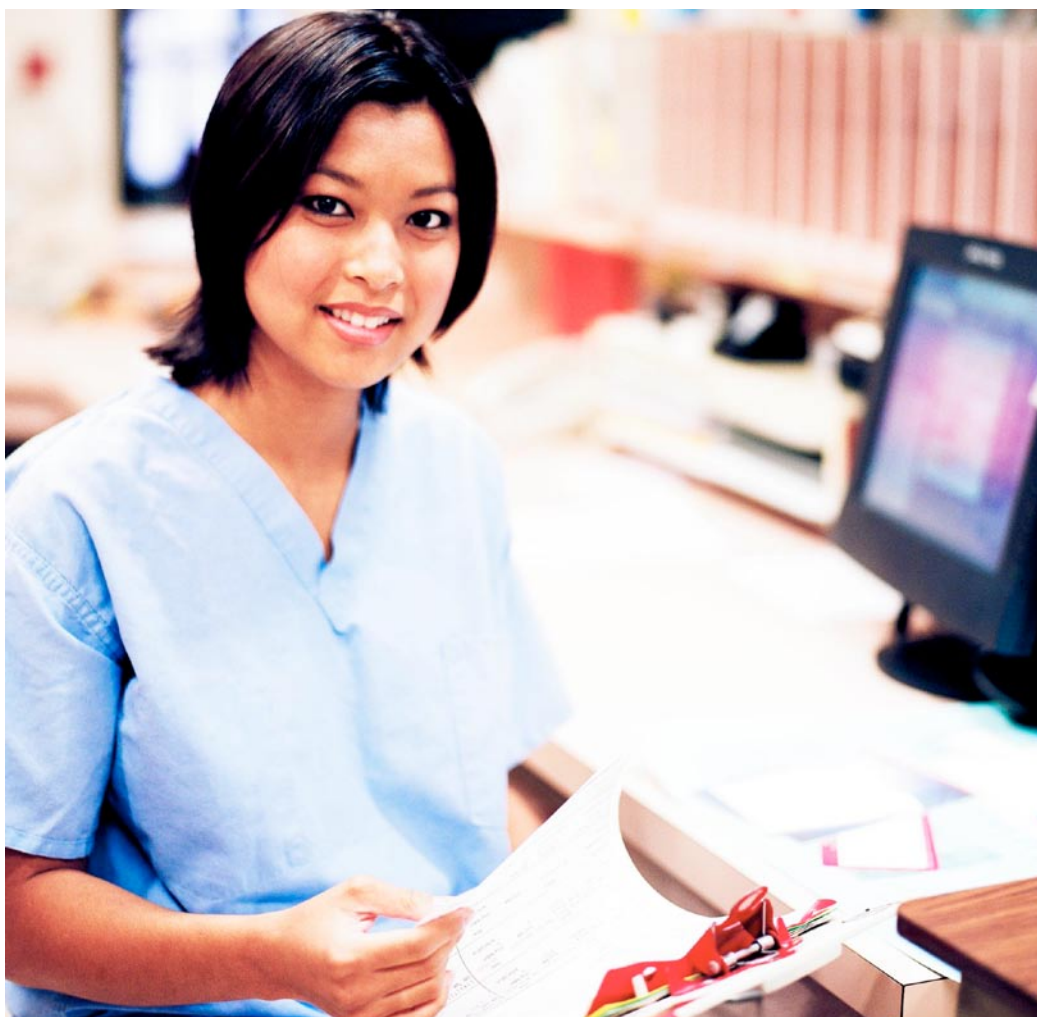


Quality of external cause of injury data in hospital records:

What do clinical coders think?



Researchers at the National Centre for Classification in Health, the National Injury Surveillance Unit, and Injury Prevention and Control Australia are currently conducting a three-year research project funded by the Australian Research Council to investigate the quality of external cause data in hospital records.

This project involves five phases including a detailed secondary data analysis of national hospital morbidity data, a survey of clinical coders and injury researchers, a hospital

record review, and an educational program focusing on requirements for better quality external cause of injury data, which will be targeted at clinical coders, clinicians and injury researchers.

The survey of clinical coders, which was conducted in April/May 2006, sought to identify factors affecting external cause coding, coders' views regarding the reasons for a lack of utilisation and specificity of current external cause codes, in addition to any problems experienced with coding data for which codes are unavailable and ►►

codes which are ambiguous. The levels of support and resources for coders for external cause coding were also explored. Valuable information and feedback was gathered from coders across Australia from this survey which will be used to inform the update and revision process of the external cause chapter of ICD-10-AM, and this article presents some of the major findings to date.

Participants

The survey was conducted via a web-based questionnaire, with e-mail and paper versions to allow surveys to be posted or e-mailed to clinical coders where access to the internet was limited. Four hundred and two coders Australia-wide participated in the questionnaire giving an overall response rate of around 40% of the estimated total coder workforce.

The average age of the coders was 41 years (range 21–65 years) with 62% working full-time and 37% working part-time (1% worked casually). A total of 169 coders had experienced two or more different modes of coder training, and the most common form of coding education was an undergraduate university course (45% of respondents).

Support and resources

Coders indicated which resources they had access to, and which resources they used, to assist them in the coding of external cause information. The most common resource accessible to coders was coding books, with 76% stating that they had access to coding books. Figure 1 outlines the number of coders who had access to different resources and the proportions of coders who used and didn't use these resources.

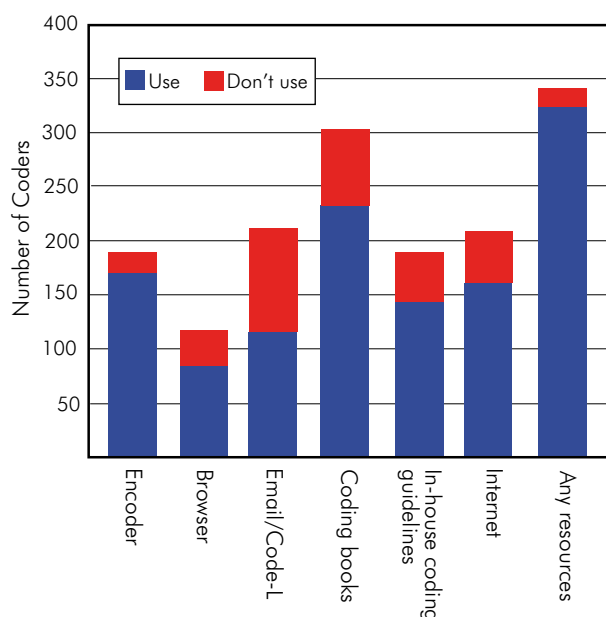


Figure 1: Resources used by coders to code external cause information

Coders were asked from whom they sought help if they had difficulty coding external causes. The most common source of help was other coders, with 87% of coders stating that they consult other coders if required. Almost 60% of coders indicated that they seek help from the NCCH query database, while just 35% of coders sought help from their State coding committee, and only 16% of coders sought help from Code-L. Around 50% of coders indicated they had no or low levels of support from clinical staff to clarify external cause information or access to specific external cause coding training.

Quality of source documentation for external causes

Participants reported that the highest quality external cause documentation came from ambulance reports, which were rated as a good source of information by over half of the respondents (see Figure 2). In contrast, almost half of the respondents stated that discharge summaries were a poor source of information for external causes. These findings were similar for both place of occurrence and activity information.

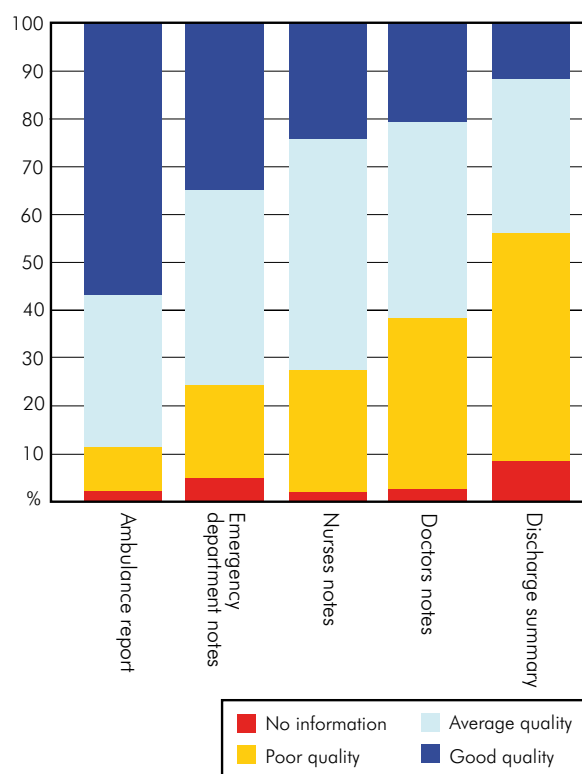


Figure 2: Quality of external cause information in different documentation sources

Factors influencing coding of external causes

When assessing the factors that influence a coder's ability to code external cause effectively, coders rated missing or ambiguous external cause information and

missing documentation as the factors with the greatest impact for external cause coding in general, and also for assignment of place and activity (see Figure 3).

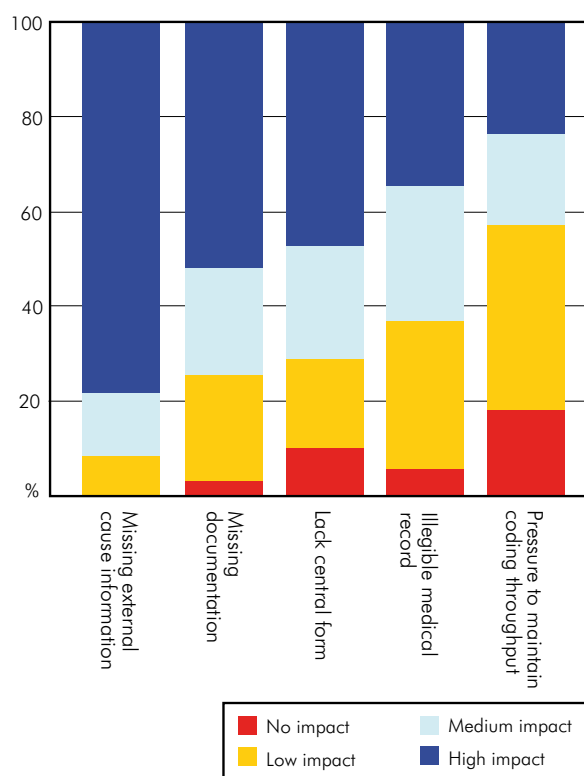


Figure 3: Impact of factors affecting quality of external cause coding

Coder satisfaction with external cause codes

Coders reported their level of satisfaction with ICD-10-AM by code blocks in terms of the ease of finding the ICD-10-AM index entries, the number of codes available and the specificity of the codes available. Coders reported lower levels of satisfaction with the Complications of Surgical and Medical Care code blocks compared to all other code blocks when considering index entries, number and specificity of codes. Between 20 and 30% of coders reported low satisfaction with this code block and very few coders were highly satisfied with the block. Coders were also considerably dissatisfied with the number and specificity of codes for place and activity, with 25–30% of coders reporting low satisfaction with these codes.

Medico-legal issues

While around 60% of coders reported that drug and alcohol involvement is often or always documented in medical records, only 27% of coders reported that perpetrator of assault information is often or always documented where relevant. Almost 29% of coders reported that perpetrator of assault information is rarely or never documented in medical records. Over 36% of coders stated that intent is rarely or never documented for transport incidents.

Value of external cause information

Coders ranked from least to most important a range of factors relating to their perceived value of external cause information. The most important reason for coding external cause information (according to almost 60% of coders) was for research, followed by informing policy (54% ranked as most important) and injury prevention (51% ranked as most important). The least important reason for external cause information was for resourcing/casemix, with over 22% of coders rating this as the least important factor.

Improving external cause coding

Coders were asked to what extent external cause coding quality could be improved through various different measures. Over 85% of coders considered improving the quality of documentation in the emergency department would have a high impact on the quality of coded data. Seventy-eight percent of coders considered that the introduction of a structured form for external cause information would have a high impact.

Approximately 14% of coders provided additional comments regarding ways to improve external cause coding, with the main suggestions being to:

- educate clinical staff on the need for documentation about the causes of injuries
- improve the classification system to better capture data about common causes of injuries
- improve documentation from clinical staff
- standardise all data sources (such as ambulance and emergency department data), and
- introduce a central form where all external cause information is recorded.

Areas of classification where more or improved codes are considered necessary

Around 30% of coders provided the comments in response to the question regarding areas of classification that need improvement or augmentation. Almost a quarter of these responses pertained to improvements to the activity codes, with coders indicating difficulty coding activities beyond sports or working for an income. While coders noted that there is considerable detail available for the coding of sporting activities, difficulty is experienced with coding leisure-style activities, differentiating between sports and leisure activities, coding of activities pertaining to children playing, and capturing details regarding activities pertaining to daily living.

Around 16% of responses related to improvements to the Complications of Surgical and Medical Care codes, with the lack of specificity of codes for medical

and surgical complications problematic. Difficulties are experienced using the Table of Drugs and Chemicals, and the coding of adverse events due to herbal medicines was flagged as an area requiring attention.

Approximately 12% of coders highlighted the coding of accidental falls as particularly problematic. A lack of clinical documentation regarding the cause of the fall limits coders' ability to assign more specific falls codes. Coders also highlighted the need for a falls code to identify if the cause of the fall was a medical condition, such as a fall associated with syncope, collapse or seizure.

Several other areas for improvement were highlighted by coders in relation to the external cause classification, including:

- Improved capture of food substances involved in allergic reactions to food
 - Improving the codes to capture when a person injures themselves through intentionally striking an object or a person
 - Revisions of the ICD-10-AM index to remove non-Australian terms and improve the indexing of place and activity terms
- Increasing the specificity of place of occurrence codes, particularly to capture specific parts of the home beyond the driveway.

Further information

Thank you to all coders who participated in the survey. If you require further information about this project, please contact Dr Kirsten McKenzie (ph 07 3138 9753, e-mail k.mckenzie@qut.edu.au).

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10-AM Commandments

Postoperative anaemia

The NCCH received a query asking whether postoperative anaemia could be assumed as posthaemorrhagic anaemia in the absence of any documented cause.

Postoperative anaemia in surgical patients is not always caused by acute haemorrhage. It may occur in cases with poor nutrition, pre-existing anaemia, blood disorders with low haemoglobin, chronic kidney disease, malignancy, other chronic diseases such as rheumatoid arthritis or irritable bowel disease or diminished erythropoiesis during postoperative recovery.

Classification

D62 *Acute posthaemorrhagic anaemia* should only be assigned for post-operative cases where the cause of anaemia is documented as due to haemorrhage.

There must be confirmation from the clinician that postoperative anaemia is due to acute haemorrhage to be able to assign the abovementioned code.

Diabetes with carpal tunnel syndrome

The NCCH was asked to clarify whether carpal tunnel syndrome in a patient with diabetes should be assigned E1-.41 *Diabetes Mellitus with diabetic mononeuropathy* as carpal tunnel syndrome can be regarded as a mononeuropathy. Clinical advice received by the NCCH on this issue indicates that it is still under deliberation and no consensus has been achieved.

Classification

Therefore, until further clinical advice is received, carpal tunnel syndrome in a patient with diabetes should not be coded to diabetic mononeuropathy.

Diabetes with hypernatraemia

The NCCH was asked to confirm if E11–E14 with extensions of .01 and .02 *Diabetes mellitus with hyperosmolarity without coma* and *Diabetes mellitus with hyperosmolarity with coma* could be assigned for patients with diabetes and hypernatraemia. While there are no index entries for hypernatraemia under 'Diabetes, diabetic', 'with', the excludes notes at E87.0 *Hyperosmolality and hypernatraemia* directs coders to assign a code from E11–14 with a common fourth character of .0 when coding patients with diabetes and hypernatraemia.

Classification

Clinical advice confirms that hypernatraemia usually implies hyperosmolarity and the terms are interchangeable.

The NCCH will consider indexing 'Diabetes', 'with', 'hypernatraemia' for a future edition of ICD-10-AM.

Pain versus injury post trauma

Patients involved in trauma accidents such as motor vehicle accidents, fall from height, sports injury, etc may present at the emergency department with pain in certain areas of the body without any obvious injury. The NCCH received a query asking whether the principal diagnosis in these cases should be pain or injury as it could be argued that pain signifies an underlying injury.

Classification

In the scenario cited, the underlying injury should be coded. It is important to classify the injury and the external cause code to reflect the admission.

Example

Patient admitted to accident and emergency (A&E) post motor vehicle accident (MVA) complaining of neck and back pain. Investigations to exclude injuries reveal no abnormal findings and analgesics were given. The patient is discharged with a final diagnosis of neck and back pain.

Codes: S19.9 *Unspecified injury of neck*
S39.9 *Unspecified injury of abdomen, lower back and pelvis*

Appropriate external cause, place of occurrence and activity codes

Open reduction and internal fixation of fractured ribs

The NCCH was asked to provide advice on the coding of open reduction and internal fixation of fractured ribs as a specific code for this procedure does not exist in the Australian Classification of Health Interventions (ACHI).

Classification

The most appropriate code at present is 48409-10 [1374] *Osteotomy of rib with internal fixation*. If the procedure is performed bilaterally or on multiple ribs, ACS 0020 *Multiple/Bilateral Procedures* should be

applied. Each reduction and internal fixation should be coded separately.

The NCCH has also received a public submission on this subject and will review this area for a future edition of ACHI.

Laparoscopic hysterectomy

Hysterectomy is one of the most common surgical procedures performed and the standard approach is either abdominal or vaginal. However, developments in endoscopic surgery have resulted in new procedures such as laparoscopically assisted vaginal hysterectomy (LAVH) and total laparoscopic hysterectomy (TLH).

Laparoscopically assisted vaginal hysterectomy (LAVH) is a procedure where laparoscopic techniques are used only to separate the upper uterine pedicles. The laparoscopic portion of the operation is discontinued at the level of the uterine arteries. The division of the uterine arteries and final detachment of the uterus is completed through the vagina.

A different procedure, called total laparoscopic hysterectomy (TLH), is entirely performed through the laparoscope. The uterus is removed in tiny portions abdominally through laparoscopic ports. It can also be removed vaginally via a small incision. An electric morcellator cuts the uterus and adnexa into small pieces so that the tissue can be removed through these small incisions. A transvaginal tube known as a McCartney's tube can also be used to remove the uterus and adnexa.

Another method that differs from total laparoscopic hysterectomy is when the cervix is retained while the body of the uterus is detached and removed through small incisions near the pubic hairline. This is known as a supracervical laparoscopic hysterectomy or subtotal laparoscopic hysterectomy (C Verco, personal communication, September 26, 2006).

Classification

There are specific codes in Block 1269 *Vaginal hysterectomy* for LAVH. However, there are currently no specific codes available in ACHI for total laparoscopic hysterectomy or subtotal laparoscopic hysterectomy. New codes will be introduced in a future edition of ACHI.

In the interim, when total laparoscopic hysterectomy (TLH) is documented, check the operation report to verify if the uterus is removed vaginally or abdominally.

If removed abdominally assign:

35653-01 [1268] *Total abdominal hysterectomy*

30390-00 [984] *Laparoscopy*

If removed vaginally assign:

LAVH codes from Block 1269 *Vaginal hysterectomy*

When subtotal or supracervical laparoscopic hysterectomy is documented, assign:

35653-00 [1268] *Subtotal abdominal hysterectomy*

30390-00 [984] *Laparoscopy*

Magnetic resonance cholangiopancreatography (MRCP)

MRCP is a procedure where magnetic resonance imaging (MRI) is used to visualise the bile ducts, pancreatic duct and the gallbladder.

Classification

MRCP should be coded to 90901-05 [2015] *Magnetic resonance imaging of abdomen*.

Dog ears of breast

A dog ear of breast is an excessive redundant roll of skin which can be found at the corner of an incision in the axilla or underarm when too much skin is gathered at an angle. It can occur after mastectomy or reduction mammoplasty and is not a complication of the procedure. The condition may improve with time, or it can be surgically corrected by excision.

Classification

For episodes of care involving excision of dog ears of breast assign:

Z42.1 *Follow-up care involving plastic surgery of breast*

90676-00 [1660] *Other procedures on skin and subcutaneous tissue*

Drug dependence and withdrawal codes F10–F19

The NCCH received a query on whether the .2 *dependence syndrome* code should be assigned with the .3 *withdrawal state* code as drug dependence is inherent for a patient in a withdrawal state.

Classification

There is no directive preventing the assignment of the .2 *dependence syndrome* code with the .3 *withdrawal state* code. However, following clinical and international advice, the NCCH agrees it is unnecessary to assign both codes as the dependence is inherent in the withdrawal state.

A proposal will be forwarded to WHO to improve the indexing and addition of excludes notes at these categories.

ACS 0503 *Drug, Alcohol and Tobacco Use Disorders* will be amended for a future edition of Australian Coding Standards.

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ICD-10-AM/ACHI/ACS

Continuing education workshops 2007

The first continuing education workshop will be held on 25 July 2007 in Brisbane prior to the NCCH conference. The content for this workshop will cover more general coding scenarios and clinical record abstracts based on issues highlighted from the Fifth Edition education program and from queries generated since implementation.

Topics include:

- additional diagnoses
- injuries and external causes
- obstetrics
- surgery
- and more.

As in previous years, participants will be required to code the case scenarios and clinical record abstracts prior to attending the workshop in order to gain the most benefit from attending. It is planned that this workshop will provide the basis for national continuing education workshops later in 2007.

The coder education process for each new edition of ICD-10-AM/ACHI/ACS continues to be beneficial for all clinical coders as evidenced in the evaluation forms received from the Fifth Edition workshops. The majority of clinical coders continue to feel that on-line material combined with the opportunity to attend a workshop provided a sound education program.

ATTENTION CLINICAL CODERS!

The NCCH needs case scenarios or clinical record abstracts for possible use in future education workshops!

We would like to streamline future workshops to provide more relevant cases to suit participants' needs. Therefore, we need cases from you.

If you have a case that can be used, please either send a de-identified copy to the NCCH or summarise the case and e-mail to us.

Contact Megan Cumerlato for further information

Phone: 02 9351 9449.

E-mail: m.cumerlato@usyd.edu.au

Post: NCCH PO Box 170 Lidcombe NSW 1825



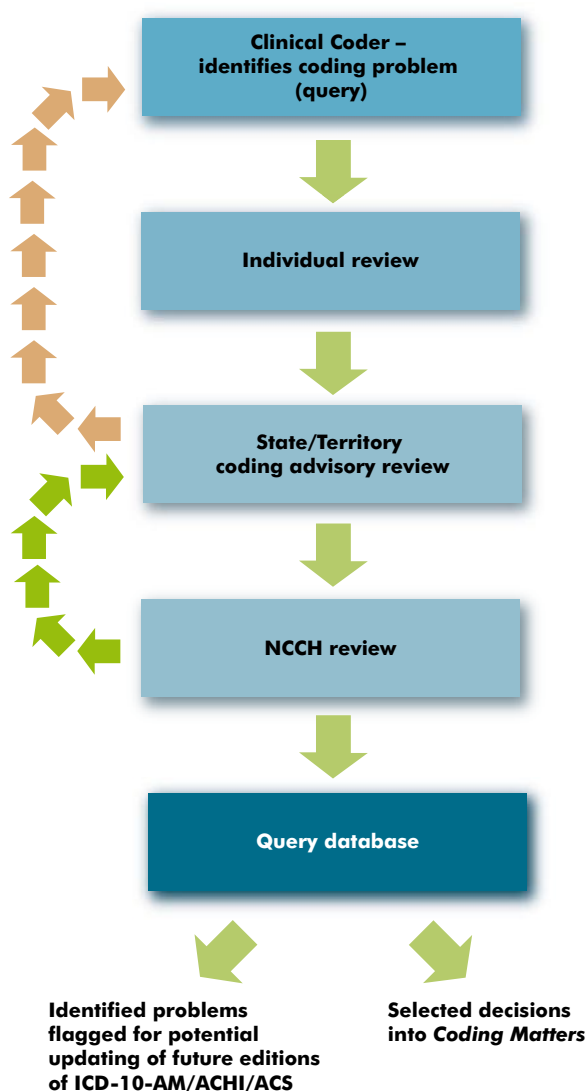
ICD-10-AM/ACHI/ACS query process

Coding Matters, volume 12 number 3, detailed the process for identifying and resolving coding queries in the ICD-10-AM/ACHI/ACS classification. This article will further summarise and illustrate the query process.

The ICD-10-AM/ACHI/ACS coding query process has two major roles:

- to provide an avenue for coders to resolve coding problems encountered whilst assigning disease and procedure codes to patient episodes of care.
- to provide feedback to the NCCH, highlighting problems within the classification which may be reviewed and updated for future editions of ICD-10-AM/ACHI/ACS.

The coding query process:



Individual/State/Territory review

The query process for clinical coders before submitting a query to their State coding advisory committee:

- Review current edition of ICD-10-AM/ACHI/ACS (including errata)
- Check the query database for similar/related queries
- Search reference texts/web search
- Seek advice from peers/local coding group/clinicians
- Send unresolved queries to state/territory coding advisory committee for decision.

State/Territory coding advisory committees

Contact details for your State coding advisory committee can be found on the NCCH website www3.fhs.usyd.edu.au/ncchwww/site/state_coding_advisory.htm

NCCH review

The NCCH reviews and considers every query received. Depending on the nature of the query, the review process may also include:

- Checking other classifications
- Seeking clinical advice from appropriate Clinical Classification and Coding Group (CCCG) or other affiliated clinicians
- Reviewing NCCH documentation pertaining to development of ICD-10-AM/ACHI/ACS
- Seeking international advice, World Health Organization (WHO) and members of the Update and Revision Committee (URC), on issues of ICD-10 convention, where relevant.

Query decisions may be reviewed or downloaded from the NCCH website www3.fhs.usyd.edu.au/ncchwww/site/4.3.htm.

Grouping issues

Queries about AR-DRG grouping should be forwarded directly to the Acute Care Division, Australian Government Department of Health and Ageing (www.health.gov.au)

When a query sent to the NCCH involves both coding and grouping issues, the NCCH will address the coding issue and then liaise with the Acute Care Division, Australian Government Department of Health and Ageing.

How it works Pancreas

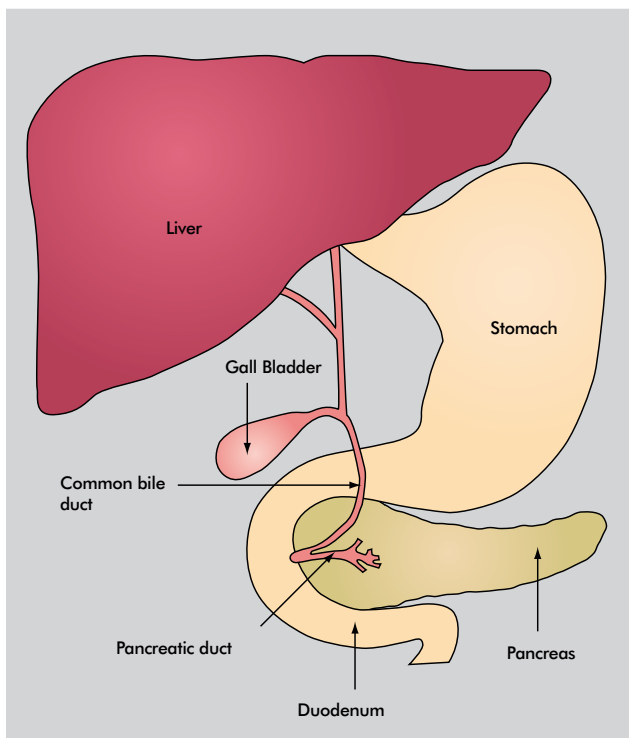
The pancreas is a 15–25 cm soft rectangular retroperitoneal organ located posterior to the stomach and lying within the duodenal curve. It has three regions: a head, body and tail. The pancreatic head lies adjacent to the second part of the duodenum while the tail extends towards the spleen.

The pancreatic duct (duct of Wirsung) runs the length of the pancreas and empties into the second part of the duodenum at the ampulla of Vater. The common bile duct commonly joins the pancreatic duct at or near this point. The ampulla opens through the duodenal papilla and is surrounded by the sphincter of Oddi. There may be an accessory pancreatic duct (duct of Santorini) entering more proximally.

Functions

The pancreas has two main functions, exocrine and endocrine.

- The exocrine pancreas produces bicarbonate rich fluid (daily secretion of 1.5 to 2 litres) containing many enzymes which help in the digestion of proteins, carbohydrates and, particularly, fats. Bicarbonate is also produced in large amounts to neutralise the acid produced by the stomach.
- The endocrine pancreas produces a series of hormones which are important in maintaining a normal level of sugar in the blood.



Exocrine pancreas

About 99% of the pancreas is made up of acinar cells and centroacinar or ductal cells.

In the acinar cells there are zymogen granules that contain many enzymes in their inactive precursor state such as:

- trypsinogen, chymotrypsinogen, procarboxypeptidase for protein digestion
- pancreatic amylase for carbohydrate digestion
- pancreatic lipase for degrading triglycerides into glycerol and fatty acids
- nuclease to hydrolise RNA and DNA in food
- proelastase for digesting collagen in connective tissue
- phospholipase A for reducing phospholipids to fatty acid

These are secreted in inactive form to prevent self digestion of the pancreas, itself. When the inactivated form of trypsinogen reaches the intestine, the enzyme enterokinase present in the intestinal mucosa activates trypsinogen to the active form trypsin. This free trypsin then converts other inactive enzymes to their active forms to break down the different components of food. To prevent accidental activation of trypsin, there is a trypsin inhibitor in the pancreatic acinar cells.

The centroacinar (ductal) cells secrete fluids and electrolytes. The bicarbonate solution secreted by the pancreas helps neutralise the acidic juices and partly digested food from the stomach before food digestion can continue in the duodenum.

Pancreatic exocrine function is controlled by duodenal hormones, secretin and cholecystokinin (CCK).

Pancreatic enzyme secretion is also regulated by vagal nerve stimulation.

Endocrine pancreas

A small proportion (1–2%) of the pancreas is made up of other types of cells called islets of Langerhans. These cells sit in tiny groups, like small islands, scattered throughout the tissue of the pancreas, and secrete insulin and glucagon. Unlike the acinar cells, the islets of Langerhans do not have ducts and secrete insulin and glucagon directly into the bloodstream.

Insulin and glucagon are hormones that regulate the level of glucose in the body. After a meal, carbohydrates are broken down into glucose and passed into the bloodstream. The pancreas responds to the rising blood glucose by secreting insulin.

Insulin improves the uptake of glucose from the blood across cell membranes and into the cells of the body. Glucose is used as energy by the cells or is stored in the liver or muscle cells as glycogen. The drop in blood glucose level will activate the pancreas to stop secreting insulin.

In diabetes mellitus there is insufficient production of insulin, production of defective insulin, or the inability of the body cells to respond properly to insulin (insulin resistance). When there is resistance of the body cells to insulin, the pancreas produces more insulin to achieve normal blood sugar levels. Eventually, when the pancreas can no longer produce enough insulin, the blood glucose level begins to rise leading to Type 2 diabetes mellitus.

Glucagon has an opposite effect to insulin. The drop in blood glucose level prompts the pancreas to slow down the secretion of insulin, but increase the output of glucagon. Glucagon breaks down glycogen in the liver and releases glucose into the bloodstream. The rise in the blood glucose level in turn signals the pancreas to switch off glucagon release. This is known as a negative feedback control mechanism.

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Frequently Asked Questions – Part 2

The following Frequently Asked Questions (FAQs) arose at the recent ICD-10-AM/ACHI/ACS Fifth Edition education workshops and relate to external cause of injury coding. Advice was sought from the National Injury Surveillance Unit (NISU) before these responses were formulated. Many of the changes to this area of the classification were a result of a public submission received from this Unit and it was therefore important that they be consulted regarding some of the issues raised at the workshops.

The standard abbreviation of 'ACS' has been used throughout for 'Australian Coding Standard'. This information is also available from the NCCH web site: <http://www.fhs.usyd.edu.au/ncch/> under 'FAQs'.

External causes of injury

Q: As baby capsules can also be used for sleeping as well as a car/travel device, what external cause code would be assigned when a baby falls out of a baby capsule that is not being used as a travel device at the time of the injury?

A: Assign W06.3 *Fall involving bassinet*. ICD-10-AM/ACHI/ACS will be amended in the future to reflect this advice.

Q: Toddlers are often admitted because they have injured themselves after falling out of a shopping trolley. As a shopping trolley is often used to convey a child as well as carrying shopping what external cause code should be assigned?

A: Assign W02.9 *Fall involving other and unspecified pedestrian conveyance* for when a child falls from a shopping trolley. A 'push-cart' is defined (see definitions list) in ICD-10-AM as a pedestrian conveyance which is similar to a shopping trolley and can be used to push a child around the shops.

Definitions related to transport accidents

(e) A pedestrian is any person involved in an accident who was not at the time of the accident riding in or on a motor vehicle, railway train, streetcar or animal-drawn or other vehicle, or on a pedal cycle or animal.

Includes: person:

- changing tyre of vehicle
- making adjustment to motor of vehicle
- on foot

user of a pedestrian conveyance such as:

- baby carriage
- ice-skates
- perambulator
- push-cart
- push-chair
- roller-skates
- scooter
- skateboard
- skis
- sled
- wheelchair (powered)

ICD-10-AM/ACHI/ACS will be amended in the future to reflect this advice.

Q: Should paintball injuries be classified to accident, assault or undetermined intent? The intent of these sports is really not to hurt the opponent therefore should they default to 'accident' unless documentation indicates otherwise?

ICD-10-AM/ACHI/ACS

The Fifth Edition volumes are now identified by their respective titles. The ICD-10-AM Tabular List and Alphabetic Index volumes are the disease classification. ACHI Tabular List and Alphabetic Index volumes are the interventions classification. ACS is the Australian Coding Standards.

Fifth Edition is now available

Fifth Edition was implemented across Australia on 1 July 2006.

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A: It is likely that the vast majority of injuries related to paintball guns will be accidental, unless otherwise documented. Refer ACS 2005 *Poisonings and injuries – indication of intent*.

Q: If a pedestrian conveyance accident (V00) occurs on a 'cycle way' or 'cycle path' what fourth character should be assigned?

A: If there is no further information to indicate where the 'cycle way/cycle path' is located, eg in a park, next to road, assign a fourth character of .9 *Unspecified whether traffic or nontraffic accident*.

If a motor vehicle is involved the event is likely to have occurred in traffic, eg on a 'cycle lane' or 'cycle path' adjacent to a road. In these instances a fourth character of .1 *Traffic accident* would be assigned.

Q: If a pedestrian conveyance accident occurs on a footpath outside a shopping centre located in a shopping centre car park, would this be classified as a traffic or nontraffic accident?

A: These areas are defined in the Australian Road Rules as 'road related areas', therefore if this level of detail is documented in the record assign a fourth character of .1 *Traffic accident*. The following definitions are provided in ICD-10-AM to assist coders in the assignment of these fourth characters for transport accidents:

Definitions related to transport accidents

- (b) A public highway [trafficway] or street is the entire width between property lines (or other boundary lines) of land open to the public as a matter of right or custom for purposes of moving persons or property from one place to another. A roadway is that part of the public highway designed, improved and customarily used for vehicular traffic.
- (c) A traffic accident is any vehicle accident occurring on the public highway [ie originating on, terminating on, or involving a vehicle partially on the highway]. A vehicle accident is assumed to have occurred on the public highway unless another place is specified, except in the case of accidents involving only off-road motor vehicles, which are classified as nontraffic accidents unless the contrary is stated.

Q: There seems to be overlap between scooters (powered) as a pedestrian conveyance and motor scooter as a transport vehicle. What code should be assigned if an accident was documented as being caused by a 'motor scooter'?

A: As a general rule the following guidelines can be followed:

- if 'motor scooter' is documented, then a code from V20–V29 *Motorcycle rider injured in transport accident* should be assigned
- If scooter (powered), scooter (electric) or mobility scooter is documented assign a code from V00 *Pedestrian injured in collision with pedestrian conveyance*.

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International

ICD-10 mortality coding training in Indonesia

Garry Waller recently conducted ICD-10 mortality coding training in Bogor, Indonesia for 16 coding staff from the Indonesia Mortality Registration System Strengthening Project (IMRSSP). The IMRSSP has been working with the Indonesian Government to improve processes related to death registration for mortality reporting purposes. A major part of the strengthening project is to improve capacity and develop sufficiently trained coding staff to facilitate the coding of causes of death and apply the WHO Selection and Modification Rules for determining the Underlying Cause of Death (UCOD).

Following some last minute rescheduling, training commenced on Monday 24 July and concluded on Friday 28 July. Certificates of attendance were awarded to all participants who included medical doctors, epidemiologists and medical record personnel from the three project sites: DKI Jakarta, Surakarta and Pekalongan. Although conducted over a very short time frame, the training provided practical knowledge and exercises in ICD-10 coding, application of the selection and modification rules and using the Medical Mortality Data System (MMDS) ACME Decision Tables.

The training concluded with participants working in small groups to apply their knowledge to a sample death certificate, assess its completeness, code and apply the selection and modification rules and then present the results and theory to the rest of the class. Delivered in Bahasa Indonesian, the presentations



Course participant Dr. Sarimawar Djaja presenting to the class in Bahasa Indonesian

allowed participants with limited English language to participate and contribute on an equal footing to those with English language skills.

Co-trainers participation was vital in overcoming the language barrier. All participants provided informal interpretation to their colleagues with co-trainers taking on the role of interpreting the more detailed or complex concepts and rules.



Garry Waller with participants in the mortality coding training in Bogor, Jakarta

The IMRSSP provided actual death certificates for use during the training; the larger majority of these were well completed. Certifiers, in the three project sites, have received formal training from the IMRSSP in the completion of the Medical Certificate of Cause of Death.

Training recommendations

No formal assessment of participants' application of the selection rules, modification rules and use of the decision tables was made by the instructor. Recommendations were made in light of the brief timeframe for the training, feedback from participants and the instructor's knowledge of the development and progress of the IMRSSP. Recommendations included:

- All participants should continue to code death certificates on a regular basis.
- All coding staff should be provided with more advanced level coder training – in the workplace using actual death certificates.
- Identify key personnel for the roles of coder educators and provide train-the-trainer education.
- Develop training materials in Bahasa Indonesian.
- Develop formal standards, guidelines and support materials for completing the Medical Certificate of Cause of Death.

- Introduce formal processes of auditing, or verifying, the codes assigned to causes of death and application of the selection and modification rules.
- Develop a formal coder network or e-mail discussion list to enable coders from different regions to communicate about mortality coding queries and other mortality coding issues.
- Participate in the international mortality forum and submit difficult coding problems for consideration by the international mortality coding community.

The IMRSSP has made an excellent start to building capacity in mortality coding expertise in the provinces that form the project sites. The participants remained positive and enthusiastic despite the obvious difficulties caused by the training's short time-frame and language issues. Harnessing this enthusiasm by supporting mortality coders through provision of ongoing education, education materials in Bahasa Indonesian and the establishment of coding networks, both regionally and internationally, will guarantee the continued development of mortality coding expertise in Indonesia.

Garry Waller thanks Dr. Soeharsono Soemantri, his family and the IMRSSP co-trainers for their invaluable assistance in the delivery of the training program; and to all the course participants for their hospitality and camaraderie during his time in Bogor.

Australian Refined Diagnosis Related Groups (AR-DRG) Version 5.2

AR-DRG is a patient classification scheme based on ICD-10-AM/ACHI/ACS codes. It provides a way of grouping the patients treated in a hospital according to clinical characteristics and resource use.

AR-DRG Version 5.2 incorporates ICD-10-AM/ACHI/ACS Fifth Edition codes.

AR-DRG definition manuals are published by the Australian Government Department of Health and Ageing and distributed by the NCCH.

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Clinical update

Chronic kidney disease advances in diagnosis, classification and management

Special thanks to Associate Professor Timothy Mathew, medical director of Kidney Health Australia, for writing this article and his enthusiastic contribution to the proposed modification of the ICD-10-AM classification of chronic kidney disease.

Introduction

Chronic kidney disease (CKD) is a common and under-recognised condition. About 1.9 million Australian adults have CKD (defined below) and most are totally unaware of its presence given the asymptomatic nature of the condition. Recent studies highlight the importance of CKD not only as a step on the way to kidney failure but as an independent risk factor for premature death from cardiovascular disease, particularly in high-risk populations (Sarnak 2003, p.2154; Go 2004, p.1296; Anavekar 2004, p.351). In those with CKD, the risk of premature death appears to be 20 times that of developing end stage kidney failure requiring dialysis (Keith 2004, p.659). The risk is proportional to the reduction in glomerular filtration rate (GFR) and is evident in those with a GFR <60 mL/min/1.73 m².

Definition of CKD

CKD is defined as:

- a. Glomerular filtration rate (GFR) >60 mL/min/1.73 m² that is present for 3 or more months with or without evidence of kidney damage; OR
- b. Evidence of kidney damage (with or without decreased GFR) that is present for >3 months as evidenced by any of the following
 1. Microalbuminuria
 2. Proteinuria
 3. Persistent glomerular haematuria
 4. Pathologic abnormalities (eg abnormal renal biopsy)
 5. Anatomical abnormalities (eg scarring seen on imaging or polycystic kidneys)

The staging of CKD into five stages (see Table 1) has greatly enhanced our ability to systematically assess kidney disease and rationally plan management (The Australian Creatinine Consensus Working Group 2005, p.138). The staging system has now been accepted for incorporation into ICD-9-CM coding in the US and is currently proposed for ICD-10-AM Sixth Edition in Australia. Its use for this purpose will greatly enhance the documentation of the burden of CKD in the community.

Table 1: Stages of chronic kidney disease and clinical action plans

Stage	Description	GFR	Clinical Action Plan
1	Kidney damage with normal or ↑ GFR	≥90	Diagnosis and treatment, slow progression, CVD risk reduction
2	Kidney damage with mild ↓GFR	60–89	Estimating progression
3	Moderate ↓ GFR	30–59	Evaluating and treating complications
4	Severe ↓GFR	15–29	Preparation for kidney replacement therapy
5	Kidney Failure	<15	Kidney replacement therapy (if uraemia present and patient desirable)

What is the clinical significance of diagnosing CKD?

The normal GFR in healthy adults is approximately 120–130 mL/min/1.73 m² and declines with age. A fall in GFR always precedes kidney failure; thus a persistently reduced GFR is a sign of CKD.

Stages 1 and 2 of CKD represent mild kidney damage and while the clinical presentation in these patients may be important (eg nephrotic syndrome requiring immunosuppression), in general it is only when the GFR is <60 mL/min/1.73 m² (stages 3, 4 and 5) that the consequences of kidney dysfunction begin to be clinically manifest.

Below a GFR of 60 mL/min/1.73 m² anaemia is more frequent, cardiovascular morbidity and mortality sharply increase and calcium/phosphate metabolism is disturbed.

Thus, the working definition of CKD rests on the presence of more than 3 months of a GFR <60 mL/min/1.73 m². This substantial degree of reduction in GFR is clinically significant and merits a specific action plan in all patients. The clinical meaning of minor reductions of GFR (eg stage 1 and 2 CKD), particularly in the elderly, has not been fully established.

Why stage (and code) CKD

Most people with persistent kidney disease progress slowly to dependency on dialysis or transplantation and thus migrate through various degrees of severity of kidney dysfunction. The agreement five years ago that CKD could be categorised into five stages (CKD 1 least severe) based on GFR measurements has already had a major impact on health care planning, outcome prediction, costing and public attention to this important problem. To gain full benefit from this ability to stage CKD it is essential to capture the number of people affected. One way of doing this is through discharge coding procedures.

How is GFR measured?

The validation of a new formula, the modification of diet in renal disease (MDRD) for estimating glomerular filtration rate (eGFR), that requires no body measurement, allowed the introduction throughout Australia, in the last 12 months of automatic reporting of eGFR from the serum creatinine as a matter of routine (The Australian Creatinine Consensus Working Group 2005, p.138). This means that every time a serum creatinine concentration is ordered in an adult, an eGFR is reported alongside the creatinine result. At this time it is believed the uptake of automatic reporting of eGFR in Australian pathology laboratories is close to 100%.

Why use the MDRD formula?

Many formulas now exist to estimate the GFR from the serum creatinine (over 50 at the last count). The MDRD formula (based on data from a United States study on the Modification of Diet in Renal Disease) requires only age, sex and gender (and has a correction factor available for Afro-Americans) (National Kidney Foundation, 2006). The absence of the need for a measurement of body habitus (weight or height) was pivotal in persuading pathology laboratories to introduce this into routine use.

How many more cases of CKD will be diagnosed with automatic reporting of eGFR?

The AusDiab database has been used to answer the question of how many people with a serum creatinine in the normal range ($<120 \mu\text{mol/L}$) will have an eGFR in the CKD range of $<60 \text{ mL/min/1.73 m}^2$. Using MDRD formula to estimate GFR, 10.3% of women and 3.8% of men will have CKD diagnosed who would not have been picked up using a serum creatinine concentration cut-off point of $120 \mu\text{mol/L}$.

Summary

- CKD is common, yet is under recognised due to lack of symptoms in the early stages and the insensitivity of current measures of kidney function
- CKD predisposes to premature mortality or kidney failure
- A new categorisation of CKD and associated clinical action plans are based on the staging of CKD determined largely on eGFR criteria
- It has been recommended that Australasian pathology laboratories commence automatic reporting of eGFR every time a serum creatinine concentration is ordered in adults
- eGFR reporting will increase the early detection of CKD and assist early and appropriate evidence-based therapeutic interventions

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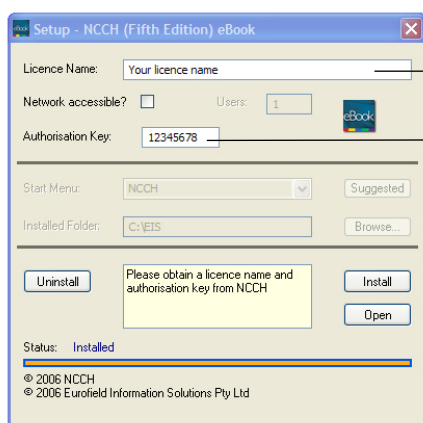
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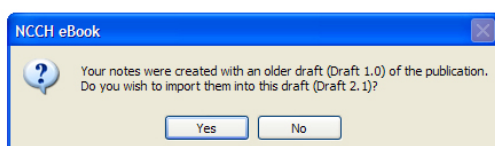
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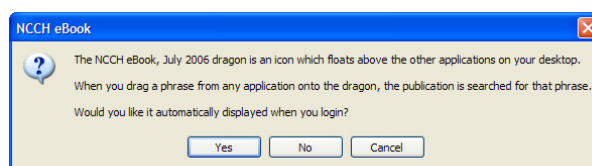
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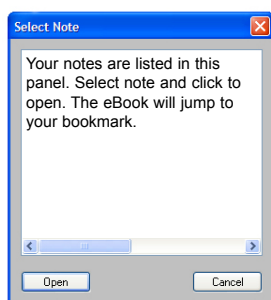
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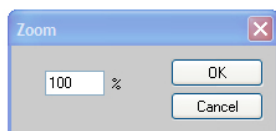
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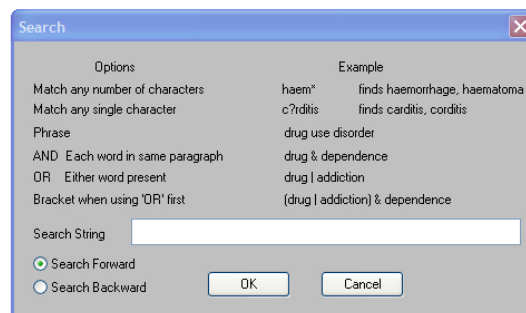
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Health in the media

Do you hate Mondays?



A recent study has found that lazy Saturday and Sunday lie-ins can disturb your body clock, leaving you fatigued at the start of the week. The cure for the dreaded Monday morning blues – stop sleeping in on weekends. Flinders University sleep expert Leon Lack said people often used the weekend to catch up on sleep lost during the week. But he told the Australasian Sleep Association Conference in Perth, that while this might help pay off a ‘sleep debt’, it came at a cost.

“We’ve discovered that these sleep-ins are actually putting your body out of whack enough to change your Sunday night bedtime and set you up for Monday blues,” Professor Lack said

His research team tested the theory by tracking 16 people over a weekend, asking them to go to bed a little later than they would on a weeknight but sleeping in an extra two hours. By comparing saliva samples and hormone tests he found participants’ body clocks had been delayed by 45 minutes.

Questionnaires completed on Monday and Tuesday showed much higher levels of self-reported fatigue and tiredness compared with pre sleep-in days. This was because the subjects’ circadian rhythms – which determine patterns of alertness and tiredness – had been disturbed, creating an effect similar to jet lag.

By mid-week, most people manage to get back on track but then they start staying up later, getting into ‘debt’ once again and perpetuating the cycle.

“These days, we’re pushing ourselves a lot, particularly during the week, and the weekend is our only refuge,” Professor Lack said.

The problem, he says, is that this comes at a price.

“It’s a bit like paying off a mortgage – you take out a big one and you’ll have a lot to pay off later on.”

– *Sydney Morning Herald*, 6 October 2006

Breath testing for breast cancer

Perth-based researcher, Professor Christobel Saunders is currently working on a ‘breath test’ for breast cancer. The research seeks to find a non-invasive breast cancer screening procedure that is as sensitive as a mammogram. Professor Saunders’ research centres on a device that examines the volatile organic compounds (VOCs) found in a sample of human breath. The device takes readings of VOCs, noting changes that can be a marker for breast cancer. Research, using breath analysis, is being conducted by a number of groups for lung cancer and other diseases.

“Previous studies have found, that in women with breast cancer, these VOCs are significantly and specifically altered, providing a marker, which can indicate the presence, and also importantly the lack of, breast cancer in patients,” Professor Saunders said.

“Considering some of the downsides of mammograms, including the pain and discomfort experienced by a few patients and the number of false positive findings, which can result in needless anxiety and biopsies, this device has the potential to be used in conjunction with existing screening procedures, increasing the accuracy of diagnosis.”

Professor Saunders was awarded the 2006 Novel Concept Award by the National Breast Cancer Foundation to continue research into her ‘breath test’ for breast cancer. The grant provides almost \$100,000 over two years.

– *Sydney Morning Herald*, 4 October 2006

Medicinal chocolate

A few bits of dark chocolate a day could have the same benefit as aspirin in reducing blood clots and preventing heart attacks, according to researchers.

“... the chemical in cocoa beans has a biochemical effect similar to aspirin in reducing platelet clumping which can be fatal if a clot forms and blocks a blood vessel,



causing a heart attack," lead researcher Diane Becker told the annual conference of the American Heart Association in Chicago.

The Johns Hopkins University School of Medicine professor cautioned that her work was not intended as a prescription to gobble up huge amounts of chocolate laced with health-offending substances like sugar, butter and cream. However, she said two tablespoons a day of dark chocolate, meaning the purest form chocolate made from dried extract of roasted cocoa beans, may be just what the doctor ordered.

For almost 20 years, scientists have known that dark chocolate, rich in chemicals called flavonoids, lowers blood pressure and has other beneficial effects on blood flow.

Ms Becker's findings showed that normal, everyday doses of chocolate found in ordinary foods was enough to provide clot-controlling benefit, rather than the kilos of chocolate earlier studies said were needed for flavonoids to have a significant effect.

The study was based on tests on 139 subjects who were disqualified from an earlier, larger study on the effects of aspirin on blood platelets because they did not refrain from eating chocolate. Their 'offence' led to what is believed to be the first biochemical explanation of why people who ate a few pieces of chocolate a day lowered their risk of dying of a heart attack by almost one half.

– *The Australian*, November 15, 2006

Body scans in nine seconds

A machine that scans faster than a beating heart to diagnose cardiovascular disease has arrived in Australia. Heralded by radiographers as a revolution in heart and body imaging, the new generation CT scanner allows for one-stop, noninvasive disease diagnosis. The Dual Source CT Scanner is expected to have the biggest implications for people with possible heart complaints.

Interventional cardiologist Dr Peter Illes, who has been using the machine for the past three weeks, has said he is now able to identify people at risk of a heart attack even if they show no symptoms. Patients who present to emergency departments with chest pain can also get a quick diagnosis with the nine-second cardiac scan that uses half the radiation dose of older scanning technology.

In that time, the machine's two x-rays move rapidly, taking 128 'slices' on different angles, rather than the four, 16 and 64 offered by other machines. And, because it scans faster than a beating heart, patients do not have to take beta blocker drugs to slow the heart in order to get detailed motion-free images.

"For the first time, I can see early plaques in arteries which can be treated before causing heart attacks," Dr Illes has said.

"We're able to immediately and easily identify what's causing chest pain and whether our patients need our intervention to save their lives."

Obese and taller patients can also be scanned, and because two x-rays are at work the images can differentiate between different types of tissue.

A spokesman for manufacturer Siemens said 25 machines had been installed worldwide so far, mainly in the United States and Europe. Australia will have three operating by the end of the year.

– *The Australian*, November 15, 2006

Virus best excuse yet for a bad memory

Forget where you left your glasses? Did those keys go missing again? Now you do not have to blame your partner – a virus may be the reason. A family of viruses that cause a range of illnesses from the common cold to polio may be able to infect the brain and cause steady damage, according to researchers at the Mayo Clinic, USA.



"Our study suggests that virus-induced memory loss could accumulate over the lifetime of an individual and eventually lead to clinical cognitive memory deficits," said Charles Howe, reporting the team's findings in the journal *Neurobiology of Disease*.

The viruses are called picornaviruses and they infect more than 1 billion people worldwide each year. They include the viruses that cause polio, colds and diarrhoea.

"We think picornavirus family members cross into the brain and cause a variety of brain injuries. For example, the polio virus can cause paralysis," Dr Howe said.

"It can injure the spinal cord and different parts of the brain responsible for motor function. In the murine [mouse] virus we studied, it did the same thing and also injured parts of the brain responsible for memory."

– *Sydney Morning Herald*, 25 October 2006

CONFERENCES 2007

Feb 21-23	9th Annual AFR Health Congress	Sydney, NSW	www.informa.com.au/healthcongress07
March 7-10	9th National Rural Health Conference	Albury, NSW	www.ruralhealth.org.au
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July 25-27	10th NCCH Conference	Brisbane, QLD	www.fhs.usyd.edu.au/ncch/
Aug 6-8	5th Australasian Conference on Safety and Quality in Health Care	Brisbane, QLD	www.sapmea.asn.au/sqhc2007/
Aug 20-24	Medinfo 2007	Brisbane, QLD	www.medinfo2007.org
Sept 23-26	38th Public Health Association of Australia Annual Conference	Alice Springs, NT	www.phaa.net.au/
Oct 8-10	HIMAA National Conference	Auckland, NZ	www.himaa.org.au

Conference information is also published at the NCCH website <http://www3.fhs.usyd.edu.au/ncch/2.4.htm>

10th NCCH Conference

25–27 July 2007, Brisbane, Queensland

The NCCH is pleased to invite you to the NCCH conference in Brisbane, Queensland, 25–27 July 2007. Visit the NCCH website for more information as it becomes available: www.fhs.usyd.edu.au/ncch/

Conference program

The conference will cover areas such as:

- Professional development and education programs
- Innovation in clinical coding
- Communication strategies
- Quality issues
- Technology issues
- New ways of meeting everyday challenges
- Emerging opportunities and trends in health information management

Optional workshop

The NCCH will again conduct an optional ICD-10-AM/ACHI/ACS Fifth Edition workshop to provide an opportunity to further refine your coding skills.

Registration

Registration forms and conference program will be mailed to all Coding Matters subscribers and placed on the NCCH website when details are available.

Social program

The social program will provide an opportunity to meet and mix with colleagues from throughout Australia and overseas. We're looking forward to seeing you there!

Further information

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The Director and staff of
the NCCH wish all our
readers a happy Christmas
and a prosperous New Year!



ICD-10-AM/ACHI/ACS Fifth Edition print quality issues

Concerns have been raised regarding print quality of some volumes of ICD-10-AM/ACHI/ACS Fifth Edition. There are no consistent print errors in any of the volumes. Misprints may occur randomly in individual volumes and are an unfortunate occurrence in large volume, short print runs such as ours.

If you have a misprinted volume/s, please contact us as soon as possible by phone or e-mail, NCCHsales@usyd.edu.au, to register your receipt of a faulty volume. We will advise if the volume or volumes should be returned. We may ask you to return only the misprinted part of the book and a replacement volume will be dispatched. This will allow you to continue using the volume/s until you receive your replacement.

The NCCH policy in this regard is to replace faulty products. We apologise for any inconvenience if you have received any misprinted volumes.

**coding
matters**



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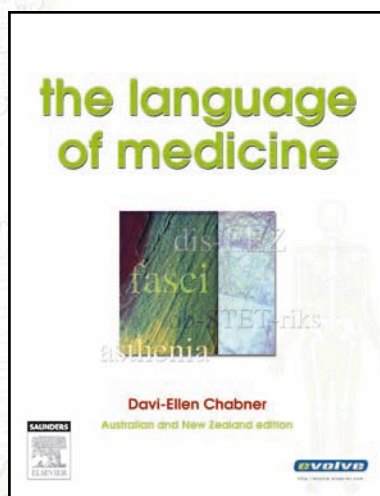
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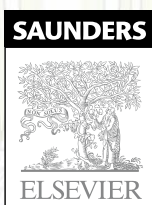
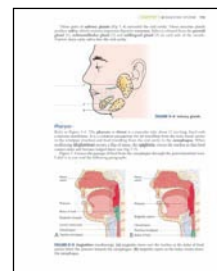
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