a possible international procedure classification

The WHO Heads of Collaborating Centres for Diseases (HoC) met in Washington in October 2001. Part of the agenda included a proposal from NCCH for an international procedure classification based on ACHI. The HoC delegates have been discussing the need for a procedure classification over the last few years for countries which currently do not collect statistics on procedures. The NCCH proposed that ACHI be used at the block level rather than code level for this purpose. The proposed 'abridged' version of ACHI was named the *Australian Classification of Health Interventions - Adapted for International Use (ACHI-I)*

Australian Community-Based Health Services Codeset

The Australian Community-Based Health Services Codeset (ACBHSC, or the codeset, as it is commonly known) was created through the combined efforts of four states/territories which formed the Community Health Information Management Enterprise (CHIME). The codeset is the culmination of years of work to develop a national system to identify the information data needs of the community sector. The NCCH was involved in the codeset development, particularly in respect to the areas of the codeset which we are most expert in diseases/problems/symptoms/issues and interventions. When the codeset was completed it was recognised that a body would need to maintain the codeset after implementation.

NCCH has been regarded by many stakeholders as the appropriate custodian of the ACBHSC

NCCH is pleased that a contract is being negotiated with from the Department of Health and Ageing to proceed with the custodianship and further development of the 'codeset'. To further this work, NCCH has recently employed Alex Canduci to manage the project. Alex has intimate knowledge of the codeset having worked on the project at NSW Health (the lead agency) over the last 18 months. We welcome Alex's experience and enthusiasm into the NCCH team.



Clinical update

Anaesthesia and postoperative analgesia

Revision of ICD-10-AM for the Third Edition includes major changes to the codes relating to anaesthesia and postoperative analgesia. These changes are a result of the recommendations made at the Classification Update Forum on Anaesthetics, together with feedback received by the NCCH via the coding query process. Overall, the codes have been simplified. The inclusion of the ASA status of the patient for certain anaesthetic codes (see below) will provide important clinical data for anaesthetic morbidity and mortality.

This clinical update on cerebral anaesthesia is the first of a two-part series. Conduction anaesthesia, coding of anaesthesia/analgesia in labour and delivery and postoperative analgesia will appear in a future edition of *Coding Matters*.

Cerebral anaesthesia

The term 'cerebral anaesthesia' in ICD-10-AM Third Edition includes general anaesthesia and sedation. The codes for these procedures are included in block 1910 *Cerebral anaesthesia*.

General anaesthesia

The term 'general anaesthesia' describes a state of drug-induced, but reversible, unconsciousness from which a patient is unable to experience external stimuli, including pain. General anaesthesia is indicated in the following instances:

- major or prolonged operations
- abdominal and thoracic operations requiring muscle relaxation
- where it is necessary to secure the airway by intubation
- severe patient apprehension
- where other methods of anaesthesia, for example, local or regional anaesthesia, are unsuitable or difficult to achieve.¹

General anaesthetics can be given either as intravenous injections or inhaled gases or vapours. In the past, many patients were anaesthetised using inhalational anaesthetics alone, with vapours such as chloroform and ether.

Induction

In the majority of cases today, the patient is initially anaesthetised using an intravenous injection via a cannula which is inserted in the back of the hand. Drugs that may be used for this type of induction include thiopental, methohexital, propofol and ketamine.

Inhalational induction may be indicated when the patient's airway is difficult to manage, where intravenous (IV) access is difficult (eg obese patients, IV drug use) or in children and others who have an aversion to needles. The vapours or gases are inhaled by the patient via a well fitting face mask and may include agents such as halothane, isoflurane and sevoflurane.

Other induction techniques also exist but are infrequently used including the administration of intramuscular ketamine, rectal administration of methohexital, and the oral administration of fentanyl or versed. These techniques are often reserved for special circumstances such as anaesthesia induction in paediatric patients.

Securing the airway

To ensure a sufficient supply of oxygen to the brain during general anaesthesia, the patient needs to have a clear airway between the nose or mouth and the lungs. In some cases this may be achieved by correct positioning of the patient's head and neck and the use of a facemask.

In other cases, an artificial airway may be required to manage the airway. One type of artificial airway is the laryngeal mask airway (LMA). This device fills the gap between the use of a facemask and endotracheal intubation. It consists of a modified tube that rests at the back of the throat above the vocal cords. Other types of artificial airways, which do not require intubation, include the Cuffed Oropharyngeal Airway (COPA) and Guedel airway.

Another type of artificial airway that may be used is an endotracheal tube. This is a tube that is passed into the mouth or nose, past the vocal cords and into the trachea. A laryngoscope is used to assist intubation. This airway is the method of choice for patients who require significant continuous ventilatory support (CVS) during the procedure.

The anaesthetic equipment

Next to the patient in the operating theatre is the anaesthetic machine. This is connected to cylinders and pipelines supplying oxygen and other gases (eg nitrous oxide) used in the delivery of the anaesthetic. There are gauges that indicate gases are being supplied at the correct pressure, 'flowmeters' that show the rate of gas flowing to the patient's lungs and the vaporiser that contains the volatile anaesthetic vapour. Oxygen and other gases flow through the vaporiser, which contains the inhalational anaesthetic vapour. A dial on the vaporiser allows the anaesthetist to change the concentration of anaesthetic given. Inside the vaporiser the anaesthetic exists in both liquid and vapour phases. The gases flowing through a vaporising chamber pick up molecules of anaesthetic and carry them through the circuit to the patient. As more of the liquid becomes vaporised, it is available to be picked up by the gas.²

Maintenance of anaesthesia

Once the anaesthetic is induced, the patient is kept unconscious either by vapour administered via the anaesthetic machine or by a newer technique called total intravenous anaesthesia (TIVA). In TIVA, anaesthesia is maintained via the continuous infusion of a drug into a vein without the use of inhalational agents of any kind. It may be done with or without target controlled infusion (TCI) pumps, in which a microprocessor-controlled syringe pump automatically and variably controls the rate of infusion of a drug to attain a user defined target level in the patient. This greatly simplifies maintenance of a steady blood level of the drug (usually propofol).³

Administration of other drugs

During the procedure, the anaesthetist may administer other drugs such as analgesics, antiemetics, antibiotics, intravenous fluids and muscle relaxants, via the cannula in the back of the hand. Muscle relaxants are used to prevent coughing when an endotracheal tube is inserted or when the muscles of the abdominal and/or thoracic wall must be relaxed during major procedures in these areas. In such cases, due to the paralysis of the thoracic muscles, it will be necessary for the patient's respiration to be maintained via continuous mechanical ventilation.

Sedation

Sedation for diagnostic, interventional medical and surgical procedures (with or without local anaesthesia) includes the administration by any route or technique of all forms of drugs that result in depression of the central nervous system. The objective of these techniques is to produce a degree of sedation of the patient, without loss of consciousness, so that uncomfortable diagnostic and surgical procedures may be facilitated.⁴ Patients under conscious sedation have a depressed level of consciousness, but retain the ability to independently and continually maintain a patent airway and respond to physical stimulation and/or verbal command.

Classification pointers for ICD-10-AM Third Edition

- There is only one code for general anaesthesia. No distinction is made on the basis of the method of induction and/or maintenance of the anaesthesia.
- There is only one code for sedation. No distinction is made between the method of sedation nor the person administering the sedation.
- Where the clinical record lacks clear documentation, the distinction between sedation and general anaesthesia is based on the use of an artificial airway. In cases involving cerebral anaesthesia, if there is documentation of the use of an artificial airway then assign the code for general anaesthesia. If no artificial airway is employed, then assign the code for sedation.
- Block 487 *Anaesthesia and sedation for dental procedure* has been deleted. All anaesthesia codes are now generic and may be assigned in conjunction with any type of procedure.
- The terms 'with anaesthesia' and 'under anaesthesia' in procedure code titles have been deleted.
- Only one code from block 1910 *Cerebral anaesthesia* may be assigned for each 'visit to theatre', ie if cerebral anaesthesia is performed, it is either general anaesthesia or sedation.
- Oral sedation is not coded.

American Society of Anesthesiologists (ASA) Physical Status Classification

The American Society of Anesthesiologists (ASA) Physical Status Classification is a system used in Australian hospitals and day procedure centres to describe the patient's current health status and therefore provide an indication of perioperative risk. Consultation with anaesthetists during the development of ICD-10-AM Third Edition highlighted the importance of being able to link the patient's ASA score with the type of anaesthetic administered. This union would provide an easily retrievable source of rich data for anaesthetic mortality and morbidity review, research projects and continuous quality improvement.

Consequently, all codes in ICD-10-AM Third Edition relating to cerebral and conduction anaesthesia will require the addition of a two character extension to indicate the ASA score. The first character of the two character extension of the procedure (anaesthetic) code is the ASA score as represented in the first column in the table below. The second character of the extension represents whether a modifier of 'E' is recorded on the anaesthetic form in addition to the ASA score. 'E' signifies a procedure that is being performed as an emergency and may be associated with a suboptimal opportunity for risk modification. The modifier 'E' is to be represented by the digit '0'.

First character

ASA Class	Description
1	A normal healthy patient
2	A patient with mild systemic disease
3	Patient with severe systemic disease that limits activity
4	Patient with a severe systemic disease that is a constant threat to life
5	A moribund patient who is not expected to survive longer than 24 hours without surgical intervention
6	A declared brain-dead patient whose organs are being removed for donor purposes
9	No documentation of ASA score

Second character

Emergency modifier	Character	Description
E	0	procedure being performed as an emergency
	9	non-emergency or not known

Examples

Note: The codes used in these examples are those created for ICD-10-AM Third Edition.

1. Patient has general anaesthetic for cardiac surgery and ASA is documented as 2
Code: 92514-29 [1910] *General anaesthesia, ASA 2, non-emergency*
2. Patient has sedation for cataract surgery in theatre and ASA is not documented
Code: 92515-99 [1910] *Sedation, ASA 9, non-emergency*
3. Patient has general anaesthesia for multiple leg trauma, ASA documented as 3E
Codes: 92514-30 [1910] *General anaesthesia, ASA 3, emergency*

This information must be documented on the anaesthetic form before can be assigned these codes. In cases where there are differing values of the ASA score recorded in the clinical notes, the score recorded on the anaesthetic form (ie that used by the anaesthetist to document the administration of the anaesthetic) is the correct one to assign.

Where there is no documentation of ASA score or the emergency modifier is not indicated, filler digits of '9' should be assigned.

This clinical update has been prepared in conjunction with Dr Mervyn Cobcroft, member of the Classification Update Forum on Anaesthetics. Dr Cobcroft is currently Director of Anaesthetics, QEII Hospital, Coopers Plains QLD. Our special thanks to Dr Cobcroft for his support of the work of the NCCH

- 1 Burkitt G, Quick C & Gatt D (1998) *Essential Surgery*. (2nd ed) 1996 Churchill Livingstone: Edinburgh
- 2 *Inside the Human Body*, Unit 37, sheet 7, Bright Star Publishing, London.
- 3 The virtual anaesthesia textbook website <http://www.virtual-anaesthesia-textbook.com>. Intravenous agents – TIVA and TCI – accessed October 2001
- 4 Australian and New Zealand College of Anaesthetists (ANZCA) web site <http://www.anzca.edu.au/about/index.htm> – Professional documents: Guidelines on conscious sedation for diagnostic, interventional medical and surgical procedures 2001 – accessed October 2001.



Monash University Accident Research Centre (MUARC) and Injury Prevention

Background

MUARC, formed in 1987, is Australia's largest multi-disciplinary research centre specialising in the study of injury and injury prevention. Fundamental research is undertaken through investigator driven research grants. The Centre also undertakes applied research contracts for government and industry clients throughout Australia and internationally. It strives to conduct research of the highest academic standard, create new and improved methods and provide incisive interpretations of research findings. From an initial staff of three, the Centre's resources have grown to more than 70 staff and an annual budget in excess of \$5 million.

Injury Data

Some 100 projects are currently supported in all aspects of injury prevention.

Problem identification and analysis often depend upon accurate, comprehensive and timely databases. MUARC is a major player in the creation, maintenance, enhancement and routine analysis of such data, spanning road and transport safety, occupational safety, and recreational and domestic injury. Data from coroners, motor vehicle crash reports, workers compensation systems, hospital inpatient and emergency department surveillance systems, cost databases and population data combine to provide a rich resource for problem identification, hypothesis generation, injury and crash monitoring over time, and countermeasure evaluation. While the desired level of detail is not always captured, MUARC is continually working with initiators of these data systems, such as the NCCH, to improve their specificity and quality and thus their value in injury prevention.

VISAR – Victorian Injury Surveillance and Applied Research

The Centre has developed a unique resource of statistical data and other information on injuries, their causation their prevention under the umbrella of the Victorian Injury Surveillance and Applied Research program – VISAR (formerly VISS). VISAR, funded by VicHealth, provides a leading edge injury surveillance and injury prevention research system for Victoria. This

necessitates that VISAR operates, maintains, and continuously improves Victorian injury surveillance.

Injury data from the Victorian Emergency Minimum Dataset (VEMD), collected by 28 Victorian hospitals, are compiled and analysed at MUARC. As well as demographic data, the VEMD collects data specific to the injury: location, activity, external injury cause and a 100-character text description of the injury event. The Centre also utilises data from the Victorian Admitted Episodes Dataset (VAED) containing information on all injury admissions to Victorian hospitals over a 14-year period. More than 1 million records are included in this dataset with injury and external cause data coded using the ICD-9 and ICD-10 classification systems. Coronial, Australian Bureau of Statistics death data and general practice information, which are also coded using the ICD-9 and ICD-10 classification systems, complement the hospital data. Together, these various data sources provide tools to identify hazards, disseminate information, support research and monitor injury trends. These databases help to identify priority areas for research and to develop injury reduction measures. VISAR also provides accurate and up-to-date information on injuries which is of value to educators, health professionals, legislators, researchers, retailers, manufacturers, and the media, and assists in community based injury interventions.

Data Application Examples

Examples of the application and use of injury data extracted from the Centre's databases include:

- An overall descriptive epidemiology of injury including frequency, population rates, age and gender distribution, geographic distribution, cause (mechanism) of injury, activity when injured (eg sport), nature of injury and body part injured and quantification of injury severity
- Hospitalised injury trends were analysed for the Victorian Department of Human Services to monitor progress towards meeting the targets of the State Injury Prevention Strategy
- VISAR's quarterly publication *Hazard* is an important medium for the widespread broadcast of data and injury prevention information.

Most editions are available from the Centre's web site (<http://www.general.monash.edu.au/muarc/hazard/hazidx.htm>)

- Specific research studies on:
 - consumer product injury – nursery furniture, cigarette lighters, fireworks, household fixtures such as smoke alarms, finger jam protection devices, pool fencing and trampoline injuries
 - unintentional poisoning in early childhood
 - tractor roll-over injuries and other rural injury prevention projects
 - pool drowning
 - firearm injuries
 - playground falls
 - sports injury
 - motor vehicle exhaust gassing suicides
 - falls among the elderly
 - 'do-it-yourself' activity injuries
 - dog bite injuries
 - evaluation of the City of Hume 'Safe Living Program'
 - cost of injury to Victoria
 - epidemiology of hospitalised injuries in Victoria.

Classification Update AForum (CUF) March 2001: ICD-10-AM Injury and External Cause Coding

Future injury data systems will become significantly advanced as a result of specific coding proposals presented to and accepted at the Injury and External Causes Classification Update Forum (CUF), NCCCH earlier this year. Experts in the field of injury classification were brought together to discuss modifications in this area for incorporation into Chapter XX, ICD-10-AM Third Edition. Two MUARC staff members were invited to attend the forum and present their proposals relating to the classification structure and content of various external cause codes including such issues as:

- falls involving playground equipment
- powered hand-tool injuries
- falls
- hot drink related scald injuries
- agricultural machinery and other types of machinery injuries
- the separation of injuries associated with dog bites and dog attacks
- identification of the types of cars and

motorcycles involved in injury events (ie 4WDs, passenger vans, dirt bikes, motorised scooters)

- the expansion of the animal riders code to categorise horse riders separately and
- the expansion of the self-poisoning by gasses and vapours category to allow for identification of the various sources of gas exposures such as motor vehicle exhausts

to name a few. These changes were proposed in response to coding problems initially detected through detailed analyses of admission and death data coded using ICD-10-AM First and Second Editions and have now been sufficiently addressed in the Third Edition.

Most exciting and promising of all, from an injury prevention perspective, is the comprehensive expansion of the place of occurrence and activity at time of injury codes. The location and context of an injury-causing event provides invaluable information regarding the circumstances and other related factors contributing to an injury. However, continued use of a single code to represent two causes of injury, namely mechanism and intent disguises the significance of some mechanisms of injury, regardless of the intent. Separate codes for mechanism and intent would solve this problem. Another issue concerns the use of the outdated term 'accident' to describe unintentional causes of injury. The term 'accident' refers to events that are perceived as being unavoidable or occurring by chance such as an 'act of God'! Most injuries and the events leading up to their occurrence are predictable and preventable and by no means accidental. Alternative terms now in use include 'unintentional' injuries or motor vehicle 'crashes' or 'collisions'. No doubt these issues will form the basis of our next coding submission for modification of the ICD-10-AM Fourth Edition in the not too distant future.

▶ **Voula Stathakis**

Research Associate
Monash University Accident Research Centre

Injury Prevention Research Unit (New Zealand): injury surveillance research

The Injury Prevention Research Unit (IPRU) was established late in 1990 at the University of Otago. It evolved from injury prevention research undertaken in the Dunedin Multidisciplinary Health and Development Research Unit where John Langley was a research fellow in the late 1970s. In the late 1980s John Langley (Director) and David Chalmers (Deputy Director) successfully tendered to the Health Research Council of New Zealand (HRC) and the Accident Compensation Corporation (ACC) for the establishment of an injury prevention research group.

The human and economic costs of injury can be reduced through activity in three main areas: injury prevention acute care, and rehabilitation. Injury prevention is the IPRU's focus. Within that area, the IPRU has chosen to focus its activities around six categories of injury: road traffic related injury; sport and recreational injury; occupational injury; child and adolescent injury; intentional injury; injury to Maori; and injury surveillance. The remainder of this article provides an overview of research in the last area. Details of other areas can be found on IPRU's web site: <http://www.otago.ac.nz/ipru>.

The IPRU has purchased injury mortality and morbidity data on an annual basis from New Zealand Health Information Service and developed systems for enhancing and interrogating these data. IPRU currently has mortality data for 1974-1997 (45,429 deaths) and morbidity data for 1978-1999 (1,572,648 hospitalisations). IPRU has made extensive use of the NZHIS in informing injury prevention policy and practice¹. Moreover it has been the foundation for many research projects undertaken by IPRU. IPRU has recently developed a web based National Injury Query System (NIQS). The NIQS allows one to choose the injury mechanism/s, intent/s, year/s, age group/s or District Health Board/s of interest and produce statistics on the numbers² and rates of cases (see statistics page on IPRU's web site) for injury resulting in death or public hospital inpatient treatment.

IPRU program of research in injury surveillance has the following goals:

1. To improve NZ's ability to readily determine the incidence, circumstances, severity, and outcome of injuries;

2. To ensure government, its agencies, and other organisations with an interest in injury prevention receive evidence based advice for improving injury surveillance; for the purpose of informing public policy and practice in injury prevention and treatment.

Despite the value of NZ's national all cause injury databases there are fundamental gaps in our knowledge. For example we cannot readily determine the number of fatal and serious work and sport related injuries nor the reliability of commonly used injury data. There are no ready and reliable means for ranking the importance of specific injuries in terms of threat to life and severity of outcome (disablement and cost). We do not have reliable methods of measuring trends in non fatal injury over time. IPRU has in progress plans to conduct a number of studies over the next three years to address these issues. Two examples are provided here for illustrative purposes: reliability of injury coding; and measuring trends in non fatal injury.

Reliability of injury coding

The NZHIS database of hospital discharges contains records of almost all acute injuries occurring in New Zealand treated in a public hospital. Records from 1979 to 2000 were coded according to the ICD-9 coding scheme. From 2000, records are being coded to the ICD-10 coding scheme. Under both coding schemes, injury cases have multiple diagnosis codes (injury codes) and one external cause of injury code recorded. This information has been used extensively to estimate the incidence of injury events, monitor trends and evaluate interventions. Despite its practical importance, there is very limited information available on the reliability of the codes.

Research on a similar database in Victoria suggests there is likely to be significant coding error in the assigning of injury codes and external cause codes to patients which, if present, would have led to incorrect estimates of the level of different injuries². The aim of this study is thus to assess the quality of injury coding in the NZHIS injury hospital discharge files by determining the level of coding error in the mechanism and injury diagnosis codes. This study will involve two phases, the first examining the quality of ICD-9-CM-A coding, the second ICD-10-AM coding. Each phase will consist of drawing a random sample of the records and having the injury codes and external cause recoded by an expert coder.

Measuring trends in non fatal injury

Measuring severity of injuries is of considerable importance for injury prevention. For example, a decreasing trend in an injury may be due to a fall in the number of injury events (a real effect) or a change in the service delivery criteria, eg not admitting patients with minor injuries. The only way to reliably measure trends in hospitalised injury is to allow for the effects of such changes. This requires a measure of injury severity. Direct severity coding of large databases, such as NZHIS, is not practical.

Therefore, it is necessary to estimate the severity from the ICD injury diagnosis codes.

IPRU recently completed a project examining a number of severity measures using the ICD-9 coding scheme. We compared the ability to predict death of International Classification of Diseases Based Injury Severity Scale (ICISS) and four Abbreviated Injury Scale (AIS)-based measures, namely Injury Severity Score (ISS), New Injury Severity Score (NISS), Anatomic Profile Score (APS) and Modified Anatomic Profile (MAP) in a partial replication of Sacco et al³. The results were at least as good as any of the other measures under the ICD-9-CM coding scheme. Since NZHIS has now moved to ICD-10 we aim to investigate the applicability of the ICISS severity estimator to the ICD-10 coding system.

▶ Professor John Langley

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University of Otago, New Zealand

- 1 Langley JD. Experiences Using New Zealand's Hospital Based Surveillance System for Injury Prevention Research. *Methods of Information in Medicine* 1995;34(4):340-344.
- 2 MacIntyre CR, Ackland MJ, Chandraraj EJ. Accuracy of injury coding in Victorian hospital morbidity data. *Australian & New Zealand Journal of Public Health* 1997;21(7):779-83.
- 3 Sacco WJ, MacKenzie EJ, Champion HR, Davis EG, Buckman RF. Comparison of alternative methods for assessing injury severity based on anatomic descriptors. *Journal of Trauma-Injury Infection & Critical Care* 1999;47(3):441-6; discussion 446-7.

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.



Classification corner **The International Classification of Functioning Disability and Health (ICF)**

In May 2001 the new Classification of Functioning, Disability and Health (ICF) was endorsed by the World Health Assembly (WHO 2001). This marked the completion of a revision of the ICIDH (WHO 1980), a process that involved several years of redevelopment and testing by WHO and its Collaborating Centres, including the Australian Institute of Health and Welfare.

The ICF was developed for use in describing functioning, disability and 'non fatal health states'. It is now recognised as a core member of the WHO family of health-related classifications, complementary to the other core member, the ICD, which focuses on diseases and health conditions.

A little history

The predecessor of the ICF was the ICIDH (International Classification of Impairments, Disabilities and Handicaps) which was published in 1980 by the WHO, as a 'manual of classification relating to the consequences of disease' (and injuries and other 'disorders') and as a 'conceptual framework for information'.

Some criticism was levelled at the ICIDH, particularly from people with disabilities and many professionals who were critical of the inadequate recognition given to the role of the environment in the creation of disability. After some seven years of revision and testing, the development phase is now over, producing a new classification, the ICF, the first classification of functioning to be approved by the World Health Organization.



The ICF provides a framework for the description of human functioning, on a continuum – not just at the extremes. This point is explicitly stated in the classification and has been recognised by those involved in the revision for some years.

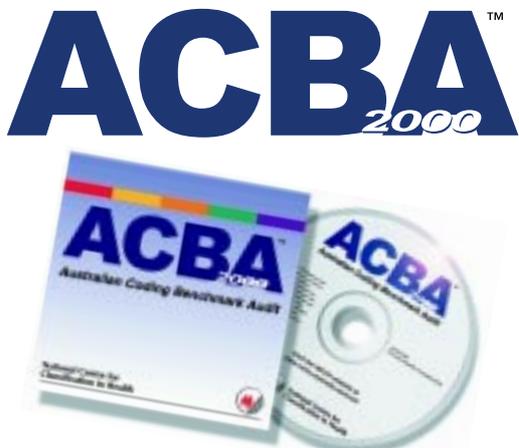
Because of the efforts taken to involve a wide range of disciplines and people in the redevelopment and testing, including disability organisations, the ICF should be able to be used for an even wider range of purposes than the original ICIDH. This is certainly the intention of the World Health Organization.

Structure of the ICF

The ICF is organised in two parts. The first part recognises two main components of functioning and disability:

- a body component comprising classifications of Body Function and Body Structure.
- an Activities and Participation component providing a complete set of domains for aspects of functioning from both an individual and societal perspective.

Environmental factors are presented in the second part of the classification and represent an important new component of the ICF.



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.

Definitions

Key definitions of components are:		
Body functions	are	the physiological functions of body systems (including psychological functions)
Body structures	are	anatomical parts of the body such as organs, limbs and their components
Impairments	are	problems in body function and structure such as significant deviation or loss
Activity	is	the execution of a task or action by an individual
Participation	is	involvement in a life situation
Activity limitations	are	difficulties an individual may have in executing activities
Participation restrictions	are	problems an individual may experience in involvement in life situations
Environmental factors	make up	the physical, social and attitudinal environment in which people live and conduct their lives. (These are either barrier or facilitators of the person's functioning)

The person's functioning and disability is conceived as a dynamic interaction between health and environmental and personal factors (WHO 2001:16).

Examples of ICF content

The four dimensions of the classification are defined 'in the context of a health condition' and are

1. Body Functions
2. Body Structures
3. Activities and Participation
4. Environmental Factors.

Each dimension is comprised of various domains, or separate sets of related physiological functions, anatomical structures, actions, tasks, areas of life, and external or internal influences. Examples of dimensions and related domains are given in Table 1.

Classification within dimensions

Table 2 outlines the hierarchy of classification in the ICF. Domains are at chapter level (eg *Mobility*) and consist of facets or blocks (eg *Walking and moving*) within which are nested groups of two, three, and sometimes four-level categories. These categories are the units of classification and are used to further refine the code.

Table 1: Examples of ICF dimensions, domains (and blocks)

Dimension	Domains	Examples
Body function	specific mental functions sensory functions and pain	memory function hearing function, smell function, sensation of pain
Body structures	structures of the nervous system structures involved in voice and speech	spinal cord and related structures structure of mouth
Activities and participation	mobility self-care major life areas community, social and civic life	getting around inside or outside home washing oneself, dressing work and employment, remunerative employment recreation and leisure, religion and spirituality
Environmental factors	products and technology support and relationships services, systems and policies	products and technology for communication immediate family, health professionals education and training services, labour and employment, legal

Table 2:
Classification within dimensions in the ICF

Chapter/Domain	<i>Mobility</i>
Facet/Block	<i>Walking and moving</i>
Two-Level category	<i>Walking</i>
Three-Level category	<i>Walking short distances</i>
Four-Level category	<i>if needed</i>

Qualifiers

Due to the neutral names assigned to dimensions and domains, actual measurement is carried out using ‘qualifiers’. Qualifiers are measures coded after the relevant domain.

All domains are quantified using a uniform or ‘generic’ qualifier to record the extent of the ‘problem’ (none, mild, moderate, severe, complete) in relation to impairment, limitation, restriction or barrier. It is recognised that these qualifiers need calibration to relate them to existing measurement instruments in the field.

In addition to the generic qualifier, qualifiers for specific dimensions have been proposed (see Table 3), although some are yet to be accepted.

Two constructs – ‘capacity’ and ‘performance’ – can be used to qualify the Activities and Participation (A & P) domains, that is, to record some kind of measure of the extent of the activity limitation (the extent of ‘difficulty’) or participation restriction (the ‘problem’ with participation). Performance relates to ‘the current environment’ and capacity to a ‘standardised’ environment, either an ‘actual’ environment where capacity assessment is commonly performed or an ‘assumed’ environment, judged to have a uniform impact.

Table 3:
Additional qualifiers—body structure and function and environmental factors

Qualifier	Measure of
1 st qualifier for body	<i>extent of impairment function and structure</i>
2 nd qualifier for body structure	<i>change in structure</i>
3 rd qualifier for body structure	<i>localisation of the impairment</i>
Environmental factor qualifiers	<i>extent to which an environmental factor acts as facilitator a or barrier</i>

Applying ICF codes

As an example, the code recorded for a person experiencing moderate difficulty with changing body position is shown in Figure 1.

Figure 1: Example of applying ICF codes

d410.28 where:
 d denotes the dimension, in this case, Activities and Participation
 the first digit (4) denotes the chapter or domain, ie Mobility
 the 2nd and 3rd digits (10) denote the 2nd level category, ie changing basic body position
 the first digit after the decimal point (2) denotes the uniform qualifier, indicating there is moderate difficulty
 with the second digit after the decimal point (8) indicates that capacity is not specified

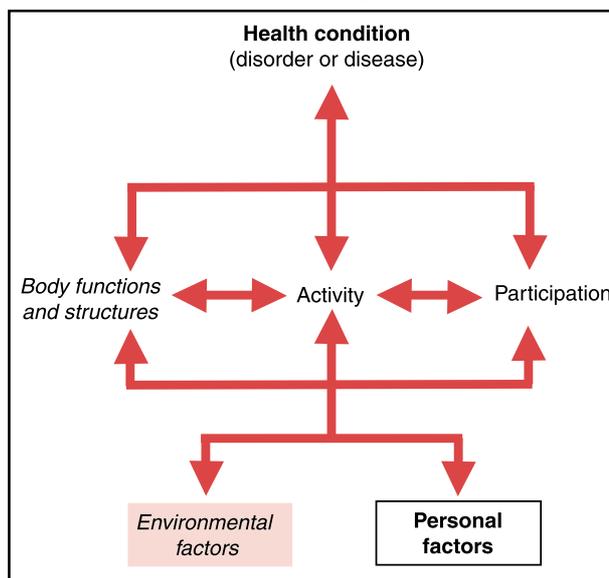
The ICF interactive model

A person’s functioning or disability is conceived as a dynamic interaction between health conditions and environmental and personal factors (WHO 2001:6 and see Figure 2). Functioning and disability are both multi-dimensional concepts.

Disability is the umbrella term for any or all of:

- an impairment of body structure or function
- a limitation in activities, or
- a restriction in participation.

Figure 2:
Interactions between components of the ICF



▶ **Ros Madden and Samantha Bricknell**

Australian Institute of Health and Welfare

World Health Organization (1980) *International classification of impairments, disabilities and handicaps* Geneva: WHO.

World Health Organization (2001) *International classification of functioning, disability and health*. Final draft, full version. Geneva: WHO.

Classification corner

The International Classification of External Causes of Injury (ICECI)

The International Classification of External Causes of Injury (ICECI) is a pick-and-choose multi-axial codeset that can be used to collect detailed information about a variety of external cause related occurrences at different levels of detail.

Using ICECI, it is possible to create customised injury surveillance systems, fine-tuned to individual objectives, settings and levels of data collection and sophistication. Its structure allows consistency and comparability of data captured at its most basic level, as well as being compatible with ICD-10.

ICECI has been developed with different modules that relate to varying circumstances of injury. In addition to data elements that are applicable to all injuries, ICECI includes several additional modules, defined as clusters of data elements about specific subjects. These modules can be used as stand-alone items, but they can also be used in combination with the basic data elements. According to the ICECI website (<http://www.iceci.org>) version 1.0 of the code set helps researchers and prevention practitioners to:

- precisely define the domain of injuries being studied
- answer questions about the circumstances of the injuries, and
- provides more detailed information about specific accident categories, such as home and leisure accidents or traffic accidents.

The development of the International Classification of External Causes of Injury (ICECI) had its genesis in the perceived lack of scope and specificity of the ICD, which was considered by the injury community as a major deficiency for prevention research. A series of new multi-axial classifications were developed in various parts of the world in an attempt to overcome this problem. In the early 1990s, organisations involved in injury prevention and control observed a strong similarity in these classifications and determined that it would be feasible to develop an international common version, under the auspices of the WHO Program for Safety Promotion and Injury Control. The interests of the injury prevention community included being able to differentiate the role of intent versus mechanism of injury, the objects or substances involved, place of occurrence, activity, and other additional dimensions. The result was the first edition of ICECI, which was released earlier this year.

A network of epidemiologists and researchers,

including the Amsterdam Institute for Consumer Safety, the US-based Violence, Injury Prevention and Control Program and the National Injury Surveillance Unit in Australia, supervised the development of the ICECI. Specific segments were developed by other sections of the injury prevention community in an attempt to gain international commitment. The network involved in the creation of ICECI decided to develop this classification as a companion to the ICD classification, without the intent to displace the ICD. Rather, ICECI was designed to enable more specific data collection in hospital emergency departments, clinics and inpatient settings, and for *ad hoc* studies and surveys. Thus, the two classifications are complementary, with ICD-10 remaining the basis for national vital statistics reporting. Further details about the relationship between ICD and ICECI can be found on the ICECI website.

The intent in Australia is to enable the more elaborate structure in ICECI to feed into the future development of ICD-10-AM. There has already been some interaction between ICD-10-AM and ICECI to improve the technical comparability of ICD for the Third Edition external causes of injuries. In modifying the ICD-10-AM classification of external causes of injuries, the final text of ICECI has been referred to as the default in regard to terminology, exclusions and inclusions.

The structure of the ICECI

The ICECI consists of three modules or codesets.

1. The core module

The core module is completed for all cases of injury and includes the following data elements:

- intent
- mechanism
- object/substance
- place of occurrence
- activity
- alcohol use
- other psychoactive drug use.

Injury events can often be complex with regard to mechanism and substances or causing injury. In ICECI it is possible to classify two mechanisms: the direct mechanism and contributing mechanism. It also allows for up to three objects or substances to be coded.

2. The violence module

The violence module contains three variables that relate to interpersonal violence, self-harm and legal intervention:

- interpersonal violence contains two further elements
 - relationship between perpetrator and victim
 - context of the assault
- self-harm identifies precipitating factors
- legal intervention identifies the type of intervention.

3. The transport module

This module is used where the object or substance producing an injury is identified in the core module as a land vehicle, watercraft or aircraft where these vehicles were used as a means of transport and/or where activity

identified in core module is travel to and from work or travelling.

- Mode of transport is used to identify the particular type of vehicle or craft used to transport the injured person.
- Counterpart identifies whether there was a collision and, if so, the 'other' person or vehicle involved in the collision.
- Context identifies whether injury related to transport involved a crash, and if so, whether that crash was in traffic or elsewhere.

▶ **Sue Walker and Garry Waller**
NCCH Brisbane

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ICECI website, <http://www.iceci.org>

National Injury Surveillance Unit (1998) *International Data Standards*, Injury Issues Monitor No. 12, available at <http://www.nisu.flinders.edu.au/pubs/monitor12/mon1220.html>

National Injury Surveillance Unit (1999) *ICECI Developments*, Injury Issues Monitor No. 17, available at <http://www.nisu.flinders.edu.au/pubs/monitor17/monitor17-ICECI.html>

Steenkamp M & Harrison JE (2000) *ICECI: Case Scenario Testing*. AIHW INJCAT XX. Australian Institute of Health and Welfare: Canberra.



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
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 Ageing.

International



I was fortunate enough to be in Europe for the 2001 Patient Classification Systems Europe (PCS/E) meeting held in Brugge, Belgium from 10-13 October 2001. From past experience, these meetings have always been most informative and rewarding, and this year's conference maintained the high standard of presentation and discussion.

The 'European' label is somewhat misleading, as participants from Singapore, USA, Canada, the Middle East, Japan, Singapore, South Africa, and six delegates from Australia joined with several hundred Europeans for discussions about casemix and classification systems.

The meeting was held in the incredible mediaeval city of Brugge (known also as Bruges in the French speaking part of Belgium). Brugge is a beautifully preserved city of canals, spectacular buildings, gardens and streetscapes and wonderful cuisine. However, we did spend most of our time at the meeting venue, the hospital and Congress Centre Oud Sint-Jan which is built around the 19th century wards of the Sint-Jin Hospital.

One of the keynote speakers was Professor Christopher Chute from the Mayo Clinic, who spoke about *Nomenclatures, Classifications and Case-mix: from Patient Description to Abstraction*. Those who attended the NCHC conference in Sydney in April this year will remember Professor Chute's presentation on terminologies and their relationships with classifications. He reinforced the need to focus interest on clinical data rather than billable diagnoses and to establish links between clinical concepts and medical knowledge. He emphasised the importance of a smooth transition from nomenclatures to classifications and the role that databases holding classifications (such as that developed for ICD-10-AM) might play in this transition. Professor Jean-Marie Rodrigues, President of PCS/E, took up this theme in a discussion on the role that standardised mappings between nomenclatures and classifications might have, and who should assume responsibilities for principles and processes underlying these crosswalks.

Other familiar names on the program were Professor Dr Francis Roger France (Belgium), President of the Programme Committee, Steve Sutch (UK), Dr Olafr Steinum (Sweden), Peter Lee Keok Boon (Singapore), Jacob Hofdijk (The Netherlands), Lynelle Moon (France) and Miriam Wiley (Ireland). Presenters from Australia included Peter Donnelly, Ric Marshall, Stephen Duckett and George Palmer. My own paper provided an update from Australia on issues relating to classifications and nomenclatures. With the introduction of AR-DRGs in Germany, there was a noticeable interest from other European countries in Australian work on classification and casemix. As you may have gathered, I was extremely pleased to have this opportunity to renew old friendships and establish links with new colleagues from Europe and other countries.

PICQTM 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.

▶ **Rosemary Roberts**
Director

German delegation visit



Kerry Innes (front, second left) with German delegates

A large delegation from Germany including representatives from the German Ministry of Health, health insurance funds, senior clinicians and hospital managers and journalists visited Canberra and Sydney in October 2001. During their short stay, delegates visited the Australian Institute of Health and Welfare, the Canberra Hospital and the Department of Health and Aged Care.

Representatives from the Department of health and Aged Care made presentations on costing and using the National Hospital Cost Data Collection. Ms Anne Cahill, National Director of Women's and Children's Hospitals of Australasia, spoke with delegates about benchmarking using casemix data. DRG development section staff made presentations on the

development of DRGs in Australia and Patient Clinical Complexity Levels (PCCLs) within the DRG classification.

The delegates were particularly interested in learning more about quality of care and casemix, and the impact of costing and casemix.

The delegation also visited the NCCH in Sydney. Associate Director Kerry Innes presented information for the delegation about the relationship of ICD-10-AM and AR-DRGs.



Visiting health representative Stephan Achner with Kerry Innes

Thai delegation visits NCCH Sydney and Brisbane

In September, a delegation of six representatives from Thailand visited NCCH Sydney and Brisbane. The delegates represented Chulalongkorn University, Thammasat University, Healthcare Financial Administration and the Thai Ministry of Public Health. The delegation's objective was to learn more about the structure and functions of the Centre, with a view to developing a model to establish a similar centre in Thailand. Work is presently under way in Thailand to develop ICD-10-TM (Thai Modification) and to develop the clinical coding skill base.



Hal Kendig and Rosemary Roberts with Thai delegates

Presentations about coding practice in Australia, education for coders, support provided by NCCH for clinical coding, maintenance of ICD-10-AM, quality activities and personnel and staffing issues were made by NCCH staff.

The visit provided an opportunity to formalise a Memorandum of Understanding (MoU) between the NCCH and Chulalongkorn University. The MoU recognises NCCH as an expert centre in clinical classification theory, and confers preferential status to provide services and products to Thailand.



**Signing the MoU between QUT, University of Sydney and Chulalongkorn University in Bangkok
l-r: Dr Pradit Wongkanaratakul, Sue Walker, Dr Pornarong Chotiwan, Prof Ken Bowman and Dr Wansa Paojin**



International Organization for Standardization Plenary Meeting of Technical Committee on Health



Michelle Bramley, the Australian representative to ISO/TC 215 Working Group 3 (WG3) on Health Concept Representation attended the second plenary meeting of ISO/TC 215 held during August in London. Michelle is also the NCCH representative on Standards Australia's mirror group to WG3 – IT-14-2 Subcommittee on Health Concept Representation.

Other members of the Australian delegation are:

- Dr Peter Schloeffel, *Delegation leader* Tridenthealth Australia – WG1
- Joe Christensen, Australian Institute of Health and Welfare – WG1
- Mark Mynott Health Insurance Commission – WG4
- Peter Treseder, Standards Australia, Chair of ISO/TC 215.

Despite being few in numbers, the Australian delegation has contributed significantly to the work of ISO/TC 215. ISO meetings are valuable because they enable Australia to participate in developmental work that links Australian with international initiatives.



Michelle Bramley at Tower Bridge, London

WG3 is grappling with the issue of standardising the language of health for electronic representation. A principal task is to prepare a standard to define the 'meta-terminology' of terminology including words such as

*terminology
classification
nomenclature
vocabulary
concept representation
term
relationship
semantic link
mapping*

This work has progressed slowly, which is a reflection of how difficult it is to propose definitions that satisfy all stakeholders.

By contrast, the development of a reference terminology model for nursing is a project which is progressing quickly under the leadership of the International Council of Nurses and the International Medical Informatics Association Nursing Special Interest Group. The model demonstrates how nursing concepts can be represented in computer-based systems. This project integrates all existing international work, which is mostly attributable to the European Committee on Standardization (CEN). Professor Suzanne Bakken¹ presented a paper at the April 2001 NCCH Conference that described this work.

The most successful project of WG3 to date has progressed to the Technical Specification (TS) stage and will soon be published. TS 17117 specifies quality indicators for controlled health vocabularies. It aims to provide terminology developers and other stakeholders with guidelines needed to construct or evaluate useful, maintainable controlled health terminologies. The draft document is in use in the United States and the feedback will be valuable for the next stage of this project. The WG has three years to develop the TS into an International Standard. The definitions developed in the metavocabulary standard will be included and the content expanded to accommodate quality indicators for interface terminologies and classifications.

Three preliminary projects were put on the agenda this meeting and will be progressed at the next meeting:

- distribution formats for terminologies (standard format for minimum content)
- terminology expressions in clinical data (standard format for establishing relationships between diagnoses)
- semantics of terminology (standard format for expressing the relationships between concepts).

Much of the work of WG3 is progressed through e-mail discussion lists and two-day face-to-face meetings at plenary sessions. Plans to hold only one plenary session each year may delay progress, so plans to establish a teleconference link are being developed. Teleconferencing will be trialed at the November 2001 meeting.

Contributions are also made to WG1 (Health records and information modelling coordination)) task force that is reviewing the *Requirements for an EHR reference architecture* project. The aim of this project is to produce a standard that will specify the essential requirements for an EHR reference architecture that supports using, sharing and exchange of EHRs.

► **Michelle Bramley**

Nosologist,
Classification Support and Development
Division, NCCH (Sydney).

¹ Bakken S (2001) Representing nursing concepts for computer-based systems, *Proceedings of the 7th Biennial Conference of the NCCH, Sydney, April 2001, NCCH: Sydney.*



Medinfo 2001

The Medinfo Congress is held every three years. NCCH Nosologist, Michelle Bramley was one of almost 3000 delegates who attended the Medinfo Congress held in London 2–5 September 2001. Representatives from over fifty countries contributed to the program which provided a number of parallel streams ensuring a good mix of traditional themes and emerging topics that reflects the broad discipline of health informatics:

- information management
- knowledge representation
- imaging, robotics and virtual reality
- decision support
- electronic patient records
- ethical, legal and social issues
- bio-informatics
- health information systems
- evaluation
- patient care aspects
- education and training
- security and confidentiality
- technical infrastructure

- telematics in healthcare
- primary and ambulatory care
- standards for interworking
- consumer health
- human computer interfaces

A spirit of open co-operation and collaboration was encouraged at the Congress. The largest exhibitor was the European Commission, a body that serves the European Union. They have funded over 80 open source projects and the demonstrations of the tools developed attracted a lot of attention from delegates.

Open reference terminology ontologies

A workshop to discuss the need for an open reference-terminology-representation approach was conducted. Many countries devote considerable resources to develop coding systems specific to their needs, and much of this work is done in isolation. Intervention classifications are a good example. Many intervention classifications differ remarkably from each other in their scope, structure and content. When mapping compares content, information can be lost. The workshop facilitators called for a convergence of efforts to improve communication and consistency between coding systems and to ease the burden of their maintenance. Their proposal to establish a collaborative entity (perhaps an international federation of national classification centres) to coordinate an international modelling effort for both procedure and disease ontologies received general support from workshop participants. Funding will be a major stumbling block to this process, however, the NCCH will watch this initiative with great interest.

EHRs and messaging

Convergence was also the theme for a workshop on messaging and the electronic health record. Health Level Seven (HL7) was initially established as a messaging and communications standard, but over time, a new position has evolved. The domains of HL7 have expanded to include the entire system that relates to and is dependent on the messaging. This includes EHR architecture and vocabulary. The Good Electronic Health Record (GEHR) project is an evolving electronic health record architecture which standardises the way data is structured, stored and managed so that it can be shared and exchanged in safely and securely. This project is an open collaboration that builds on the work begun in Europe as the Good European Health Record.

The HL7 expansion has overlapped with the work being done to standardise EHR systems by other bodies such as the GEHR project, ISO (the International Organization for Standardization) and CEN (The European Committee for Standardization). This has led to passionate debate by the proponents of both standards. Standardised messaging allows data exchange between disparate systems. It is a simple measure that allows a way around the problems of inter-operability. The autonomy of system developers is also respected and they are free to build systems without compromise. EHR standards aim to guide systems development so both the source and receiver systems understand data generated or exchanged. This means that reliable messages could be sent so messaging standards would not be needed. The outcome of this workshop was that both standards are needed. System developers may not always adhere to standards and there will always be disparate systems which must have some way of communicating. More collaboration is required so that messaging standards can take account of EHR standards and vice versa.

Australia has been a major player in the re-establishment of the GEHR project. Learn more about this initiative by visiting the GEHR website at <http://www.gehr.org>.

Knowledge representation

A key topic at the Congress was knowledge representation. Knowledge representation is concerned with creating computer systems that can recognise concepts and terms in similar ways that people do. A challenge for developers at present is to electronically link natural language (interface terms), used by clinicians and healthcare consumers, to a structured, controlled vocabulary (reference terminology) that will achieve information and data exchange, retrieval and comparability. This will require interface engines to use a variety of mechanisms that will allow users to clarify their intended meanings of terms so that terms can be mapped to the system's preferred (canonical) term. Apart from natural language processing, keyword navigation (pick lists) and keyword searching are other options that might achieve the same outcomes.

Health informatics education

Competing pressures of family and professional life can make the commitment to undertake further study a major life choice. Once the

commitment is made, some find that courses cannot offer a full range of relevant subjects.

An on-line infrastructure for health informatics courses that is tailored for health professionals was proposed. At a workshop on on-line learning, partnerships and the virtual university, a model that allows students to customise their own courses was proposed. The model allows students to select subjects from a number of collaborating universities to earn credit points towards an award. Collaborating universities would operate within international educational standards allowing students to make assessments about course components.

A spirit of open co-operation and collaboration was encouraged at the Congress

An Australian educator, Associate Professor Evelyn Hovenga (University of Central Queensland), a representative on IT-14-2 Subcommittee on Health Concept Representation and chair of the International Medical Informatics Association's working group 1 on Health and Medical Informatics Education, is prominent in the movement towards flexible on-line learning.

The brain of the future

Professor Susan Greenfield, Professor of Pharmacology at Oxford University, made one of the Congress' most inspiring presentations in the opening plenary. Professor Greenfield has spent much of her working life unravelling the mysteries of the mind. She is a dynamic and inspiring speaker who opened the conference by exploring the 'brain of the future' and the implications posed by neuroscientific advances such as the human genome project. In her presentation, Professor Greenfield speculated about how the 'mind' might arise from the brain, on what is individuality and consciousness; and speculated whether her questions can be answered realistically given current knowledge. She sees some promise in the field of health informatics, perhaps in 'modelling' the actions of the brain.

Most texts written about the brain are as complex as the organ itself. Professor Greenfield's books^{1, 2} are written in easy-to-read language and are highly recommended.

1 Greenfield S (1997) *The human brain: a guided tour*
London: Phoenix Press

2 Greenfield S (2000) *The private life of the brain*
London: Penguin Books

Clinical Coding in Vietnam

In 1999 the Ministry of Health in Vietnam translated the three-character version of the ICD-10 for use in provincial hospitals. Provincial hospitals are the largest hospitals in Vietnam's health system. Before 1999, some provincial hospitals used ICD-8, but many did not code at all. District and community hospitals, which are smaller than provincial hospitals, had not coded before.

Because of a lack of training for coding staff, there were difficulties using the three-character version. The Department of Therapy (the unit within the Ministry responsible for morbidity data collection) approached the World Health Organization to fund a short-term consultancy to review current activity and to conduct two training courses in Hanoi (northern provinces) and Ho Chi Minh City (southern provinces) during August 2001. WHO invited NCCH Brisbane to fulfil the terms of the consultancy.

Medical records and the hospital situation in Vietnam

Five hospitals were visited during four weeks of the consultancy. At four of the hospitals, I had the opportunity to discuss medical records and coding with hospital staff. The Planning Department staff look after records and are also responsible for coding, statistics and human resource management. Many of these staff also work on the wards as receptionists and coders.

Coding is done directly from the medical record and is recorded on new data collection forms designed by the Department of Therapy. Individual forms have been designed for each specialty, with a set of generic demographic data, space for written diagnoses and ICD codes and some speciality-specific data items. Some doctors who were interviewed expressed dissatisfaction with the forms because of the lack of space to record diagnoses and the need to complete multiple forms with largely duplicate data if the patient moves between wards or

specialties. The medical records of discharged patients were reviewed in all visited hospitals and, although the capacity to do a complete audit was limited by my inability to read Vietnamese, the records generally appeared complete and comprehensive. Each record contained doctors' and nurses' notes, investigation and diagnostic results, treatment regimes and reports of therapeutic activities such as operation reports, anaesthetic reports and drug treatment sheets. In one hospital visited, an audit of data quality and completeness was being undertaken. Deficient records were being returned to the treating department for appropriate action.

Medical records are returned to the Department of Planning following the discharge or death of the patient. Planning officers check the codes assigned at ward level, although they do not often alter them. Information from the front sheet of the medical record is entered into a new computer system (a Visual FoxPro database, developed for the Department of Therapy). The resultant information is used to produce three-monthly and annual reports relating to diseases treated, lengths of stay and mortality for the Department of Therapy.

Staff of some of the hospitals indicated that they use the medical records extensively for subsequent research. Medical records of discharged patients are generally bundled together according to month and year of discharge and, in some institutions, a unique number is allocated by the computer system. The bundled records are stored in the 'keeping room', not necessarily using any particular filing method. Common health record practices, such as maintenance of a patient master index or disease index or the automatic retrieval of records for subsequent patient admissions, were not evident and I found it difficult to grasp how the records were retrieved efficiently for research.

Provincial general hospitals that I visited were using short lists of ICD-10 codes at the three-character level. Because each hospital is divided into wards by speciality, only the chapter relevant to the appropriate speciality had been



**Department of Planning
Bac Thang Long Hospital, Hanoi**

provided to each ward and was used by the treating doctor and the staff of the Department of Planning for coding. Codes were assigned by browsing through the chapter to find an appropriate rubric. Only one code was required at discharge for the majority of specialties although the use of two codes was possible for surgical patients. Codes were also assigned for a single diagnosis at the time of referral from a lower level hospital, at pre-admission consultation or attendance at the emergency department, and then on admission to the ward. A code was also allocated for the underlying cause of death if the patient died in hospital.

Up to five codes (or six for surgical patients), which may or may not all be the same, are assigned for each admission to hospital. Some hospitals attempt to perform a quality assurance check of the diagnoses provided prior to admission and then prior to discharge to ascertain the degree of similarity in the admission and final diagnoses.

Differences are used for educational purposes to identify where further training in diagnostic techniques is required. The value of coding a single diagnosis at so many stages during the care process seemed questionable compared with the time and effort required to do so.

During the hospital visits and both training courses, many doctors expressed a desire to code more than one diagnosis at discharge, to more fully reflect the conditions treated at their institutions. Considerable positive discussion was initiated about the value of collecting codes for external causes, particularly in a country where motor vehicle accidents are responsible for much of the burden of morbidity. These discussions formed the basis of some of my recommendations to WHO and the Ministry of Health regarding improvements in the coding process.

Translation issues

The Department of Therapy translated the full ICD-10 volumes I and II for use during the training courses before the consultancy. One copy of the translation was provided for each hospital that participated in the training. Volume III – the Alphabetical Index – was not translated.

The training courses and the need for further training

Doctors and representatives from the Departments of Planning of more than 100 hospitals received training during this consultancy. An interpreter was provided for each course and my slides and workbooks were translated into Vietnamese.



Sue Walker and students in Hanoi

Many of the participating doctors spoke good English and several times they argued with the translations!

Both workshops were very successful, although the four days allocated for each course permitted only an introduction and explanation of the rules and conventions about using ICD-10.

Participants in both courses engaged fully in discussions and to complete exercises. Because of the large class sizes – about sixty participants per course – it would have been preferable to have more courses with fewer participants, or more educators, to foster discussion. Nevertheless, participants appeared very interested in the potential uses of the ICD-10 coded data.

Although representatives of over 100 hospitals were involved in the training programs, with over 900 hospitals in the country, there remains a significant degree of immediate and ongoing education to be undertaken. Discussions about options for further training were held with the Ministry of Health and WHO during my last few days in Hanoi.

Conclusion

Overall, I felt that the month-long consultancy to Vietnam was a success. Although there remains a significant amount of work in order to effect a meaningful transition to ICD-10 and to realise improvements in the health information systems in Vietnamese hospitals, the process for both activities has begun. The Department of Therapy is to be congratulated for its initiative in seeking WHO support for the consultancy and for its efforts in promoting the use of the ICD-10.

▶ **Sue Walker**
Associate Director
NCCH (Brisbane)



NCCH People

NCCH Sydney has a new location

One of life's most stressful events is moving. Relocating, publication of ICD-10-AM Third Edition and a sudden realisation that resources expand to fill all available space created a challenge for NCCH Sydney staff to pack and move without losing productivity.

After almost three years at our former location, NCCH Sydney has moved into our new home on level 5 of M Block at the Cumberland campus of the University of Sydney.

All of our contact details remain unchanged.

NCCH Sydney now has an entire floor, but we have expanded to fill all available space. NCCH Sydney is especially pleased to welcome some new faces: Gerard Viswasam and Alex Canduci have joined the team since we relocated.



Visitor from the UK National Health Service Information Authority (NHSIA)



l-r: Jenny Seems, Dean White and Kerry Innes

Dean White took time out from his Australian holiday to visit the NCCH in October to meet with Kerry Innes and Jenny Seems. Dean is the Information Products Delivery Manager, Population, Health and Service Management Information, at NHSIA, based in Winchester, UK.

The NHSIA is currently undertaking a scoping study to review procedure/intervention classifications used by other countries. The result will be to either upgrade OPCS4 (UK procedure/operation classification version 4) or to replace it with another classification.

Other topics discussed included an update of NHSIA projects, SNOMED-CT and comparison by the two Brits of Australian slang terms learnt during their time in Australia.

Gerard Viswasam



Gerard Viswasam joined the team in November 2001 in a newly created position of Business Director. Gerard comes to the NCCH from the Liverpool Cancer Therapy Centre where he was the Business Manager. He has a strong background in senior

management within the health sector. Gerard is currently undertaking a PhD with the University of Western Sydney. The subject of his thesis is the professional management of health services. Gerard will be assisting the Director, Rosemary Roberts, with budget preparation, negotiating contracts, tender proposals, marketing, planning and ensuring that the NCCH strategic plan achieves its objectives.

Alex Canduci



Alex Canduci began work at the NCCH as the Project Manager for the Australian Community-Based Health Services Codeset (ACBHSC) in December 2001. Alex is a health information manager who graduated in 1989. He has a background in

disease classification, community health services and, during his most recent position at NSW Health, the ACBHSC. Alex's close involvement with the ACBHSC over many months makes him one of the few people with an intimate knowledge of its contents. The contract for custodianship of the ACBHSC between the partnership of NCCH and Australian Institute of Health and Welfare and the Department of Health and Ageing Care is imminent. It will mark a significant step towards the NCCH's vision of integrating the language of health across health sectors.

NCCH Brisbane says 'willkommen'!

Last year NCCH Brisbane hosted Caroline Stahl from the Technical University of Ulm on an internship.

Caroline had such a good time and loved Australia so much, she has returned to NCCH to write her final dissertation, required to complete her health information management

degree. Caroline will be working on a project to develop a means of reading data from the WHO mortality database into a statistical package (SAS) and doing some analyses of international mortality data over the next four months.

Completely independently, Kerstin Fenkl, who has just completed a degree in health services management, also in Ulm but at a different university, also approached us. Kerstin's interest in coming to Australia is to gain experience in casemix, because Germany will implement AR-DRGs from January 2003.



I-r: Caroline Stahl and Kerstin Fenkl

Kerstin will work for periods of six weeks both at the Mater Hospitals group and the Royal Brisbane and Royal Women's Hospitals. Kerstin will work with the casemix and costing teams and will be exposed to the work of the Health Information Service and other areas of the hospitals relevant to finance, data collection and coding.

Caroline and Kerstin did not know each other before coming to Brisbane, although they have worked out that they both went to the same party once! We are enjoying the experience of sharing our knowledge with them and learning more about Germany at the same time. Caroline and Kerstin are also enjoying the Queensland lifestyle – Caroline is learning to surf at the Gold – Coast on weekends and Kerstin rides a bike along the river to the hospital every morning.

Lisa Langtree



Lisa Langtree has been appointed as Project Officer to join the Quality and Education Division team based at La Trobe University in Melbourne.

Lisa is a La Trobe-trained HIM who has been living the good life on the beautiful NSW south coast for a few years as the Manager of the Health Information Service at Bega and Pambula District Hospitals.

Lisa will initially be working on the establishment of a program for the development and maintenance of a Coding Auditors Network (CAN), as well as being involved in the Division's general education and quality functions. Lisa has a keen interest in the maintenance of high quality health data and brings a solid background in IT to the Division.

Karen Peasley

Karen Peasley, who has held down dual roles at the Monash University National Centre for Coronial Information (MUNCCI) and QED for the past year, will resume her full-time role as manager of the Quality and Education Division from January 2002.

Sue Wood



Sue Wood has been appointed to take up the position of Quality Assurance Officer at MUNCCI (for four days per week) and will spend one day each week as a Project Officer in the Quality and Education Division.

Sue graduated as a health information manager from La Trobe University in 2000, and has recently been working at the Austin and Repatriation Medical Centre in Victoria. Sue has a keen interest in data quality and research.

Coding Auditors Network

The development of a Coding Auditors Network (CAN) has been delayed until 2002. Development of the program will be a major task for Quality and Education staff in the new year, who has recently been appointed as QED Project Officer. The patience of interested clinical coders is greatly appreciated.

A quizzical Pom's* perspective of ICD-10-AM Third Edition external cause



In preparation for the introduction of the expanded ICD-10-AM Third Edition external causes, test your knowledge of all causes external...

1. Pump, sculpture and taibo are forms of:

- a. skiing
- b. hockey
- c. aerobics
- d. rugby

2. If you were asked to perform the 'snatch' which sport would you be indulging in?

- a. power lifting
- b. weight lifting
- c. wood chopping
- d. ten-pin bowling

3. Rappelling and rogaining belong to which category?

- a. equestrian events
- b. racquet sports
- c. aesthetic activities
- d. adventure sports

4. Petanque is a sport involving:

- a. balls
- b. racquets
- c. bows and arrows
- d. guns

5. Modern pentathlon is composed of:

- a. equestrian
- b. high jump
- c. fencing
- d. running
- e. javelin
- f. shooting
- g. swimming
- h. long jump

6. A dumbbell is:

- a. piece of equipment used in diving
- b. a campanologist's nightmare
- c. body building apparatus
- d. a hot air balloon

7. If you were injured by a boll buggy, thresher, scarifier or chaser bin, which activity would you be involved in?

- a. mining
- b. agriculture
- c. manufacturing
- d. construction

8. Ingram's, speckled, small eyed, Collet's, mulga are all varieties of

- a. chickens
- b. lizards
- c. snakes
- d. cocktails

9. Which list is correct? Australia is home to:

a.	b.	c.
12 spiders	22 spiders	30 spiders
24 terrestrial snakes	38 terrestrial snakes	19 terrestrial snakes
19 sea snakes	23 sea snakes	10 sea snakes
4 scorpions	6 scorpions	5 scorpions
5 jellyfish	7 jellyfish	3 jellyfish

10. In classification terms, what word would you use to describe contact with pesticides, gases and vapours, chemical or noxious substances, drowning, drugs and biological substances?

- a. attack by
- b. assail by
- c. assault by
- d. harm by

11. Which of these creatures is classified as non-toxic?

- a. green ant (*Rhytidoponera metallica*)
- b. billygoat plum stinging caterpillar (*Thosesa penthima*)
- c. common copperhead (*Austrelaps superbus*)
- d. Bluey (the blue tongued lizard *Tiliqua scincoides*)

a.



b.



c.



d.



12. *Hydrophiidae* is the Latin family name for which reptile?

- a. sea snake
- b. tiger snake
- c. brown snake
- d. whip snake

* Jenny Seems, NCCH (British) Project Officer, has been expanding her knowledge of Australian things that bite and sting for ICD-10-AM Third Edition

Geek Speak Cyber+LE

NCCH has recently acquired a licence for Cyber+LE, a software package developed and marketed by Health Language Inc. Cyber+LE is *middleware* software – it provides functionality to link and integrate disparate health terminologies and classifications.

Lexicon:
a list of words

GUI:
Graphical User Interface:
is the use of images to represent the input and output of a program

Terminologies:
general terms that describe various types of (health) language systems

SNOMED RT:
Systematized Nomenclature of Medicine – Reference Terminology is a concept-based reference terminology developed by the College of American Pathologists and the Kaiser Permanente Convergent Medical Terminology Project (for more information, see *Coding Matters 8(2): pp4-7 2001*)

Concept:
an idea or mental picture represented in words

Relations:
are links between and among concepts

MeSH:
Medical Subject Headings is the (US) National Library of Medicine's controlled vocabulary thesaurus

Map:
a set of values that have a defined correspondence with the values or quantities of another set

Cyber+LE is a multi-tier tool made up of a database server, middle-tier application server and several powerful client applications. The data server is a relational database, called the *Lexicon*, which houses the *vocabulary*. The vocabulary is accessed through an application server layer containing the application program interface (*API*). The API provides a standardised method to query and edit the Lexicon's content. Part of the tool is LExScape, a graphical user interface (*GUI*) that displays all features of the Lexicon data model and provides a platform to manipulate complex *terminologies* and classifications.

Cyber+LE can model reference terminologies, such as *SNOMED RT* and *SNOMED CT* and classifications, for example ICD-9, ICD-10 and ICD-10-AM. Modelling involves defining the key *concepts* and the *terms* (synonyms, abbreviations etc that represent the concepts) and creating appropriate *relations* between concepts. Cyber+LE also enables user-specified *facets* to be attached to concepts providing further links and useability. The result is a multi-hierarchical structure, where one *child concept* may be represented by many *parent concepts*, and each concept being represented by terms used (at interface level).

Each classification or terminology is represented in its own separate section of Cyber+LE. Concepts contained in separate systems can be linked by creation of a relation between the two concepts. Searching capabilities are greatly enhanced as a term can be sought from one or all of the systems. Thus a search for abbreviation 'DM' could deliver diabetes concepts from SNOMED RT, *MeSH* and ICD-10-AM. This will be a great help when tracking changes to terminologies and classifications.

NCCH is using Cyber+LE initially to create *maps* between ICD-10-AM and SNOMED CT. This objective has been achieved in the SNOMED CT alpha trial, which mapped sets of SNOMED CT concepts to ICD-10-AM. It is anticipated that further mapping will be undertaken with a view to developing an Australian clinical vocabulary. NCCH also proposes to undertake preliminary work to formally *model* ICD-10-AM using Cyber+LE.

In the longer term, Cyber+LE is planned to work as the development and maintenance platform for ICD-10-AM. The Cyber+LE architecture permits a greater degree of flexibility than the current Microsoft Access database. It will make creation of subsets of ICD-10-AM much more straightforward.

Colin Spowart in his thinking cap

Middleware:
is software that mediates between an application program and a network

Vocabulary:
the words used in this application

API:
Application Program Interface – the facility that allows an application program to access the operating system and other services

SNOMED CT:
Systematized Nomenclature of Medicine – Clinical Terms is an enhanced version of SNOMED RT which will include Clinical Terms Version 3 (CTV-3, formerly known as Read Codes) which was developed and is used in the UK (for more information, see *Coding Matters 8(2):pp4-7 2001*)

Terms:
a word or words corresponding to one or more concepts

Facets:
act as external references to concepts by linking terms to an information model

Child concept:
a record lower in the hierarchical tree than a parent record; it is also directly linked to the parent and hierarchical databases ('child' is sometimes also called 'daughter' concept).

Parent concept:
In a hierarchical tree, the parent concept is a node which points to at least one child concept ('parent' concept is sometimes also called 'mother' concept).

Model:
is a simplified graphic or narrative description that allows complex systems to be understood and their behaviour predicted (within limits).



Meeting of World Health Organization Heads of Collaborating Centers for Classification of Diseases, Washington DC

This annual event is an extremely important meeting for NCCH. Dr Richard Madden, Director of the Australian Institute of Health and Welfare, headed the Australian team of five, including Rosemary Roberts as representative of NCCH. It was a landmark meeting in that it saw the launch of the International Classification of Functioning, Disability and Health (ICF) as a new member of the WHO Family of International Classifications (FIC).

You may know the ICF as the former ICIDH (International Classification of Impairments, Disabilities and Handicaps). The 54th World Health Assembly recommended the ICF for adoption in May 2001. It has now been published in the six WHO official languages and is produced also in short hard copy and CD-ROM browser versions.

Staff from the North American host centre (incorporating the United States of America and Canada) provided a warm welcome to the 60 or so delegates meeting in Bethesda, Maryland. The African Region of WHO was represented for the first time by Dr M Abdou from Harare. Apart from the 100 papers tabled for discussion, important face to face meetings of various committees were held during the week. These included

- Implementation of ICD-10
- Training and Credentialling
- Family Development
- Update Reference
- Mortality Reference Group
- Electronic Tools

As chair of the Update Reference Committee, I had a fairly busy week, which would have been almost overwhelming without excellent preparation and coaching from Michelle Bramley who provides the secretariat for this committee. The committee considers recommendations for update to ICD-10, and this year approved 34 items for inclusion in major or minor changes to the classification. As well as code or index changes, these include rule changes which affect cause of death coding and software.

Major change versions occur every three years, with decisions made at the 2001 meeting disseminated for implementation in 2003. WHO is currently producing a CD-ROM of ICD-10 which will include updates to the ICD-10 2000 version.

As well as issues of currency of the classification, participants discussed training, the place of ICD in relation to ICF, International Classification of Primary Care (ICPC), Reason for Visit Classification, ICDO-3, International Classification of External Causes of Injury (ICECI) and promoting the development of electronic formats of members of the FIC.

The use of an international classification of health interventions (procedures) had been discussed at previous meetings. This year, Australia proposed that an international version of ICD-10-AM



*I-r back row Rosemary Roberts, Marjorie Greenberg, Richard Madden, Ching Choi
I-r front row Jenny Hargraves, Bedirhan Ustün, Catherine Sykes*

procedures based on block number level of the classification might provide the level of granularity required by countries which do not already use a detailed procedure classification. Australia was invited to prepare a draft prototype of the international version. Many countries considered there was an urgent need for such a classification for international comparability of health interventions and measurement of outcomes.

One evening session was set aside for a presentation from the College of American Pathologists (CAP) of SNOMED CT and issues of mapping to ICD-10 and ICD-9-CM. During discussion, it was agreed that greater collaboration between CAP and WHO would improve mapping to ICD-10 country, language and specialty versions.

Representatives from the United Nations presented material on vital statistics and the importance of reliable information on births and deaths. These papers lead to the Centre Heads drafting a resolution to the WHO asking them to advise the UN Statistical Commission of their views on the crucial importance of reliable, timely and internationally consistent vital statistics.

So much was discussed during the week that it is impossible to describe succinctly the variety of policy, scientific and technical issues covered in this meeting. Fortunately, the papers and the final report have been or will be posted on the WHO website (www.who.int/whosis/icd10/). The next meeting of the heads of centres will be closer to home (Brisbane in fact), from October 13-19 2002.

► **Rosemary Roberts**
Director

PICQ and ACBA update

PICQ enhancements

A CD-ROM incorporating a number of PICQ 2000™ software enhancements will be distributed to all registered customers in December 2001. Previously, one version of the PICQ software was used to accommodate both ICD-10-AM First Edition and ICD-10-AM Second Edition. There is now a separate piece of software for each edition. This release includes upgraded internal data specifications for a small number of indicators which were generating incorrect numerator and denominator counts.

PICQ for ICD-10-AM Third Edition

PICQ for ICD-10-AM Third Edition will be released approximately six months after the release of the books. Feedback and evaluation of the ICD-10-AM Third Edition classification will inform the development of new PICQ indicators specifically to suit Third Edition coding. The timing of the next version of PICQ will allow for the collection of substantial data sets for pre-release testing purposes.

It is likely that a core set of indicators will be relevant to ICD-10-AM First, Second *and* Third Edition, so the PICQ software will have continuity and relevance until the next version is released. Upon the release of ICD-10-AM Third Edition, registered PICQ customers will be notified of any indicators that are considered invalid for the Third Edition.

PICQ and ACBA licences

Licences for both the PICQ and ACBA products cover the use of the product until a new version is released. Current customers will be offered a reduced rate to upgrade to the new edition. The release of a fix will not incur a fee.

Welcome to Victorian PICQ and ACBA users

The Department of Human Services Victoria has established a state-wide licence for both the PICQ and ACBA products.

PICQ and ACBA DRG versions

An ACBA upgrade will be issued in early 2002 to accommodate DRG version 4.2. At present ACBA supports DRG versions 3.1 and 4.1. The PICQ fix supports DRG versions 3.1, 4.1 and 4.2.

NCCH PICQ and ACBA audits

Over recent months, the NCCH conducted a PICQ and ACBA audit for a hospital in New South Wales. Please contact the NCCH Quality and Education Division to discuss your organisation's audit requirements. Queries about the PICQ and ACBA quality tools are also welcome.

Please contact Karen Peasley or Shannon Watts at the NCCH Quality and Education Division:

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coding matters



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Quiz Answers

- | | |
|---|---|
| 1. c. | 8. c. |
| 2. b. | 9. b. |
| 3. d. | 10. c. |
| 4. a. | 11. d. NCCH (Sydney) staff member, Catherine Stanhope, is currently appearing as Bluey The Blue Tongue Lizard in TV ads for Shakespeare (Australia) Pty Ltd fishing equipment |
| 5. a, c, d, f, g | |
| 6. c. Campanologists study bells and bell ringing | 12. a. |
| 7. b. | |

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2002 Conference & Event Calendar

16-17 February **11th Annual Conference on Health Informatics in NSW**
Health Informatics
in the Vineyards 2002
Exploring the Implementation Gap
Hunter Valley Gardens Lodge
Pokolbin, NSW

For further information contact
Brian Regan
mgbgr@alinga.newcastle.edu.au

4-6 August **Health Informatics Conference**
Melbourne Convention Centre,
VIC

www.hic.org.au/

27-29 August **2002 Linking Health Innovations and Management Congress**
A national congress presented by
The Australian College of Health
Service Executives (ACHSE)
Perth Hotel, Western Australia

[www.linkinghealth.com/
index2.html](http://www.linkinghealth.com/index2.html)

1-4 September **14th National Casemix Conference**
Department of Health and Ageing
Conference 2002

*Health Care in Focus - Best
Practice, Best Management, Best
Measurement?'*
Melbourne, Australia

www.health.gov.au/casemix/

21-26 September **2002 AHIMA National Convention and Exhibit**
Moscone Center
San Francisco, CA, USA

www.ahima.org/

25-27 September **ADS/ADEA Annual Scientific Meeting 2002**
Australian Diabetes Society
Adelaide Convention Centre,
Adelaide, South Australia
[http://www.racp.edu.au/ads/
news.htm](http://www.racp.edu.au/ads/news.htm)

5-9 October **The Royal Australian College of General Practitioners 45th Annual Scientific Convention and AGM 2002**
Western Australia Faculty
*Living Better: Towards a Better
Quality of Life*
Burswood International Resort
Perth, Western Australia
Call for papers – Closing Date 26
April 2002
[http://www.congresswest.com.au/
RACGP2002/](http://www.congresswest.com.au/RACGP2002/)

Would you like to promote your conference?
Please send the details to Rodney Bernard,
Publications Manager – r.bernard@cchs.usyd.edu.au

Details of conferences and events will be listed on the
NCCCH website as information becomes available:
www.cchs.usyd.edu.au/ncch/

AIHW burden of disease discussion group

A new burden of disease electronic discussion group has been established by the Australian Institute of Health and Welfare (AIHW) to share the latest information on the incidence, prevalence and disability states for 176 diseases and conditions.

The discussion group is a step towards improving the epidemiological estimates presented in the AIHW report *The burden of disease and injury in Australia*.

The report produced preliminary estimates of incidence, prevalence and disability states for 176 diseases and conditions for 18 age-sex groups, and analysed the impact of 10 important risk factors on each of these diseases and conditions.

The electronic discussion group works like many other listservers on the web. Comments on the burden of disease material are submitted to all members of the group, and group members can reply to these postings.

The discussions on a particular topic are kept together, and when the discussion thread is

completed it is archived. Archived threads can be read but not altered.

Members of the discussion group will be able to subscribe to sections that interest them. Current sections include communicable diseases; cancer; diabetes and other endocrine and metabolic disorders; mental disorders and congenital anomalies; nervous system and sense organ disorders; cardiovascular and chronic respiratory conditions; diseases of the digestive and genitourinary systems and oral health; skin and musculoskeletal diseases; injuries; and Indigenous health.

For further information on the Australian burden of disease project and the electronic discussion list visit the AIHW website at: www.aihw.gov.au/bod/discussgroup.html or contact:

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