Reviewed articles

A response to Daking and Dodds

Tara Pritchard and Maryann Wood

The Australian Bureau of Statistics (ABS) encourages studies of this nature in order to fully expose the quality of different aspects of mortality coding through use of the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10). The ABS has an excellent relationship with the National Coroners Information System (NCIS) and without the valuable information and services provided by NCIS, would be unable to produce mortality data on external causes of death.

The ABS has some concerns regarding the methodology used for the study; specifically, it appears that some morbidity coding rules may have been applied for this study, for example for mortality coding in Australia no fifth characters are applied.

On 11 April 2007 the ABS published an information paper External Causes of Death data quality, 2005 (Australian Bureau of Statistics 2007), in which a range of issues regarding the quality of ABS external causes mortality data are discussed. The ABS recommends that users of mortality data should avail themselves of the information contained within this paper in order to assist them in interpreting ABS mortality coding.

Daking and Dodds recommend continued liaison between a range of stakeholders involved in mortality statistics in order to improve the quality of external causes mortality data. The ABS fully supports this recommendation.

The timeliness, quality and comprehensiveness of information on the NCIS database are important factors affecting the quality of ABS external causes of death data. The ABS has commenced a major collaborative effort with coroners (and the NCIS team) to ensure that completed cases can be entered into the NCIS at the coroners’ office more promptly. This collaboration is expected to continue over the next few years, with the aim of identifying and

Case Study 3

Deceased was on a fishing trip and sharing a hotel room with friends. After consuming a substantial amount of alcohol the deceased left the hotel room, and was subsequently struck by a vehicle. The deceased was thrown onto the bonnet and then off to the roadway to the side of the vehicle.

The Toxicology report detailed a blood alcohol reading of 0.19 gram per 100ml in the blood and 0.23 gram per 100ml in the vitreous humour.

The Legal Cause of Death was stated as:

1(a) Death due to severe trauma including fractures of a lower thoracic vertebra, fractures of both tibias and fibulas,

1(b) Liver lacerations with internal haemorrhage and a cortical contusion

ABS Coding:

T07 Unspecified multiple injuries
V031 Pedestrian injured in collision with two- or three-wheeled motor vehicle, traffic accident

NCIS Coding:

S221 Multiple fractures of thoracic spine
S822 Fracture of shaft of tibia, without or without mention of fracture of fibula
S361 Injury of liver or gallbladder
S063 Diffuse brain injury
V031 Pedestrian injured in collision with two- or three-wheeled motor

Comment:

The initial police summary did not give details of the injuries sustained by the deceased allowing for coding of multiple injuries; however the autopsy and finding both gave specifics on injuries within the Cause of Death statements that could be coded. It is feasible that the document was unavailable to ABS at the time of coding, allowing the NCIS coder access to more specific injury descriptions.
addressing the issues (e.g. educational, operational or technical) of concern. Initial effort will be concentrated in those jurisdictions with the greatest delays and those most likely to produce improvements. It is likely that the issues will vary according to the jurisdiction, and progress will be faster in some jurisdictions than in others. This initiative will allow for a close working relationship with coroners, which will also facilitate ABS monitoring of completion rates and increase knowledge of contributing factors.

In 2005 the ABS commenced a program to develop better relationships with Registrars of Births, Deaths and Marriages (RBDMs), with the aim of increasing the quality of death statistics. This program has included a range of activities, including development of a national standard set of data items for collection of death statistics and provision of ABS assistance to RBDMs in areas such as form content and design. The program has had a number of successes, including delivery of data to the ABS in standard file formats.

The ABS would encourage the development of the NCIS Drug module and National Police form initiatives as a method of increasing the availability of timely data in a standard format. The importance of standard methods for collection of data and standard and visible metadata in supporting collection of data is an issue of a high priority to the ABS.

The ABS does not support the recommendation contained within this paper regarding an investigation into moving from use of ICD-10 to ICD-10-AM for ABS mortality statistics.

ICD-10 is used by the ABS to code causes of death. The International Classification of Diseases (ICD), produced by the World Health Organisation (WHO), is the international standard diagnostic classification used to classify diseases and other health problems recorded on many types of health and vital records, including death certificates and hospital records (WHO 2007).

In 1994 the Australian Health Ministers Advisory Committee (AHMAC) established a committee to oversee the implementation of the tenth revision of the ICD in Australia. The ABS worked in conjunction with the Australian Institute of Health & Welfare (AIHW) and the National Reference Centre for Classification in Health (now known as the National Centre for Classification in Health – NCCH) to ensure standard and appropriate implementation of the classification throughout mortality data collection processes. The ABS continues to work closely with NCCH to ensure correct and consistent interpretation of the classification by the ABS. The use of the ICD as the standard classification contributes greatly to the overall coherence of the ABS Causes of Death collection.

The Australian Bureau of Statistics processes data on around 140,000 deaths annually, using an automated coding system (ACS). The Mortality Medical Data System (MMDS) allows the classification of multiple causes of death in accordance with the current version of the ICD. This results in coding of every condition mentioned on a death certificate as contributing to the death. The ABS implemented the MMDS system during 1997, after considerable research and testing using ICD-9 (World Health Organization 1975) and the subsequent introduction from 1999 for ICD-10 (World Health Organization 2007). All deaths occurring within Australia, registered from 1 January 1997, have been multiple-cause coded in ICD-10.

The primary focus of mortality coding is to assign an underlying cause of death (UCOD). The underlying cause of death is defined as ‘...the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury’ (ABS 2006). When more than one condition is entered on the death certificate, the underlying cause is selected using the coding rules of the ICD-10.

ICD-10-AM is primarily a classification the purpose of which is to record, analyse, interpret and compare morbidity data. The ICD-10-AM has been developed to assist in assigning principal diagnoses and principal procedure codes to indicate the reason for a patient’s episode at a hospital or other health care facility. The classification is also used to assign codes for additional diagnosis and other procedures.

There are a number of important differences in the rules used for mortality coding as compared to coding for morbidity (ICD-10-AM). As an example of this, when considering sequence for mortality coding the main concern is understanding the sequence of events that led to the
death, that is assigning an UCOD. In contrast, when considering sequencing for morbidity coding it is important to identify the principle diagnosis and principal procedure. All other conditions that are coded for that episode of care are sequenced according to the level of severity of the conditions.

The ABS will continue to use ICD-10 as the classification for mortality statistics in line with international standards and the fundamental purpose of that particular classification.

Overall the ABS supports the views presented in the Daking and Dodds paper that the majority of differences encountered in coding will be due to differences in the timing of the coding activity and the known differences in consistency and concordance between individual coders. The ABS would support the undertaking of a future similar study, using an agreed methodology and coding standards, in partnership between the ABS and the NCIS.

References

Tara Pritchard (GradCertPublicAdmin)
Director, Health and Vitals Statistics Unit
Australian Bureau of Statistics
email: tara.pritchard@abs.gov.au

Maryann Wood BBus(HlthAdmin), MHSc(HlthInfoMan)
Assistant Director, Health and Vitals Statistics Unit
Australian Bureau of Statistics
email: maryann.wood@abs.gov.au

Comment from NCIS
The NCIS would like to convey its respect for the opinions and comments expressed by the ABS in regards to the article ICD–10 mortality coding and the NCIS: a comparative study by Leanne Daking and Leonie Dodds on pages 41–42 of this issue of the Journal. We would also like to acknowledge the work initiated by the ABS to examine a range of issues relating to mortality coding. These include several identified in the NCIS Project Report, initially distributed to ABS mid 2006, and those discussed in the information paper External Cause of Death, data quality 2005 (ABS Cat. No 3317.0.55.001) released on 11 April 2007.

As illustrated by the collaboration between the NCIS and ABS both organisations are striving to streamline the mortality coding process and the NCIS will continue to work to ensure that the coronial data stored by the NCIS is as timely and accurate as possible.

The results of the study identified certain inconsistencies between ABS and the independent coder, one of which related to the inconsistency in the application of coding standards, such as the allocation of fifth characters. NCIS acknowledges that for the purpose of assigning fifth character (and in some instances fourth character) the independent coder followed ICD-10-AM coding practices and standards. It is acknowledged that the allocation of the fifth character is not required for mortality coding and this was allowed for in some of the comparisons. However the inconsistency in the allocation of the fifth character within ABS coding practices (sometimes included, sometimes not) could be something that is examined in future.

NCIS would welcome the opportunity to perform a subsequent study in partnership with the ABS pending funding and personnel availability.

Leanne Daking