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Potential changes to chapters XIX and XX for fifth edition ICD-10-AM

Submission to the National Centre for Classification in Health

Geoff Henley
James Harrison

FLINDERS UNIVERSITY
ADELAIDE AUSTRALIA

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Abbreviations

AIPN	Australian Injury Prevention Network
AIS	Abbreviated Injury Scale
ICD-10	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
ICD-10-CM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Clinical Modification (US version - Draft only)
ICECI	International Classification of External Causes of Diseases
ICISS	ICD-based Injury Severity Score
IPRIA	Injury Prevention Research Institutions of Australia
MUARC	Monash University Accident Research Centre
NCCH	National Centre for Classification in Health
NCIS	National Coroners Information System
NISU	National Injury Surveillance Unit
SIPP	Strategic Injury Prevention Partnership
VISAR	Victorian Injury Surveillance and Applied Research
WHO	World Health Organisation

1 Introduction

1.1 Aim

The main object of the project leading to this report was to prepare a submission to the National Centre for Classification in Health (NCCH) for amendments to the fifth edition of the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM) scheduled to be released in early 2006. The report relates specifically to Chapter XIX—Injury, poisoning and certain other consequences of external causes, and Chapter XX—External causes of morbidity and mortality. The submission was developed in collaboration with other organisations with an interest in injury surveillance.

1.2 Background of ICD-10-AM

The International Classification of Diseases (ICD) is designed to promote international comparability in the collection, processing, classification, and presentation of hospital inpatient and mortality data. The Tenth Revision of the International Classification of Diseases (ICD-10) is used to code diagnoses and external causes of injury and poisoning. Chapter XIX—*Injury, poisoning and certain other consequences of external causes* and Chapter XX—E*xternal causes of morbidity and mortality* are particularly important in relation to injury surveillance and control.

Australia has extended the ICD-10 for clinical purposes by developing the ICD-10-AM. This document, which was first published in 1998, has been modified by the NCCH each two years since then, with the assistance of clinicians and clinical coders to ensure that the classification is current and appropriate for Australian clinical practice. Assistance has also been sought from other health-related organisations including those involved in injury surveillance whose input has led to a number of changes in both Chapters XIX and XX. This process of revision provides valuable periodic opportunities for users of the ICD-10-AM coded data to assess the extent to which the system provides them with necessary information, and to propose expansion of this classification where this would enhance the value of the system. This process of revision has markedly improved the value of Australian hospital inpatient data for surveillance and research related to surveillance and control. Two notable revisions to previous editions of ICD-10-AM include the enhanced coverage of sports injury and perpetrators of assault. The project reported here was undertaken to continue this process during the development of the fifth edition of ICD-10-AM.

The third edition of ICD-10-AM was published in early 2002 and superseded the second edition as the standard for use with Australian hospital admissions from 1 July 2002. The fourth edition was released in January 2004, and superseded the third edition from 1 July 2004. According to the current schedule, the fifth edition will be released at about January 2006, for use from 1 July 2006.

1.3 Rationale for changes to ICD-10-AM

As previously mentioned, an updated version of ICD-10-AM is produced every two years. There are four main reasons for considering modifications to classifications:

- Outdated code assignment due to advances in medical knowledge
- Identification of a new disease or procedure
- A current code is too general or lacks specificity
- Typographical errors

Updating allows for the addition of new categories to existing classifications in order to correct deficiencies and to meet new and emerging needs. The greater specificity provided by additions to previous editions of the ICD-10-AM have significantly enhanced both the quality and value of injury reporting.

1.4 Overview of project method

The preparation of this report involved drafting a discussion paper on the basis of an assessment of currently existing sources of information, and comparing these to the current 4th edition of ICD-10-AM. This draft version was then distributed to other injury surveillance personnel and to members of the Strategic Injury Prevention Partnership for comment and feedback. A revised version was then presented via a workshop at the Australian Injury Prevention Network (AIPN) conference held in Mackay during September 2004. A revision of draft based on feedback at this conference was then submitted to the NCCH.

1.5 Status

This report contains the proposals resulting from this project that were submitted to the National Centre for Classification in Health in December 2004 as an input to the revision process leading to the 5th edition of ICD-10-AM.

2 Methods

The preparation of this report involved the following steps:-

- Preparation of a discussion paper by assessment of currently existing sources of information and comparing these to the current 4th edition of ICD-10-AM. These sources of information are detailed in section 2.1 below.
- Distribution of a draft version of the discussion paper to other injury surveillance personnel including members of the Strategic Injury Prevention Partnership (SIPP) and the Injury Prevention Research Institutions of Australasia (IPRIA) for comment and feedback.
- Revision of draft version based on feedback from personnel as mentioned above.
- Presentation of revised draft to interested parties via a workshop at the Australian Injury Prevention Network (AIPN) conference held in Mackay during September 2004.
- Revision of draft based on feedback at the MacKay conference prior to submission to the NCCH.

2.1 Sources for potential changes

This report was written to assess both the desirability and feasibility of potential changes to Chapters XIX and XX for the fifth revision of ICD-10-AM. Different sources were assessed for potential changes, chiefly by comparing these sources to the recently released fourth revision of ICD-10-AM. These sources are summarised below:

- **Patterns of use of existing categories** with particular reference to categories with potential to improve the performance of severity measures based on Chapter XIX.
- **Injury surveillance experience**. The National Injury Surveillance Unit (NISU) and other groups engaged in injury surveillance have found that certain aspects of their work has been hampered by the absence of certain categories from the ICD-10-AM.
- **Comparison with other relevant classifications**. For this report, we have compared Chapters XIX and XX of fourth edition ICD-10-AM (National Centre for Classification in Health 2004) with the equivalent chapters in the May 2002 draft of ICD-10-CM (National Center for Health Statistics 2002). We also compared Chapter XX of ICD-10-AM with the International Classification of External Causes of Injuries (ICECI) version 1.2 (ICECI Coordination and Maintenance Group 2004).

2.1.1 Patterns of use of existing coding categories

ICD-10-AM contains a number of injury diagnosis and external cause codes which are commonly applied both in the case of hospital separations and mortality data. In some instances these codes may be too general or lack specificity. The expansion of existing categories or addition of new categories where appropriate, increases the options available to coders and reduces the reliance on coding to 'Other specified' categories.

For the purposes of this report, the number of occurrences of injury and poisoning diagnosis codes and related deaths were chosen from an Australian hospital separations data set as outlined in a recent injury severity report (Stephenson and Henley 2003). Only diagnoses with at least 4,000 occurrences and/or at least 40 deaths were included.

The number of occurrences of external cause codes and related deaths were selected from the 1999–2000 Australian hospital separations data set. Only codes with at least 2000 diagnoses and/or at least 20 deaths were included.

General observations relating to the analysis of patterns of use of existing coding categories are outlined in Appendix A1. In summary, these observations suggested that injury diagnosis codes relating to some types of drug poisoning and complications of surgical and medical care, as well as external cause codes relating to falls and complications of medical and surgical care may benefit from the addition of new categories.

2.1.2 ICD-based Injury Severity Score (ICISS)

Injury severity measurement is important for meaningful comparison of outcomes of trauma care, and assessment of burden of injury. Trends in hospital separations are often used as a proxy for trends in population incidence. These trends can be misleading due to variations over time or between places in factors unrelated to incidence, such as admission policies and practices. Injury severity measurement is a promising basis for improving measurement of trends in the population incidence of injury, as the incidence of serious injury is less likely to be affected by extraneous factors (Cryer and Jarvis 1999).

Different injury severity criteria are potentially of interest depending on the application. These include threat-to-life (probability of death), cost, impairment, incapacity, impact on quality of life, and disability

Two methods have been shown to be capable of providing fairly reliable probability of death estimates based on ICD diagnosis codes. One method involves translation of ICD-based codes to Abbreviated Injury Scale (AIS) scores (Association for the Advancement of Automotive Medicine, 1990) via the proprietary software package ICDMAP-90 (MacKenzie and Sacco 1997). The other method, known as ICISS (ICD-based Injury Severity Scale), involves calculating a Survival Risk Ratio (SRR), i.e. the probability of survival, for each individual injury diagnosis as the ratio of the number of patients with that injury code who have not died to the total number of patients diagnosed with that code. Thus, a given SRR represents the likelihood that a patient will survive a particular injury. Each patient's ICISS score—survival probability—is then the product of the probabilities of surviving each of their injuries individually. This may be a single SRR, as in the case of a patient with a single injury, or it may be multiple SRRs, as in the case of a patient with multiple injuries. The estimated probabilities obtained—with certain caveats—can be applied to cases in other similar data collections (Osler and Rutledge 1996). ICISS appears to be a reasonable way to estimate severity for databases using ICD-10-AM.

Categories used for a large number of fatal cases, but also for a much larger number of other cases, offer potential for improving the overall performance of the ICD-10-AM for ICISS if they are split into sub-categories with diverse and valid SRRs. One of the objectives of this report is to assess the suitability of these categories for splitting into

subcategories, with a subsequent increase in specificity, in relation to the publication of the fifth edition of ICD-10-AM. It should be stated that the objective of splitting into subcategories is made primarily to improve injury surveillance reporting and not purely to enhance ICISS performance.

General observations relating to the comparisons with ICISS are outlined in Appendix A2. Twenty (40%) of these categories relate to some type of fracture, with seven of these associated with fractures of the femur. Head injuries, thoracic injuries and certain complications of surgical and medical care are also prominent on this list.

A degree of specificity is already available to a number of these codes by the inclusion of additive and external cause codes. Examples include the use of additive codes to identify open or closed fractures as well as indicating the duration of loss of consciousness in relation to head injuries. Despite this, the further splitting of some of these codes into subcategories may be of benefit for future injury surveillance.

2.1.3 Injury Surveillance

During the course of their investigations, researchers sometimes find that some of the categories in the then current revision of ICD-10-AM are too broad or lack necessary categories. One of the objectives of this report is to compile a list of potential changes from other researchers and determine which of these suggestions might be suitable for inclusion in the 5th edition of ICD-10-AM. Appendix A3 provides a summary of potential changes. More detailed information on these changes is provided in Section 3 of this report.

2.1.4 ICD-10-CM

The pre-release draft of the International Classification of Diseases and Related Health Problems, tenth revision, Clinical Modification (ICD-10-CM) has been developed by the National Center for Health Statistics in the United States to code morbidity diagnoses and procedures for hospital inpatients. Like ICD-10-AM, ICD-10-CM is a clinical modification of the World Health Organisation's International Classification of Diseases and Related Health Problems, tenth revision (ICD-10). The term clinical is used to emphasise the modification's intent, which is to serve as a useful tool in the area of classification of morbidity data for the indexing of medical records, medical care review, and ambulatory and other medical care programs, as well as for basic health statistics. To describe the clinical picture of the patient, the codes must be more precise than those needed only for statistical groupings and trend analysis. One of the objectives of this report is to perform a direct comparison between the fourth edition of ICD-10-AM and ICD-10-CM to determine whether the ICD-10-CM has additional codes which might be suitable for inclusion in the fifth edition of ICD-10-AM subsequently leading to improvements in injury surveillance. Appendix A4 provides a summary of general observations in relation to key differences between ICD-10-AM and ICD-10-CM.

In ICD-10-CM there is a large expansion of categories both in relation to injury and poisoning and external cause codes. Although this expansion has the potential to improve details relating to both the extent and circumstances of injuries, improved information may be limited by the amount of detail provided in clinical records as well as increasing the time taken to perform coding tasks. Also, since Australia has a much

smaller population than the United States, many of these categories may never be used or have a very small number of cases, thereby reducing their usefulness. Despite this, some of these expanded categories have obvious potential in terms of improving the usefulness of ICD-10-AM as an injury surveillance tool.

One concern is that there is a loss of distinction between the roles of Chapter XIX and Chapter XX by inclusion of categories referring to intent and to some external causes in Chapter XIX. Consequentially, many categories have been dropped from Chapter XX resulting in a loss of comparability with ICD-10. Also, as mentioned previously, complications for cardiac and vascular prosthetic devices are also used for genitourinary prosthetic devices, internal orthopaedic prosthetic devices and other internal prosthetic devices. The listed complications are specific to cardiac and vascular prosthetic devices and are not necessarily found in the other three types of devices which additionally may have complications which are specific only to them.

ICD-10-CM is a fruitful source for potential enhancement of Chapters XIX and XX in ICD-10-AM. Almost 50% of entries in sections 3.2 and 3.3 were based on this source.

2.1.5 International Classification of the External Causes of Injury (ICECI)

Over the past 20 to 30 years the limitations of the International Classification of Diseases (ICD) External Cause codes have become apparent to people involved in injury surveillance and prevention. In response to these limitations, a number of other classification systems have been developed. This ultimately resulted in the International Classification of External Causes (ICECI).

The ICECI is a multi-axial code set to capture detailed information for multiple use about different aspects of injury circumstances, e.g. the place of occurrence, activity, intent of injury, etc. The purpose of the classification is to assist researchers and prevention practitioners in:

- Defining more precisely the domain of injuries they are studying;
- Answering questions such as where did the injury occur, how, under what circumstances and which products were involved; and
- In providing a more detailed description of specific categories of injuries such as sports injuries and injuries due to violence.

In September 2002, a review was undertaken to improve technical compliance of the ICECI with taxonomic principles, and to enable indexing. Some further minor alterations resulted in Version 1.1a. This version, together with an index, were submitted to the WHO Family of International Classifications (WHO-FIC) meeting in October 2003, at which the ICECI was admitted as a Related Classification. Since then, some further revision and enhancement of the index has produced Version 1.2, which was adopted in July 2004.

One of the objectives of this report is to perform a direct comparison between the fourth edition of ICD-10-AM and the ICECI to determine whether the ICECI has additional information which might be suitable for inclusion in the fifth edition of ICD-10-AM subsequently leading to improvements in injury surveillance. Appendix A5 provides a summary of general observations on the ICECI in relation to ICD-10-AM.

The ICECI's multi-axial coding system allows for greater flexibility and diversity than the ICD-10-AM. It is much more comprehensive in terms of the object or substance causing the injury, the place where the injury occurred, the activity in which the injured person was engaged at the time the injury occurred and the intent of the injured person. However, there are a small number of categories in which the ICD-10-AM provides a greater selection, a notable example being in the area of venomous animals (this section of the ICD-10-AM Chapter XX was expanded in the second and third editions.

ICECI is a useful source for potential enhancement of Chapter XX in ICD-10-AM. Almost 12% of entries in sections 3.2 and 3.3 were based on this source.

2.2 Survey of injury surveillance personnel

All potential changes were listed in the draft proposal along with comments relating to both the rationale and feasibility for each change. For each change, the source(s) was also included within the table.

Interested parties were invited to provide feedback on each potential change. This allowed the reader to select from a scale of 1 (Very desirable/feasible) to 5 (Very undesirable/unfeasible), for both the desirability and feasibility of each change. A further option (i.e. 9) allowed the reader to indicate if they felt they were not in a position to make an informed response. Readers were also able to put forth further amendments and/or additions to potential changes, if they wished to do so. A draft version was sent to members of the Strategic Injury Prevention Partnership (SIPP) and Injury Prevention Research Institutions of Australasia (IPRIA) committees, who in turn forwarded copies to other interested parties.

In all, eight responses were received, with five of these being detailed written responses[1]. These responses were then collated and a decision was made as to which changes would be included in the final submission to the NCCH. Changes that received strong universal support were included in the final submission whereas those changes that universally received strong negative responses were dropped. Changes that received a mixed response were reassessed prior to making a decision as to whether or not they were included.

A workshop was conducted at the Australian Injury Prevention Network (AIPN) conference held in Mackay during September 2004 to allow interested parties to provide further feedback on the proposed changes. Further amendments were made to the draft document as a result of this feedback.

A revised draft version of the document was then sent to the NCCH for comment regarding the feasibility of the proposed changes. Upon feedback from NCCH, further amendments were made to create the final document which was ready for submission to the NCCH. Chapter 3 of this report contains the proposals that were submitted to the NCCH in December 2004, for consideration during the preparation of the 5th edition of the ICD-10-AM.

[1] A summary of these responses is included in appendix A6 of this report.

3 Proposed changes

3.1 Summary of proposed changes

This chapter contains a list of proposed changes along with an assessment of the rationale and feasibility of each change.

The chapter is arranged to match the order of corresponding parts of ICD-10-AM. Potential changes to Chapter XIX of ICD-10-AM are presented in Section 3.2 (pp11–22) and potential changes to Chapter XX are in section 3.3 (pp23–60).

The potential changes are of three types:

- Refinements to existing categories, mainly revised or additional inclusion and exclusion terms.
- Definitions for some important terms, to assist data coders and users by reducing ambiguity.
- Provision of additional sub-categories.

In assessing and developing proposed changes, we took account of the strength of the case for each change (chiefly, the extent to which it would improve the value of hospital data for injury prevention and management and whether the change was supported by injury surveillance personnel), the feasibility of data collection (chiefly considering the likely availability of necessary information in hospital records and the burden of collection) and the applicability of the proposed change (chiefly considering constraints related to the structure of ICD-10, the terms under which it is used for ICD-10-AM, and its implementation in data systems and agreements in Australia).

We omitted potential changes for which the case was weak and those where necessary information was unlikely to be available in source records. Appendix 10 lists potential changes which were not included in the final submission. The remainder, presented in this chapter, are in three groups.

1. The first are the proposed changes for which it was possible to propose a specific change to the ICD-10-AM, and the proposed change is applicable (i.e. it does not appear to conflict with constraints on altering the ICD-10-AM). Changes of this type are presented in plain boxes with a white background.

   We consider that these changes are good candidates for inclusion in edition 5 of ICD-10-AM.

2. The second group are proposed changes which are assessed as worthwhile and practicable, but implementation (at least in the way proposed here) appears to conflict with a constraint on altering the ICD-10-AM. In most cases, the issue is that the proposed change appears to require use of six-character codes. Changes of this type are presented in boxes with a double line as the border.

   This group includes some potentially important changes (e.g. to improve the measurement of injury severity). We may have overlooked ways in which some or all of them might be implemented within existing

constraints. If it does not prove possible to implement some of these changes in edition 5 of ICD-10-AM, we would welcome advice on a course of action that might enable their implementation in the sixth edition.

3. The third group are proposed changes which we assess to be worthwhile, but not yet ready for implementation. This is, variously, because research is needed to guide the specification of sub-categories, further consultation is warranted or because of uncertainty about the availability of necessary information in hospital records. Changes of this type are presented in shaded boxes.

   These incompletely developed changes have been retained in this chapter to provide an indication of likely future submissions. However, we anticipate that most of these will not be implemented in the fifth edition of ICD-10-AM.

Key to information in boxes

The numbers which appear in italics after many categories represent the number of hospital separations with each code in Australia during the 2002–2003 financial year, and the number of these in which the patient died during the episode in hospital.

The '***Source'*** indicates the source(s) of the potential change to which the following codes apply:

1 Analysis of patterns of use of existing categories
2 ICISS
3 Injury surveillance information
4 ICD-10-CM (May 2002 draft)
5 ICECI

3.2 Chapter XIX—Injury, poisoning and certain other consequences of external causes (S00–T98)

3.2.1 Measurement of injury severity

Injury severity measurement is important for meaningful comparison of outcomes of trauma care, and assessment of burden of injury. For a number of years, methods relating to injury severity measurement were primarily derived from the Abbreviated Injury Scale (AIS), which assigns a severity score to an injury on a scale from 1 (minor) to 6 (major). However in recent years, severity scoring methods based on the use of empirically derived estimates of survival based directly on ICD coding have gained wider acceptance. This method is known as the ICD-based Injury Severity Score (ICISS).

Where case data are already coded to ICD, this method is much less costly than AIS-based methods, and had been shown to be as good as AIS-based methods for prediction of survival (Meredith and Evans 2002, Stephenson and Langley 2002). It has been successfully trialled initially using ICD-9 coding and more recently with ICD-10-AM coding (Stephenson and Henley 2003).

The ICISS method depends on the presence in ICD-10-AM of categories that distinguish groups of cases with differing likelihood of survival. For example, S06 (Intracranial injury) serves this purpose quite well because its sub-categories are specified in terms related to severity (i.e. duration of unconsciousness; volume of intracranial haemorrhage)[2].

While the brain is the internal organ most often damaged in fatal cases of injury, other internal organs are involved in many cases. Existing ICD-10-AM codes for these conditions are less well framed than S06 for characterising injury in terms of severity.

The American Association for the Surgery of Trauma (AAST) has developed an Organ Injury Scale (OIS) which measures the degree of injury based on a Roman numeral scale from I, least severe, to V, most severe (see Appendix A8). Injuries are graded according to the size (surface area) and depth of haematomas and/or lacerations and, in some cases, the extent of vascular injury. (We understand that this framework is being used in developing relevant parts of the next version of the Abbreviated Injury Scale.)

Cases involving injury to internal organs comprise a small proportion of all injury cases. In addition, the very seriousness of the conditions tends to ensure that information necessary for coding is available in case records.

This framework could be embedded into ICD-10-AM, as shown in Appendix A9. However, the method proposed here requires the use of a sixth character, because some existing categories in the ranges affected already have five character codes.

[2] While S06 functions quite well for predicting survival, it can probably be improved, particularly in terms of prediction of non-fatal outcomes of intracranial injury.

The AAST scheme, presented in Appendix A8, forms the basis of the following proposed changes.

Categories:

S27.3 Other injuries of lung *(1699/120))*
S27.4 Injury of bronchus *(3/0)*
S27.6 Injury of pleura *(52/1)*

Proposed change: Addition of sixth character to distinguish degree of injury. Appendix A7 outlines proposed method of adding this character. This character based upon grading system as indicated in Appendix A8, Table A8.1.

Rationale for change: Severe lung injuries commonly lead to death. Linking degree of injury to death or survival will improve ability to predict outcomes. Currently, only the type of injury is indicated i.e. contusion and haematoma or laceration.

Feasibility: Depends upon the extent to which terminology used to document organ trauma in Australian hospitals is consistent with the AAST framework.

Source: 4

Categories: S36 Injury of intra-abdominal organs

S36.0 Injury of spleen *(1012/33)*
S36.1 Injury of liver or gallbladder *(832/47)*
S36.2 Injury of pancreas *(96/4)*
S36.3 Injury of stomach *(54/1)*
S36.4 Injury of small intestine *(365/19)*
S36.5 Injury of colon *(257/10)*
S36.6 Injury of rectum *(70/1)*

Proposed change: Addition of sixth character to distinguish type and degree of injury. Appendix A7 outlines proposed method of adding this character. This character based upon grading system as indicated in Appendix A8, Tables A8.2, A8.3, A8.4, A8.5, A8.6, A8.7 and A8.8.

Rationale for change: Severe injuries to intra-abdominal organs commonly lead to death. Linking degree of injury to death or survival will improve ability to predict outcomes. Currently, only the spleen (S36.0) and the liver (S36.1) contain subcategories that provide information as to the type and extent of injury. The spleen has generalised subcategories that do not specify the extent of the injury in terms of size or depth. The liver has more specific information relating to the extent of laceration. However, neither of these organs has specific information as the extent of injuries related to haematomas or contusions. Information pertaining to all other intra-abdominal organs specifies location of injury only.

Feasibility: Depends upon the extent to which terminology used to document organ trauma in Australian hospitals is consistent with the AAST framework.

Source: 4

Categories: S37 Injury of urinary and pelvic organs

S37.0 Injury of kidney *(828/7)*
S37.1 Injury of ureter *(35/1)*
S37.2 Injury of bladder *(204/9)*
S37.3 Injury of urethra *(299/16)*

Proposed change: Addition of sixth character to distinguish type and degree of injury. Appendix A7 outlines proposed method of adding this character. This character based upon grading system as indicated in Appendix A8, Table A8.9

Rationale for change: Severe injuries to urinary and pelvic organs commonly lead to significant health problems and death. Linking degree of injury to death or survival will improve ability to predict outcomes.

Currently, only the kidney (S37.0) contains subcategories that provide information as to the type and extent of injury. Like the spleen, the kidney has generalised subcategories that do not specify the extent of the injury in terms of size or depth and has no specific information as to the extent of injuries related to haematomas or contusions.

Feasibility: Depends upon the extent to which terminology used to document organ trauma in Australian hospitals is consistent with the AAST framework.

Source: 4

Categories: S15, S25, S35, S45, S55, S65, S75, S85, S95 Injury of blood vessels [at neck level, of thorax, of abdomen, lower back and pelvis, at shoulder and upper arm level, at forearm level, at wrist and hand level, at hip and thigh level, at lower leg level, at ankle and foot level].

Proposed change: Addition of fifth character (sixth for S15) to distinguish degree of injury.

0 Minor laceration
Incomplete transection or superficial laceration

1 Major laceration
Complete transection or traumatic rupture

2 Other specified injury

3 Unspecified injury

Rationale for change: Currently, there is no clear cut method of determining severity of injury. Major lacerations of blood vessels at neck level, of thorax and of abdomen, lower back and pelvis are commonly life threatening.

Feasibility: Depends upon whether there is a common nomenclature used by surgeons when reporting upon injuries to blood vessels.

Source: 4

3.2.2 External constriction

Categories: S00, S10, S20, S30, S40, S50, S60, S70, S80, S90 Superficial injury of [head, neck, thorax, abdomen, lower back and pelvis, shoulder and upper arm, forearm, wrist and hand, hip and thigh, lower leg, ankle and foot].

Proposed change: An extra fifth character to indicate an 'External constriction' to be added to existing fifth character subdivision for categories S00–S30. i.e.

0 Unspecified

1 Abrasion

2 Blister

3 Insect bite

4 Superficial foreign body

5 Contusion

6 External constriction

8 Other

An extra code for 'External constriction' to be added to categories xx.8 where xx = S40–S90 i.e.

S40.85 External constriction of shoulder and upper arm

S50.85 External constriction of forearm

S60.85 External constriction of wrist and hand

S70.85 External constriction of hip and thigh

S80.85 External constriction of lower leg

S90.85 External constriction of ankle and foot

Rationale for change: Important to know what percentage of superficial injuries are caused by some form of external constriction.

Feasibility: Depends if this type of superficial injury is included in the clinical record.

Source: 4

3.2.3 Poisoning by drugs

Category: T42.4 Poisoning by benzodiazepines *(9244/36)*

Proposed change: Addition of fifth character to distinguish between types of benzodiazepines.

T42.40 Diazepam

T42.41 Oxazepam

T42.42 Nitrazepam

T42.43 Temazepam

T42.44 Lorezepam

T42.45 Flunitrazepam

T42.46 Bromazepam

T42.47 Clonazepam

T42.48 Other benzodiazepines

T42.49 Unspecified benzodiazepines

Rationale for change: Benzodiazepines are some of the most common medications involved in poisonings. Important to know which types of benzodiazepines are more commonly associated with poisoning.

Feasibility: Depends on whether the type of benzodiazepine is included in the clinical record.

Source: 1,2

Note: Need also to consider T39.1 4—Aminophenol derivatives (eg paracetamol) (6296/13), T43.6 Psychostimulants (eg amphetamines) (1011/6) and T43.0–2 (6464/13) antidepressants.

3.2.4 Food reactions

Category: T78.0 Anaphylactic shock due to adverse food reaction *(663/1)*

Proposed change: Addition of fifth character to distinguish type of food causing shock.

T78.00 Peanuts
T78.01 Shellfish
T78.02 Other fish
T78.03 Fruit and vegetables
T78.04 Milk and dairy products
T78.05 Eggs
T78.06 Chocolate
T78.08 Other specified food
T78.09 Unspecified food

Rationale for change: Important to know which types of foods are more likely to cause an anaphylactic reaction.

Feasibility: Depends on how often type of food causing reaction is included in the clinical record.

Source: 4

Notes: Can be known to patient from previous encounters, and if not, identifying the food allergy would be the focus of follow-up sensitivity testing by way of elimination diets.

Data may not reflect true prevalence of this condition in population. Those who know what their allergic to would avoid these foods and not end up as a hospital separation.

Possibly best to try and capture this using an external cause code, then ALL types of food reactions could be captured e.g. L50.0 Allergic urticaria caused by food. Whether fifth character of External Cause code should also be applied to T78.1 Other adverse food reactions NEC.

3.2.5 Complications of surgical and medical care, nec

Catergory: T81.8 Other complications of procedures, nec *(8176/273)*

Proposed change: Addition of fifth character to distinguish nature of complication.

T81.80 Complication of inhalation therapy
T81.81 Emphysema following a procedure
T81.82 Persistent post-operative fistula
T81.83 Other complication of procedures, nec

Rationale for change: Allows more precise reporting as to the exact nature of the complication.

Feasibility: Depends upon how detailed the complication is described in the clinical record.

Source: 4

Note: Categories listed may only make up a small percentage of 'other complications'. Need to investigate whether these additions would provide any useful information.

Category: T82 Complications of cardiac and vascular prosthetic devices, implants and grafts

Proposed changes: Addition of fifth character to distinguish nature of complication. (For codes T82.0–T82.5.)

- mechanical breakdown
- displacement (malposition)
- leakage
- obstruction
- perforation
- protrusion
- other mechanical complications

Addition of fifth character to distinguish nature of complication. (For code T82.8.)

- embolism
- fibrosis
- haemorrhage
- pain
- stenosis
- thrombosis
- other complications

It may be possible to use a sixth character to provide more detail about the device causing the complication e.g.

- T82.1—electrodes or pulse generator
- T82.3—aortic (bifurcation) graft replacement or arterial (carotid) (femoral) graft (bypass)
- T82.5—fistula/shunt (surgically created), artificial heart, balloon device, infusion catheter or umbrella device
- For T82.6 and T82.7 could add note 'Use additional code (B95–B97) to identify infectious agent'

Rationale for change: Beneficial to know most common causes of complications of devices as well as complications occurring in patients. Could have implications for future designs.

Feasibility: Depends upon how detailed the complication is described in the clinical record.

Source: 1,2,4

Notes: Categories listed may only make up a small percentage of complications. Need to investigate whether these additions would provide any useful information.

T82.0 (163/7), T82.1 (1384/26), T82.2 (37/3), T82.3 (462/13), T82.4 (323/9), T82.5 (1582/70), T82.8 (6727/236)

Category: T83 Complications of genitourinary prosthetic devices, implants and grafts

Proposed changes: Addition of fifth character to distinguish nature of complication. (For codes T83.0–T83.4.)

- mechanical breakdown
- displacement
- leakage
- obstruction
- perforation
- protrusion
- other mechanical breakdown

Addition of fifth character to distinguish nature of complication. (For code T83.8.) Likely categories include:

- embolism
- fibrosis
- haemorrhage
- pain
- stenosis
- thrombosis
- other complications

It may be possible to use a sixth character to provide more detail about the device causing the complication e.g.

- T83.0—cystosomy catheter or indwelling catheter
- T83.1—electronic stimulator device, sphincter implant or stent

For T83.5 and T83.6 could add note 'Use additional code (B95-B97) to identify infectious agent'

Rationale for change: Beneficial to know most common causes of complications of devices as well as complications occurring in patients. Could have implications for future designs.

Feasibility: Depends upon how detailed the complication is described in the clinical record.

Source: 1,4

Notes: Categories listed may only make up a small percentage of complications. Need to investigate whether these additions would provide any useful information.

T83.0 (1596/77), T83.1 (504/12), T83.2 (25/2), T83.3 (92/0), T83.4 (294/1), T83.8 (1795/74)

Category: T84 Complications of internal orthopaedic prosthetic devices, implants and grafts

Proposed changes: Addition of fifth character to distinguish nature of complication. (For codes T84.0–T84.4.)

- Wear
- breakage/rupture
- loosening
- dislocation
- malpositioning/malalignment
- instability
- migration
- mechanical breakdown

Also addition of fifth character to distinguish nature of complication. (For code T84.8.) Likely categories include:

- infection/sepsis
- periprosthetic fracture
- progression of initially limited disease
- stiffness/fibrosis
- pain
- lysis
- inflammation/ rejection
- other complications

It may be possible to use a sixth character to provide detail about the location of the device causing the complication e.g.

- T84.0—knee, hip, other or unspecified
- T84.1—humerus, bone of forearm, femur, bone of lower leg or unspecified bone of limb
- T84.2—bones of hands of fingers, bones or foot or toes, vertebrae or other bones
- T84.3—electronic bone stimulator or other bone
- T84.4—muscle and tendon graft and other internal orthopaedic devices
- T84.5—knee, hip, other or unspecified
- T84.6—arm, leg, spine or other site

Joints can be captured using the Z96.6–- and Z96.7 for other orthopaedic implants.
So perhaps.. 'Use additional code to…etc'.

For T84.6 and T84.7 could add note 'Use additional code (B95–B97) to identify infectious agent'.

Rationale for change: Important to know most common causes of complications of devices as well as complications occurring in patients. Could have implications for future designs.

Feasibility: Depends upon how detailed the complication is described in the clinical record.

Source: 1,2,4

Notes: Categories listed may only make up a small percentage of complications. Need to investigate whether these additions would provide any useful information.

T84.0 (6466/48), T84.1 (758/4), T84.2 (443/3), T84.3 (139/1), T84.4 (949/9), T84.8 (4003/25)

Category: T85 Complications of other internal prosthetic devices, implants and grafts

Proposed changes: Addition of fifth character to distinguish nature of complication. (For codes T85.0–T85.6.)

- mechanical breakdown
- displacement (malposition)
- leakage
- obstruction
- perforation
- protrusion
- other mechanical breakdown

Also addition of sixth character to distinguish nature of complication. (For code T85.8.)

- embolism
- fibrosis
- haemorrhage
- pain
- stenosis
- thrombosis
- other complications

It may be possible to use a sixth character for codes T85.0–T85.6 to provide detail about the nature of the complication e.g.

- T85.1— brain, peripheral nerve or spinal cord
- T85.3— corneal graft or prosthetic orbit of eye
- T85.5—bile-duct prothesis or oesophageal anti-reflux device
- T84.6—epidural and subdural infusion catheter, intraperitoneal dialysis catheter, nonabsorbable surgical material NOS, permanent sutures and sternal wires

For T85.7 could add note ‘Use additional code (B95–B97) to identify infectious agent’.

Rationale for change: Important to know most common causes of complications of devices as well as complications occurring in patients. Could have implications for future designs.

Feasibility: Depends upon how detailed the complication is described in the clinical record.

Source: 1,4

Notes: Categories listed may only make up a small percentage of complications. Need to investigate whether these additions would provide any useful information.

T85.0 (735/18), T85.1 (116/0), T85.2 (527/0), T85.3 (337/0), T85.4 (864/0), T85.5 (2041/92), T85.6 (2142/82), T85.8 (273965)

Category: T86 Failure and rejection of transplanted organs and tissues

Proposed changes: Addition of fifth character to distinguish nature of failure and rejection.

Categories for T86.0:

- graft vs host reaction
- other complication
- unspecified complication

Categories for T86.1–4,8,9:

- failure
- rejection
- infection
- other
- unspecified

Rationale for change: Important to know most common causes of complications occurring in patients.

Feasibility: Depends upon how detailed the complication is described in the clinical record.

Source: 1,4

Notes: Categories listed may only make up a small percentage of failures or rejections. Need to investigate whether these additions would provide any useful information.

T86.0 (1161/72), T86.1 (2999/15), T86.2 (589/8), T86.3 (15/0), T86.4 (177/7), T86.8 (1764/44), T86.9 (4/0)

3.3 Chapter XX

3.3.1 Activity (U50–Y98)

Category: U54.7 Wind surfing

Proposed change: Add inclusion: Kite surfing

Rationale for change: Kite-surfing is a relatively new recreational activity that has become increasingly popular in Australia

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: U55.8 Other specified ice or snow sport

Proposed change: Add inclusion: Ice sailing

Rationale for change: Ice sailing is a relatively new recreational activity that has become increasingly popular in Australia

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: U63.03 Steeplechase

Proposed changes: Alter title of U63.03 to 'Steeplechase and cross-country eventing'.

Add inclusion:

- Roads and tracks

Add exclusion:

- Horse racing events (U63.3)

Rationale for change: Steeplechase, in an equestrian context, is more commonly termed 'Cross-country'.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: U63.08 Other specified equestrian event

Proposed changes: Add inclusions:

- Training days
- Vaulting competitions
- Show horse competitions
- Driving and carriage competitions
- Western and reining competitions

Rationale for change: Inclusions listed are often part of equestrian events.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: U63.3 Horse racing

Proposed changes: Alter title of U63.3 from 'Horse racing' to 'Horse racing events' and add subcategories:

- U63.30 Horse racing (flat track)
- U63.31 Horse racing (jumps)

Add exclusion:

- Steeplechase and cross-country eventing (U63.03)
- Horseracing (trotting and harness) (U63.6)

Rationale for change: Beneficial to be able to distinguish between injuries from racing horses on a flat track and racing horses where hurdles are present.

Will need to add exclusion at U63.03 some hurdle events are still called steeplechase.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: U63.8 Other specified equestrian activities

Proposed changes: Add inclusion:

- Camp-drafting
- Tent pegging
- Barrell riding

Source: 3

Comments: Amendments to U63 are part of Ray Cripp's previous submission

Category: U66.5 Land-sailing

Proposed change: New category

Rationale for change: Land-sailing is a relatively new recreational activity that has become increasingly popular in Australia.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

3.3.2 Definitions

It is proposed that the addition of the following definitions would help to provide clarification for coders. The definition of a *fall* will help to clarify the difference between an accidental fall and a fall due to being struck by an object or person or a fall due to loss of consciousness or onset of medical condition. The definition of the *height of a fall* will help to clarify the difference between falls on the same level and falls from one level to another. The definitions of *hanging* and *strangulation* will help to clarify the difference between these two forms of suffocation.

Falls (W00–W19)

(a) A fall (W00–W19) is defined as 'unintentionally coming to rest inadvertently on the ground or some lower level other than a consequence of sustaining a blow, loss of consciousness, sudden onset of paralysis as in stroke or an epileptic seizure'. ***(Source— Kellogg International Working Group).***

(b) The *height of a fall* is defined with respect to the vertical distance between the surface/object bearing (most) weight before and after the fall. ***(Source— International Classification of External Causes of Injuries (ICECI Version 1.2)).***

Examples:

- A child standing on a bed falls to the floor.

The bed supports the weight of the child before the fall and the floor bears the weight after the fall. Thus the distance of the fall is the distance between the top of the bed and the floor.

- A child swinging on a monkey bar falls to the ground.

The monkey bar bears the child's weight before the fall and the ground surface the weight after the fall. Therefore the distance of the fall is the distance between the monkey bar and the ground.

- A person sitting on a bicycle falls to the ground.

The bicycle seat carries the person's weight before the fall and the ground after the fall. The distance of the fall is the distance between the bicycle seat and the ground.

- A person walking on a footpath, stumbles and falls to the ground.

The ground carries most of the person's weight before and after the fall. The fall is therefore a fall on the same level.

- A person sitting in a chair, on a bed, etc. falls to the ground while trying to stand.

The chair (or other sitting surface) supports most of the weight of the person before the fall and the floor bears the weight after the fall. The height of the fall is the distance between the surface on which the person sat and the floor.

Hanging and strangulation W75, W76, X70, X91, Y20

Hanging is defined as compression of neck by rope, cloth, belt or another object which is bearing whole or part of the weight of the hanging person. ***(Source: ICECI Version 1.2).***

Strangulation is defined as application of pressure to the throat of a person. ***(Source: ICECI Version 1.2).***

3.3.3 Transport accidents (V01–V99)

Categories: V00–V09 Pedestrian injured in transport accident

Proposed changes: Addition of fifth character to distinguish type of pedestrian conveyance:

0 Person on foot
1 Person on skateboard
2 Person on roller-skates
3 Person on scooter (non-powered)
4 Person on mobility scooter (gopher)
5 Person in electric wheelchair (mainly used indoors)
6 Person in non-powered wheelchair
7 Person in baby-carriage
Includes:
- Pusher
- Stroller

8 Person on other specified pedestrian conveyance
9 Person on unspecified pedestrian conveyance

Also Add two new categories:

V00 Pedestrian injured in collision with person on pedestrian conveyance or animal
V07 Pedestrian injured in collision with fixed or stationary object

Rationale for change: Vital to identify which type of pedestrian conveyances are more commonly involved in transport accidents. Has implications for government legislation, road safety and design standards. (Inclusion of pedestrian conveyances is included in the current draft versions of ICD-10-CM and ICECI.)

Feasibility: Depends upon accuracy and accessibility of accident reports. Need to distinguish between pedestrian conveyances and transport devices. Often documented.

Source: 3,4,5

Category: V80.0–9 Animal-rider or occupant of animal-drawn vehicle injured in transport accident

Proposed change: Addition of fifth character to distinguish between animal-rider and occupant

0 Rider of horse

1 Rider of other animal

2 Occupant of animal-drawn vehicle

Rationale for change: Important to know how many riders are involved in collisions with other transport vehicles as opposed to occupants of animal-drawn vehicles.

Feasibility: Depends upon accuracy and accessibility of accident reports.

(V80.0 was split in third revision and has separate categories for rider but not for occupant.)

Source: 4

Category: V84 Occupant of special vehicle mainly used in agriculture injured in transport accident

Proposed change: Add inclusion:

Occupant of tractor or equipment towed by tractor when being used primarily to transport persons or goods from one place to another

Rationale for change: To clarify difference between tractor being used as a transport device as distinct from agricultural purposes.

Source: 3

Categories: V90–V94 Water transport accidents

Proposed changes: Addition of fifth character to distinguish nature of accident.

0 Overturning
1 Sinking
2 Collision
3 Fire
4 Other accident

It may be possible to use a sixth character to provide more detail about the cause of injury.

0 fall
1 hit by
2 struck by
3 crushed by

Rationale for change: Important to water transport authorities to have more specific details on nature of accidents e.g. distinguish between collisions as distinct from problems originating within watercraft.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Note: V93 accounted for 426 (52%) of all admissions in 2002/03. Others were V94 (28%), V91 (11%),V92 (7%) and V90 (2%).

Categories: V95,V96 Air and space transport accidents

Proposed changes: Addition of fifth character to distinguish nature of accident.

0 Crash
1 forced landing
2 collision
3 fire
4 explosion
5 other

Rationale for change: Of interest to air transport authorities to have more specific details on nature of accidents e.g. distinguish between collisions as distinct from problems originating within aircraft.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Note: Admissions for 2002/03

V95.0–7	***V96.0–1***
V95.1–19	***V96.1–44***
V95.2–16	***V96.2–12***
V95.3–6	***V96.8–7***
V95.8–7	***V96.9–1***
V95.9–9	

3.3.4 Falls (W00–W19)

Note: for definition of fall refer to Section 3.3.2

Category: W02.1 Fall involving skateboard

Proposed change: Add exclusion: Person on skateboard injured in transport accident (V00–V09)

Rationale for change: To clarify difference between a person on a skateboard who falls off as distinct from a person on a skateboard who falls off due to a transport accident.

Source: 3

Category: W02.6 Fall involving non-motorised scooter

Proposed change: New category

Also add exclusion: Person on scooter (non-motorised) injured in transport accident (V00–V09)

Rationale for change: Non-motorised or push scooters are in common use. Currently, there is no precise method of recording a fall from this type of device.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: W06 Fall involving bed ***(7720/533)***

Proposed changes: Addition of fourth character to specify type of bed

- **W06.0** Conventional bed
- **W06.1** Bunk bed
- **W06.2** Special bed, orthopaedic bed
  Includes: hospital bed
- **W06.3** Cot, crib
- **W06.4** Bassinet
- **W06.5** Hammock
- **W06.8** Other specified bed
- **W06.9** Unspecified bed

Rationale for change: Important for accident researchers to more accurately identify type of bed involved in accidents.

Source: 3

Category: W07 Fall involving chair ***(5033/153)***

Proposed changes: Addition of fourth character to specify type of chair

W07.0 Rocking/gliding chair
W07.1 Folding chair
W07.2 Revolving chair
W07.3 Stool
W07.4 High chair
W07.5 Bath chair
W07.6 Commode chair
W07.8 Other specified chair
Includes: sofa, couch, lounge, divan, bench seat
W07.9 Unspecified chair

Rationale for change: Important for accident researchers to more accurately identify type of bed involved in accidents

Source:3

Category: W08 Fall involving other furniture ***(1074/8)***

Proposed changes: Addition of fourth character to specify type of furniture

W08.0 Baby walker
W08.1 Change table
W08.2 Baby exercisers (bouncinettes)
W08.3 Prams and strollers
Excludes: prams & strollers involved in transport accident (V00–V99)
W08.8 Other specified furniture
W08.9 Unspecified furniture

Rationale for change: Important for accident researchers to more accurately identify type of furniture involved in accidents

Source: 3

Categories: W10–W15, W17 Fall from one level to another

Proposed change: Addition of fifth character to distinguish height of fall

0 Less than one metre

1 1–3 metres

2 Greater than 3 metres.

Rationale for change: Falls from greater than or equal to one metre are more likely to be associated with more severe injuries than falls of less than one metre.

Feasibility: Depends upon accuracy and accessibility of accident reports. Height of fall may not necessarily be included in report.

Source: 1,5

Category: W10 Fall on or from stairs and steps ***(9609/124)***

Proposed change: Addition of fourth character to distinguish between fall involving escalator and other stairs or steps

W10.0 Fall on or from escalator

Excludes: travelator

W10.8 Fall on or from other steps and stairs

Rationale for change: Important to know how many falls are due to escalators in comparison to other types of steps and stairs.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 4

Category: W13 Fall from, out of or through building or structure ***(4280/37)***

Proposed changes: Addition of subcategories

W13.0 Fall from balcony or verandah

W13.1 Fall, out of or through window

W13.2 Fall from roof

W13.3 Fall through roof

W13.4 Fall through opening in floor

W13.5 Fall from building under construction

W13.8 Fall from, out of or through other specified part of building or structure

W13.9 Fall from, out of or through building or structure, nec

Rationale for change: Important to know in which setting most injuries are occurring.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 3

Category: W16 Diving or jumping into water causing injury other than drowning or submersion ***(460/0)***

Proposed change: Addition of fourth character to distinguish nature of incident

W16.0 Hitting bottom when jumping or diving into shallow water causing injury other than drowning or submersion
Includes: lake, river, stream, open sea

W16.1 Hitting wall or diving board when jumping or diving into swimming pool causing injury other than drowning or submersion

W16.2 Hitting water surface when jumping or diving into water causing injury other than drowning or submersion

W16.8 Other and unspecified contact when jumping or diving into water causing injury other than drowning or submersion

Rationale for change: Important to know in which setting most injuries are occurring.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 4

Category: W17 Other fall from one level to another ***(6312/31)***

Proposed change: Addition of fourth character to distinguish nature of fall

W17.0 Fall into hole or pit

W17.1 Fall into quarry

W17.2 Fall into storm drain or manhole

W17.3 Fall into shaft

W17.4 Fall into empty swimming pool

W17.8 Other specified fall from one level to another

W17.9 Unspecified fall from one level to another

Rationale for change: Very broad category. Over 6,000 injuries in 12 month period. Important to know in which settings most injuries are occurring.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 1,4

Note: Difficult to ascertain how many admissions these categories would account for. For 2002–03, only 4% are known to have occurred in an industrial or construction setting and 6% on street and highway

Category: W18 Other fall on same level ***(27638/925)***

Proposed change: Addition of fourth character to distinguish nature of fall

Also add inclusion: slipping, tripping or stumbling on (irregular) footpath or road or gutter?

W18.0 Fall due to bumping against object
W18.1 Fall from or off toilet
Excludes: commode chair (W07.6)
W18.2 Fall in (into) empty bathtub or shower
W18.8 Other fall on same level
W18.9 Fall known or presumed to be on the same level, no further information

Rationale for change: Very broad category. Almost 27,000 injuries in 12 month period. Important to know in which settings most injuries are occurring.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 1,4

3.3.5 Exposure to inanimate mechanical forces (W20–W49)

Category: W20 Struck by thrown, projected or falling object ***(4455/23)***

Proposed change: Addition of fourth character to distinguish type of object

W20.0 Struck by falling object in cave-in

W20.1 Struck by object due to collapse of building

W20.8 Struck by other thrown, projected of falling object

Rationale for change: Very broad category. Almost 4,500 injuries in 2002–2003 financial period. Important to know in which settings most injuries are occurring.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 1,4

Notes: It has been suggested that there could be a code to distinguish between cave-in's due to natural structures (e.g. cave) and cave-in's due to man-made structures (e.g. mine-shaft)

About 20% of these injuries occurred in the home, 14% in industrial and construction and 6% in trade and service area. (42% are unspecified place of occurrence.)

There were no admissions in 2002–03 for W77 Threat to breathing due to cave-in, falling earth and other substances.

Category: W22 Striking against or struck by other objects ***(9753/79)***

Proposed change: Addition of fourth and fifth characters to distinguish type of object

W22.0 Striking against stationary object
- **W22.00** Wall
- **W22.01** Furniture
- **W22.02** Other stationary object

W22.1 Striking against or struck by automobile airbag
W22.8 Striking against or struck by other object

Rationale for change: Very broad category. Approx. 10,000 injuries in 12 month period. Important to know in which settings most injuries are occurring. Interesting to know impact of automobile airbags.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 1,4

Note: Approx. 25% of these occur at home, 8% in health service area, only 2% on street and highway.

Category: W25 Contact with sharp glass ***(6371/2)***

Proposed changes:

Add exclusions: striking against or being struck by falling or projected glass object not causing breakage (W20)
contact with broken glass object where breakage is due to an explosion (W35–W40)

Additions of subcategories:

W25.0 Contact with shards, fragments, splinters of broken glass object
- **W25.00** Bottles or jars
- **W25.01** Drinking glasses
- **W25.02** Decorative glass items
- **W25.08** Other specified broken glass object
- **W25.09** Unspecified broken glass object

W25.1 Contact with intact glass object with sharp edges
e.g. Sharp edge of window before installation

W25.2 Contact with damaged glass object with exposed sharp edges
e.g. Damaged vase

W25.3 Contact of moving person with stationery intact glass object, causing breakage
- **W25.30** Windows and louvers
- **W25.31** Doors and door panels
- **W25.32** Shower and bath doors, screens and partitions
- **W25.33** Other intact glass object

W25.4 Contact of moving or falling glass object with person

W25.8 Contact with other specified glass object

W25.9 Contact with unspecified glass object

Rationale for change: Important for researchers to more specific information about the types of glass objects causing injuries.

Source: 3

Category: W26 Contact with knife, sword or dagger ***(3520/4)***

Proposed changes: Addition of fourth character to distinguish type of knife

Excludes: electric knife (W29.6)

W26.0 Knife for food preparation
Includes: kitchen knife, boning knife
Excludes: table knife (W26.8)

W26.1 Utility knife
Includes: Stanley knife, hobby knife, craft knife, box cutter

W26.2 Pocket knife

W26.3 Hunting knife

W26.4 Flick knife

W26.5 Sword, dagger or machete

W26.8 Other specified knife
Includes: table knife

W26.9 Unspecified knife

Rationale for change: Important to compare number of injuries caused by different types of knifes.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 1,4

Category: W27 Contact with non-powered hand tool ***(2353/5)***

Proposed changes: Addition of fourth character to distinguish type of non-powered hand tool

W27.0 Hammer, mallet, sledgehammer

W27.1 Handsaw

W27.2 Axe, hatchet

W27.3 Chisel

W27.4 Secateurs

W27.5 Scissors, shears

W27.8 Other specified non-powered hand tool

W27.9 Unspecified non-powered hand tool

Rationale: Very broad category. Almost 2,400 injuries in 12 month period. Important to know which type of tools are causing most injuries.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 1,4,5

Category: W28 Contact with powered lawnmower (***476/1)***

Proposed change: Addition of fourth character to distinguish between walk-behind mowers and ride-on mowers

W28.0 Contact with ride-on lawnmower

W28.1 Contact with other powered lawnmower

Rationale: Important to know how many injuries are due to ride-on lawnmowers.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: W29 Contact with other powered hand tools and household machinery ***(3668/1)***

Proposed change: Addition of fourth character to distinguish type of powered hand tool or household machinery

W29.0 Grinder

W29.1 Power saw

Excludes: chainsaw (W29.2)

W29.2 Chainsaw

W29.3 Nail gun, staple gun

W29.4 Welding equipment

W29.5 Drill

W29.6 Electric knife

W29.8 Other specified powered tool and household machinery

W29.9 Unspecified powered tool and household equipment

Rationale for change: Very broad category. Over 3,500 injuries in 12 month period. Important to know which type of tools/machinery are causing most injuries.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 1,4,5

Category: W30.2 Contact with equipment towed or powered by tractor

Proposed change: Add exclusion : Occupant of equipment towed by tractor when being used primarily to transport persons or goods from one place to another (V84)

Rationale for change: Currently there is no clear indication where to code this situation

Source: 3

Category: W30.4 Contact with tractor

Proposed change: Additional category

Add inclusion: Contact with tractor or tractor parts including Power Take Off (PTO)

Add exclusion: Occupant of tractor or equipment being towed by tractor when being used primarily to transport persons or goods from one place to another (V84)

Rationale for change: NCIS report suggests that around two thirds of agricultural machinery deaths are related to tractors.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 3,5

Category: W34.1 Accidental air rifle discharge (Also see X74.1, X95.1, Y24.1)

Proposed change: Add inclusion: paintball gun

Rationale for change: Currently there is no clear indication of where to code injuries relating to paintball guns.

Source: 4

Category: W40 Explosion of other materials ***(309/3)***

Proposed change: Addition of fourth character to distinguish type of explosive material

W40.0 Explosion of blasting material as planned
W40.1 Unplanned or unexpected explosion of blasting material
W40.2 Explosion due to explosive gase
W40.8 Explosion due to other explosive material
Includes: explosion due to flammable dust in silo
W40.9 Explosion due to unspecified explosive material

Rationale: Important to know setting of explosion as well as comparing intentional blasting (such as in mining) to accidental blasts (explosive gases).

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 4

3.3.6 Exposure to animate mechanical forces (W50–W64)

Category: W55 Bitten or struck by other mammals ***(2258/2)***

Proposed change: Addition of further subcategories:

W55.0 Bitten or struck by horse—***existing category (923/1)***

W55.1 Bitten, scratched or struck by cat

W55.2 Bitten or struck by cattle
Includes: bulls, buffalo

W55.3 Bitten or struck by sheep

W55.8 Bitten or struck by other specified mammal—***existing category (1335/1)***

W55.9 Bitten or struck by unspecified mammal

Rationale for change: Currently, there is no precise method of recording the number of bites by mammals other than horse.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Category: W61 Bitten or struck by birds

Proposed: New category

W61.0 Bitten or struck by magpie

W61.8 Bitten or struck by other specified bird

W61.9 Bitten or struck by unspecified bird

Rationale for change: Currently, there is no precise method of recording injuries caused by contact with birds.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

3.3.7 Other accidental threats to breathing (W75–W84)

Category: W76 Other accidental hanging and strangulation ***(31/4)***

Note: for definition of hanging and strangulation refer to section 4.2.2

Proposed change: Addition of fourth character to distinguish types of objects

- **W76.0** Clothing
- **W76.1** Toy
- **W76.2** Blind and curtain cords
- **W76.3** Rope, cord
  Excludes: blind and curtain cords (W76.2)
- **W76.8** Other specified accidental hanging and strangulation
- **W76.9** Unspecified accidental hanging and strangulation

Rationale for change: Important for researchers to know what types of objects are causing hanging and strangulation

Source: 3

Category: W80 Inhalation and ingestion of other objects causing obstruction of respiratory tract ***(644/98)***

Proposed change: Addition of fourth character to distinguish type of object

- **W80.0** Coin
- **W80.1** Toy or part of toy
- **W80.2** Battery
- **W80.8** Other specified object
- **W80.9** Unspecified object

Rationale for change: Important for researchers to know what types of objects

Source: 3

3.3.8 Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85–W99)

Category: W85 Exposure to electric transmission lines ***(69/1)***

Proposed change:
Add inclusions: Cables transmitting electricity from power stations and power generation plants to place of use
Contact with live transmission line on ground
Contact with underground transmission lines

Add exclusion: Local wiring within a dwelling

W85.0 Contact with overhead power lines

W85.1 Contact with live fallen power lines

W85.8 Contact with other specified power lines

W85.9 Contact with unspecified power lines

Rationale: Important to compare the number of injuries occurring in domestic settings against those occurring in industrial settings.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 4

Category: W86 Exposure to other specified electric current ***(364/3)***

Proposed change: Addition of fourth character to distinguish setting of contact with electric current
W86.0 Exposure to domestic wiring and appliances
W86.1 Exposure to industrial wiring, appliances and electrical machinery
W86.8 Other exposure to electric current

Also addition of fifth character to distinguish type of contact

0 Contact while working on wiring (live)

1 Inappropriate contact with normally operating appliance or machinery

Includes: inserting conducting object into operating appliance or machinery

2 Contact with object which is electrically live due to malfunction, damage or erroneous wiring

e.g. Contact with electric radiator which is live due to damaged wiring

8 Other and unspecified contact with electric current

Rationale of change: Important to compare the number of injuries occurring in domestic settings against those occurring in industrial settings.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

3.3.9 Contact with heat and hot substances (X10–X19)

Category: X15 Contact with hot household appliances ***(269/0)***

Proposed change: Addition of fourth character to distinguish type of appliance

X15.0 Stove, oven, cooktop
X15.1 Saucepan, frying pan
X15.2 Toaster
X15.3 Specialised electric cooking appliances
Includes: sandwich toaster
waffle maker
electric frypan
X15.4 Kettle
X15.5 Clothes iron, press
X15.6 Barbeque
X15.8 Other hot household appliance
X15.9 Unspecified hot household appliance

Rationale: Very broad category. Important to know which type of appliances are causing most injuries.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4,5

3.3.10 Accidental poisoning by and exposure to noxious substances (X40–X49)

Category: X47.8 Accidental poisoning by and exposure to other specified gas and vapours (See also X67.8, Y17.8)

Proposed change: Add exclusion: motor vehicle exhaust (X47.0)

Rationale for change: Excludes possibility of accidental exposure to motor vehicle exhaust being coded to X47.8 instead of X47.0.

Source: 3

3.3.11 Chapter XX—Intentional self-harm (X60–X84)

Category: X67.8 Intentional self-harm by and exposure to other specified gas and vapours (See also X47.8, Y17.8)

Proposed change: Add exclusion: motor vehicle exhaust (X67.0)

Rationale for change: Excludes possibility of intentional self-harm due to exposure to motor vehicle exhaust being coded to X67.8 instead of X67.0.

Source: 3

Category: X70 Intentional self-harm by hanging, strangulation and suffocation ***(823/62)***

Note: for definition of hanging and strangulation refer to section 4.2.2

Proposed change: Addition of fourth character to identify more exact nature of intentional self-harm

X70.0 Hanging

X70.1 Strangulation

Excludes: hanging (X70.0)

X70.2 Suffocation

Excludes: hanging (X70.0)

strangulation (X70.1)

Rationale for change: Important to identify more accurately the method of intentional self-harm

Source: 3

Category: X74.1: Intentional self-harm by air rifle discharge (See also W34.1, X95.1, Y24.1)

Proposed change: Add inclusion: paintball gun

Rationale for change: Currently there is no clear indication of where to code injuries relating to paintball guns.

Source: 4

Category: X81 Intentional self-harm by jumping or lying before moving object ***(94/4)*** (see also Y02, Y31)

Proposed change: Addition of fourth character to distinguish between types of moving objects

X81.0	Railway train or railway vehicle
X81.1	Tram or streetcar
X81.2	Motor vehicle: traffic
X81.3	Motor vehicle: non-traffic
X81.4	Other or unspecified transport
X81.8	Before other moving object
X81.9	Unspecified moving object

Rational for change: Important for researchers to be able to more accurately identify the types of moving objects involved in suicide attempts.

Source: 3

3.3.12 Assault (X85–Y09)

Category: X95.1 Assault by air rifle discharge (See also W34.1, X74.1, Y24.1)

Proposed change:

Under X95.1 Assault by air rifle discharge include 'paintball gun'

Rationale for change: Currently there is no clear indication of where to code injuries relating to paintball guns.

Source: 4

Category: Y02 Assault by pushing or placing victim before moving object ***(18/0)*** (See also X81, Y31)

Proposed change: Addition of fourth character to more accurately identify moving object

Y02.0	Railway train or railway vehicle
Y02.1	Tram or streetcar
Y02.2	Motor vehicle: traffic
Y02.3	Motor vehicle: non-traffic
Y02.4	Other or unspecified transport
Y02.8	Before other moving object
Y02.9	Unspecified moving object

Rational for change: Important for researchers to be able to more accurately identify the types of moving objects involved in assaults.

Source: 3

Category: Y04 Assault by bodily force ***(12593/18)***

Proposed change: Addition of fourth character to distinguish type of bodily force

Y04.0 Unarmed brawl or fight
Y04.1 Human bite
Y04.2 Strike against or bumped into by another person
Y04.8 Other bodily force

Rationale for change: Very broad category. Over 12,000 injuries in 12 month period. Important to know which type of bodily force is causing most injuries.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Already has fifth character to identify relationship between attacker and victim.

3.3.13 Event of undetermined intent (Y10–Y34)

Category: Y17.8 Poisoning by and exposure to other specified gas and vapours, undetermined intent (See also X47.8, X67.8)

Proposed change: Add exclusion: motor vehicle exhaust (Y17.0)

Rationale for change: Excludes possibility of poisoning due to exposure to motor vehicle exhaust being coded to Y17.8 instead of Y17.0.

Source: 3

Category: Y24.1: Air rifle discharge, undetermined intent (See also W34.1, X74.1, X95.1)

Proposed change: Add inclusion: paintball gun

Rationale for change: Currently there is no clear indication of where to code injuries relating to paintball guns.

Source: 4

Category: Y31 Falling, lying or running before or into moving object, undetermined intent (12/0) (See also X81, Y02)

Proposed change: Addition of fourth character to more accurately identify moving object

Y31.0 Railway train or railway vehicle, undetermined intent

Y31.1 Tram or streetcar, undetermined intent

Y31.2 Motor vehicle: traffic, undetermined intent

Y31.3 Motor vehicle: non-traffic, undetermined intent

Y31.4 Other or unspecified transport, undetermined intent

Y31.8 Other moving object, undetermined intent

Y31.9 Unspecified moving object, undetermined intent

Rationale for change: Important for researchers to be able to more accurately identify the types of moving objects involved.

Source: 3

3.3.14 Military exercises (Y37)

Category Y37: Military exercises involving explosion of marine weapons

Includes: injuries to military personnel and civilians during military exercises

Proposed change: Add new category to allow for coding of injuries caused during military exercises

Y37.0 Military exercises involving explosion of marine weapons
Depth-charge
Marine mine
Mine NOS, at sea or in harbour
Sea-based artillery shell
Torpedo
Underwater blast

Y37.1 Military exercises involving destruction of aircraft
Aircraft:
- burned
- exploded
- shot down

Crushed by falling aircraft

Y37.2 Military exercises involving other explosions and fragments
Accidental explosion of:
- munitions being used in military exercises
- own weapons

Antipersonnel bomb (fragments)
Explosion (of):
- artillery shell }
- breech-block } during military exercises
- cannon block }
- mortar bomb }

Fragments from:
- artillery shell }
- bomb }
- grenade }
- guided missile } during military exercises
- landmine }
- rocket }
- shell }
- shrapnel }

Mine NOS }

Y37.3 Military exercises involving fires, conflagrations and hot substances

Asphyxia } originating from fire caused directly
Burns } by a fire-producing device or indirectly
Other injury } by any conventional weapon
Petrol bomb

Y37.4 **Military exercises involving firearm discharge and other forms of conventional warfare**

Y37.41 Military exercises involving handgun discharge

Includes: gun for single hand use
handgun, actuated by:
• air
• gas
• powder
• spring
pistol
revolver
sawn-off:
• rifle
• shotgun

Excludes: Very pistol (Y36.49)

Y37.42 Military exercises involving air rifle discharge

Includes: air gun
air, gas or spring actuated long gun
BB gun
pellet gun

Y37.43 Military exercises involving shotgun discharge

Includes: shotgun:
• NOS
• powder actuated
• pump action
• self-loading

Excludes: sawn-off shotgun (Y36.41)

Y37.44 Military exercises involving small calibre rifle discharge

Includes: .22 calibre:

- army rifle }
- hunting rifle } (automatic)(pump action)(semiautomatic)
- long gun }

Excludes: sawn-off rifle (Y36.41)

Y37.45 Military exercises involving large calibre rifle discharge

Includes: >.22 calibre:

- army rifle }
- hunting rifle } (automatic)(pump action)(semiautomatic)
- long gun }

Excludes: sawn-off rifle (Y36.41)

Y37.49 Military exercises involving discharge from other and unspecified firearms and other forms of conventional warfare

Battle wounds

Bayonet injury

Drowned in military exercises NOS

Includes: firearm NOS

gun NOS

gunshot wound NOS

rifle NOS

shot NOS

Very pistol [flare]

Y37.9 Military exercises, unspecified

Rationale for change: Currently there is no precise method of coding for persons injured during military exercises.

Note: Mirrors Y36 except for nuclear, biological, chemical and other unconventional weapons

3.3.15 Place of occurrence (Y92)

Category: Y92.0 Home ***(100466/1310)***

Proposed change: Addition of fifth character to more accurately identify type of home

Y92.00	Detached house
Y92.01	Terrace house, row house
Y92.02	Apartment, flat
Y92.03	Farmhouse
Y92.04	Residential caravan, mobile home, houseboat, motorhome
Y92.05	Boarding house, hotel
Y92.06	Driveway to home
Y92.07	Other and unspecified place in home
	Garage
	Garden
	Yard
	Swimming pool
	Tennis court
Y92.08	Other specified type of home
	Hut
Y92.09	Unspecified type of home

Rationale for change: Broad category. Approximately 100,000 admissions each year. Important to know in which settings most injuries are occurring.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 5

See below for alternative option

Category: Y92.0 Home (100466/1310)

Proposed change: Addition of fifth character to more accurately identify part of building

Y92.00 Driveway to home

Y92.01 Garden

Includes: outdoor entertaining areas

Courtyard

Y92.02 Shed, garage

Y92.03 Bathroom, toilet

Y92.04 Kitchen

Y92.05 Bedroom

Y92.06 Balcony

Y92.07 Common areas in multiple occupancy buildings

Includes: corridor

stairwell, stairway

steps

common entry point

Y92.08 Other specified part of building

Swimming pool

Tennis court

Y92.09 Unspecified part of building

Rationale for change: Broad category. Approximately 100,000 admissions each year. Important to know in which settings most injuries are occurring.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 5

Category Y92.15 Residential care facilities for people with intellectual and physical disabilities

Proposed change: New category

Rationale for change: Currently, there is no precise method of recording the location of injuries that occur in this type of setting.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: Y92.22 Health service area ***(71229/796)***

Proposed change: Addition of sixth character to distinguish type of health service area

Y92.220 Hospital
Y92.221 Nursing home
Y92.222 Hospice
Y92.223 Health centre
Y92.228 Other specified health service area
Y92.229 Unspecified health service area

Rationale: Broad category. Approximately 70,000 to 75,000 cases each year. Important to know in which settings most injuries are occurring.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 5

Category: Y92.30 Sporting grounds (outdoor)

Proposed changes: Modify and add inclusions

- Change 'Baseball field' to 'Baseball/softball field'
- Change 'Football field' to 'Football field (Australian rules, rugby, soccer, touch)'
- Change 'Outdoor basketball' court to 'Outdoor basketball/netball-court'
- Add 'Outdoor volleyball-court'

Rationale: From previous submission.

Category: Y92.31 Sporting hall (indoor)

Proposed changes: Modify and add inclusions

- Change 'Indoor basketball' court to 'Indoor basketball/netball-court'
- Add 'Indoor cricket-court'
- Add 'Indoor volleyball-court'

Rationale: From previous submission.

Category: Y92.80 Area of still water

Proposed change: Add inclusion

- Reservoir

Rationale: Provides clarification as to where injuries occurring in this setting should be coded.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: Y92.84 Forest

Proposed change: Add inclusions

- Bush
- National park
- Plantation
- Scrub

Rationale: Provides clarification as to where injuries occurring in these settings should be coded.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Category: Y92.86 Other specified countryside

Proposed change: Add inclusions:

- Gorge
- Wilderness
- Outback
- Sand dunes (not adjacent to beach)

Rationale: Provides clarification as to where injuries occurring in these settings should be coded.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 3

Category: Y92.88 Playground

Proposed change: New category
Note: Change existing code Y92.88 *Other specified place of occurrence* to Y92.89
Not likely to change a code that has been used in previous edition.

Rationale: Currently, there is no method of recording the location of injuries other than falls that occur in this setting.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 2

Note: Coding this new category to Y92.89 may be a bit untidy. Only other option is to look at some restructuring which looks at the inclusion of (Y93)

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5 Appendices

Appendix A1: General observations relating to patterns of use of existing coding categories

Injury and poisoning

Diagnoses

Of the 103 diagnoses which fulfilled the criteria as outlined in section 2.1.1, 17 related to injuries to the knee and lower leg, 15 to head injuries and 11 to both injuries to wrist and hand and complications of surgical and medical care, not elsewhere classified. Of these diagnoses, head injuries accounted for over 9.8% of all occurrences of injury, complications of surgical and medical care for almost 9.7%, injuries to knee and lower leg for almost 7.2% and injuries to wrist and hand for 6.8%. Of the 79 codes relating to injuries of various body parts (i.e. S00–S99), 38 involved some form of fracture whilst 15 involved some form of open wound. Of the remaining 24 codes (i.e. T00–T89), 11, as mentioned previously, involved complications of surgical and medical care, whilst five involved poisoning by drugs, medicaments and biological substances.

Deaths

Of the 98 diagnoses that fulfilled the criteria as outlined in section 2.1.1, 29 related to head injuries, 14 related to complications of surgical and medical care, not elsewhere classified, and 12 to both injuries of the thorax and to injuries to the hip and thigh. Of these diagnoses, head injuries accounted for over 25% of all occurrences of death, injuries to hip and thigh for almost 12.5% and complications of surgical and medical care for almost 8.7%. Of the 74 codes relating to injuries of various body parts (i.e. S00–S99), 36 involved some form of fracture whilst 10 involved some form of open wound. Of the remaining 24 codes (i.e. T00–T89), 14, as mentioned previously, involved complications of surgical and medical care.

External causes

Occurrences

Of the 99 external cause codes which fulfilled the criteria as outlined in section 2.1.1, 17 related to complications of drugs, medicaments, and biological substances causing adverse effects in therapeutic use, 16 to transport accidents, 14 to surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure, 13 to falls and 12 to exposure to inanimate mechanical forces. Of these diagnoses, surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure accounted for 26.7% of all cases, falls for 21.4% and exposure to inanimate forces for almost 8.4%.

Deaths

Of the 63 external cause codes which fulfilled the criteria as outlined in section 2.1.1, 16 related to complications of drugs, medicaments, and biological substances causing adverse effects in therapeutic use, 14 to surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure, 8 to falls and 6 to transport accidents. Of these diagnoses, surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure accounted for 37.6% of all deaths, falls for 28.5% and complications of drugs, medicaments, and biological substances causing adverse effects in therapeutic use for 10.9%.

Appendix A2: General observations relating to comparisons with the ICD-based Injury Severity Score (ICISS)

Table A2.1 lists the injury and poisoning diagnosis codes for the 50 ICD-10-AM categories with the highest number of separations that ended in death. The table is based on Australian hospital separations in 1999–2000 in which the Principal Diagnosis was in the range S00–T89.

Table A2.1: The 50 ICD-10-AM categories with the highest number of separations that ended in death, Australia, 1999–2000

Code	Description	No. deaths	Comments
S01.0	Open wound of scalp	239	Severity of wound can be partially determined by use of additional code T89.0 to indicate open wound with complication of foreign body, infection and delayed healing /treatment. Additional codes can be used to indicate if the wound is associated with a fracture (e.g. S01.81) or a dislocation (e.g. S01.82). Currently, there is no way of determining the type of wound (i.e. laceration, puncture or bite) or the extent of the wound in terms of area and depth.
S01.80	Open wound of other parts of head	161	
S01.83	Open wound (of any part of head) communicating with an intracranial fracture	129	
S02.0	Fracture of vault of skull	174	Severity of wound can be partially determined by use of additional codes S06.02–S06.05 to identify any associated loss of consciousness. Also, the additional code S01.81 can be used to identify an open fracture, whilst the code S01.83 can be used to indicate a fracture associated with an intracranial injury. Currently, there is no way of determining the type of fracture (e.g. linear, hairline, depressed).
S02.1	Fracture of base of skull	433	
S02.4	Fracture of malar and maxillary bones	103	
S06.01	Loss of consciousness of unspecified duration	219	
S06.02	Loss of consciousness of brief duration (less than 30 mins)	87	
S06.1	Traumatic cerebral oedema	308	Severity of injury can be partially determined by use of additional codes S06.02–S06.05 to identify any associated loss of consciousness. The additional code S01.83 can be used to identify an open intracranial injury.
S06.23	Multiple intracerebral and cerebellar haematomas	232	
S06.5	Traumatic subdural haemorrhage	678	
S06.6	Traumatic subarachnoid haemorrhage	444	
S06.8	Other intracranial injuries	118	Could be further subdivided by type of injury e.g. haemorrhage, haematoma or contusion.
S09.9	Unspecified injury of head	87	Currently, there is no way of determining the location of the injury e.g. ear, nose, face

Continued

Table A2.1 (continued): The 50 ICD-10-AM categories with the highest number separations that ended in death, Australia, 1999–2000

Code	Description	No. deaths	Comments
S12.1	Fracture of second cervical vertebra	95	Additional codes S13.- and S14.- can be used to identify any associated dislocation and any cervical spinal cord injury respectively. Also, additional code S11.81 can be used to identify an open fracture. Currently, there is no method of identifying the type of fracture e.g. displaced vs non-displaced.
S22.32	Fracture of one rib, other than first rib	107	Additional code S21.81 can be used to identify an open fracture. Currently, there is no method of identifying if multiple fractures are unilateral or bilateral.
S22.40	Multiple rib fractures, unspecified	163	
S22.44	Multiple rib fractures, involving four or more ribs	128	
S22.5	Flail chest	83	
S27.0	Traumatic pneumothorax	128	Additional code S21.83 can be used to identify an open intrathoracic wound.
S27.1	Traumatic haemothorax	106	
S27.2	Traumatic haemopneumothorax	138	
S27.31	Contusion and haematoma of lung	203	Currently, there is no method of determining the degree of injury. Also, there is no method of identifying if injuries are unilateral or bilateral.
S32.4	Fracture of acetabulum	93	Additional code S33.- can be used to identify an associated dislocation code whilst S34.- can be used to identify any lumbar cord spinal injury. Additional code S31.81 can be used to identify an open fracture. Currently, there is no method for identifying the type of fracture eg displaced vs nondisplaced and location e.g. anterior wall, posterior wall, anterior column, posterior column.
S32.5	Fracture of pubis	349	Additional code S33.- can be used to identify an associated dislocation code whilst S34.- can be used to identify any lumbar cord spinal injury. Additional code S31.81 can be used to identify an open fracture. Currently, there is no method for identifying whether the fracture is unilateral or bilateral.
S42.00	Fracture of clavicle, part unspecified	88	Additional code S41.81 can be used to identify an open fracture. Currently, there is no method for identifying the location of the fracture, the type of fracture e.g. displaced vs non-displaced or whether the fracture is unilateral or bilateral.
S42.22	Fracture of surgical neck of humerus	138	Additional code S41.81 can be used to identify an open fracture. Currently, there is no method for identifying the type of fracture (e.g. displaced vs non-displaced, 2-part or 3-part) or whether the fracture is unilateral or bilateral.
S42.3	Fracture of shaft of humerus	100	Additional code S41.81 can be used to identify an open fracture. Currently, there is no method for identifying the type of fracture (e.g. displaced vs non-displaced, greenstick, transverse, oblique, spiral, comminuted) or whether the fracture is unilateral or bilateral.

Continued

Table A2.1 (continued): The 50 ICD-10-AM categories with the highest number of separations that ended in death, Australia, 1999–2000

Code	Description	No. deaths	Comments
S72.00	Fracture of femur, part unspecified	327	Additional code S71.81 can be used to identify an open fracture. Currently, there is no method for identifying the type of fracture e.g. displaced vs non-displaced, oblique, spiral comminuted, segmental, torus, etc.
S72.03	Fracture of subcapital section of femur	615	
S72.04	Fracture of midcervical section of femur	76	
S72.10	Fracture of trochanteric section of femur, unspecified	287	
S72.11	Fracture of intertrochanteric section of femur	569	
S72.2	Subtrochanteric fracture	90	
S72.3	Fracture of shaft of femur	130	
S81.81	Open wound (of any part of lower leg) communicating with a fracture	89	Additive code only.
S82.21	Fracture of shaft of tibia with fracture of fibula (any part)	78	Additional code S81.81 can be used to identify an open fracture. currently, there is no method for identifying the type of fracture e.g. displaced vs non-displaced, oblique, spiral comminuted, segmental, torus, etc.
T40.1	Poisoning by heroin	83	
T42.4	Poisoning by benzodiazepines	73	Currently, there is no method for identifying the type of benzodiazepine e.g. diazepam, temazepam, oxazepam.
T71	Asphyxiation	92	Chapter XX codes (W75–W84 Other mechanical threats to breathing) provide extra information.
T75.1	Drowning and nonfatal submersion	85	Chapter XX codes (W65–W74 Accidental drowning and submersion) provide extra information.
T81.0	Haemorrhage and haematoma complicating a procedure, nec	257	
T81.3	Disruption of operation wound, nec	70	Dehiscence, rupture?
T81.4	Infection following a procedure, nec	385	Already subdivided in third edition—wound infection, sepsis
T81.8	Other complications of procedures, nec	123	Currently, there is no method for identifying the nature of complication e.g. complication of inhalation therapy, emphysema resulting from a procedure, persistent postoperative fistula, cardiac failure following a non-cardiac procedure.
T82.7	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts.	148	Currently, there is no method for identifying the nature of complication e.g. mechanical breakdown, displacement, leakage, obstruction, perforation, protrusion, other mechanical breakdown.

Continued

Table A2.1 (continued): The 50 ICD-10-AM categories with the highest number of separations that ended in death, Australia, 1999–2000

Code	Description	No. deaths	Comments
T82.8	Other complication of cardiac and vascular prosthetic devices implants and grafts.	118	Currently, there is no method for identifying the nature of complication e.g. embolism, thrombosis, haemorrhage, stenosis.
T84.0	Mechanical complication of internal joint prothesis	75	Currently, there is no method for identifying the nature of complication e.g. mechanical breakdown, displacement, leakage, obstruction, perforation, protrusion, other mechanical breakdown.
T84.5	Infection and inflammatory reaction due to internal joint prothesis	78	Currently, there is no method for identifying the location of prothesis e.g. hip, knee, other.

Appendix A3: Summary of potential changes as indicated by other injury surveillance personnel

Activity codes

U50–U72 While engaged in sports or leisure

- A change of description for U63.03 from 'Steeplechase' to 'Cross-country eventing'. Steeplechase, in an equestrian context, is more commonly termed 'Cross-country' and is one of the three individual events that make up the combined discipline of 'Eventing'.
- Change *U63.3 Horse racing* to *U63.3 Horse racing events* and include subcategories for horse racing over flats or jumps.
- Delete *U63.6 Trotting and harness* and replace with *U63.32 Horse racing (harness)*.
- Add *training days*, *vaulting competitions*, *show horse competitions, driving and carriage competitions* and *western and reining competitions* as inclusions under *U63.08 Other specified equestrian event*.
- Kite-surfing to be included under *U54.7 Wind sailing*.
- New category created *U66.5 Land-sailing.*

U73 While engaged in other activity

- New category created *U73.3 Criminal activity*.

External cause codes

V01–V09 Pedestrians injured in transport accident

- **Mobility scooters (gophers)**—In the current revision of ICD-10-AM, there is no distinct category for including accidents involving mobility scooters. It is recommended that these devices be included as a pedestrian conveyance within categories V00–V09 where V00 is a new category entitled 'Pedestrian conveyance accident'.

V20–V29 Motorcycle rider injured in transport accident

- **Moped**—Prior to the third revision of ICD-10-CM, coders were unable to distinguish between different types of motorcycles. The third revision partly overcame this problem by the introduction of a fifth-character subdivision within the categories V20–V29. One of these fifth-character subdivisions was: Motor-scooter, moped or motorised bicycle. Hence, it is advisable to analyse third edition data before recommending any further changes in this area.

W00–W19 Falls

- New category created *W02.6 Fall involving non-motorised scooters*.
- Subcategories added to *W28 Contact with powered lawnmower* to distinguish between ride-on lawnmowers and other powered lawnmowers.
- Subcategories added to *W13 Fall from, out of or through building or structure* to allow more specific recording of which part of building or structure was involved.

W20–W49 Exposure to inanimate mechanical forces.

- New category created *W30.3 Contact with tractor*. The National Coroners Information System (NCIS) report (Driscoll, Henley 2003) found that two-thirds of fatal accidents relating to agricultural machinery involved tractors. The current revision of ICD-10-AM includes categories relating to equipment towed or powered by tractors (W30.2) but has no distinct code for tractors.

Place of occurrence codes

- New category created *Y92.15 Residential care facilities for people with intellectual and physical disabilities*.
- New category created *Y92.23 While in police custody*.
- Amendments to *Y2.30 Sporting grounds (outdoor)* to allow for inclusions of softball field, netball court and volleyball court.
- Amendments to *Y2.31 Sporting grounds (indoor)* to allow for inclusions of netball court , cricket court and volleyball court.
- Amendments to *Y2.82 Large area of water* to allow for inclusion of salt lake (with or without water).
- Amendments to *Y2.84 Forest* to allow for inclusions of bush, national park, plantation and scrub.
- Amendments to *Y2.86 Other specified countryside t*o allow for inclusions of gorge, wilderness, outback and sand dunes (not adjacent to beach).

Appendix A4: General observations relating to comparisons with the ICD-10-CM

We examined Chapters XIX and XX of the pre-release May 2002 version of ICD-10-CM that was available for downloading from www.cdc.gov.nchs/about/otheract/icd9/abticd10.htm as at March 2004. Generally, ICD-10-CM is more detailed than ICD-10-AM and frequently provides one or two extra levels of detail. An example of this is the code 'S72.3 Fracture of shaft of femur' which appears in ICD-10-AM as a single code without any subcategories. In ICD-10-CM this code incorporates two extra levels of code as follows:

S72.3 Fracture of shaft of femur

S72.30 Unspecified fracture of shaft of femur

S72.301 Unspecified fracture of shaft of right femur
S72.302 Unspecified fracture of shaft of left femur
S72.309 Unspecified fracture of shaft of unspecified femur

S72.32 Transverse fracture of shaft of femur

S72.321 Displaced transverse fracture of shaft of right femur
S72.322 Displaced transverse fracture of shaft of left femur
S72.323 Displaced transverse fracture of shaft of unspecified femur
S72.324 Nondisplaced transverse fracture of shaft of right femur
S72.325 Nondisplaced transverse fracture of shaft of left femur
S72.326 Nondisplaced transverse fracture of shaft of unspecified femur

S72.33 Oblique fracture of shaft of femur

S72.331 Displaced oblique fracture of shaft of right femur
S72.332 Displaced oblique fracture of shaft of left femur
S72.333 Displaced oblique fracture of shaft of unspecified femur
S72.334 Nondisplaced oblique fracture of shaft of right femur
S72.335 Nondisplaced oblique fracture of shaft of left femur
S72.336 Nondisplaced oblique fracture of shaft of unspecified femur

S72.34 Spiral fracture of shaft of femur

S72.341 Displaced spiral fracture of shaft of right femur
S72.342 Displaced spiral fracture of shaft of left femur
S72.343 Displaced spiral fracture of shaft of unspecified femur

S72.344 Nondisplaced spiral fracture of shaft of right femur

S72.345 Nondisplaced spiral fracture of shaft of left femur

S72.346 Nondisplaced spiral fracture of shaft of unspecified femur

S72.35 Comminuted fracture of shaft of femur

S72.351 Displaced comminuted fracture of shaft of right femur

S72.352 Displaced comminuted fracture of shaft of left femur

S72.353 Displaced comminuted fracture of shaft of unspecified femur

S72.354 Nondisplaced comminuted fracture of shaft of right femur

S72.355 Nondisplaced comminuted fracture of shaft of left femur

S72.356 Nondisplaced comminuted fracture of shaft of unspecified femur

S72.36 Segmental fracture of shaft of femur

S72.361 Displaced segmental fracture of shaft of right femur

S72.362 Displaced segmental fracture of shaft of left femur

S72.363 Displaced segmental fracture of shaft of unspecified femur

S72.364 Nondisplaced segmental fracture of shaft of right femur

S72.365 Nondisplaced segmental fracture of shaft of left femur

S72.366 Nondisplaced segmental fracture of shaft of unspecified femur

S72.39 Other fracture of shaft of femur

S72.391 Other fracture of shaft of right femur

S72.392 Other fracture of shaft of left femur

S72.399 Other fracture of shaft of unspecified femur

As can be seen from this example the ICD-10-CM coding provides extra information in terms of:

- type of fracture (e.g. transverse, oblique, spiral, comminuted, segmental, other or unspecified).
- whether the fracture is displaced or not displaced
- laterality of the fracture i.e. left femur, right femur or unspecified femur

These extra levels of detail not only apply to injury and poisoning codes, but also to external cause codes. For example, in ICD-10-AM, the code 'W27 Contact with nonpowered hand tool' appears as a single code without any subcategories. In ICD-10-CM, this code incorporates an extra level of coding as follows:

W27 Contact with nonpowered hand tool

W27.0 Contact with workbench tool

Contact with auger

Contact with axe

Contact with chisel

Contact with handsaw

Contact with screwdriver

W27.1 Contact with garden tool

Contact with hoe

Contact with nonpowered lawn mower

Contact with pitchfork

Contact with rake

W27.2 Contact with scissors

W27.3 Contact with hypodermic needle

Contact with contaminated hypodermic needle

Hypodermic needle stick

W27.4 Contact with needle (sewing)

Excludes: hypodermic needle (W27.3)

W27.5 Contact with kitchen utensil

Contact with fork

Contact with ice-pick

Contact with can-opener NOS

W27.6 Contact with paper-cutter

W27.8 Contact with other nonpowered hand tool

Contact with nonpowered sewing machine

Contact with shovel

The ICD-10-CM also provides a seventh digit extension code that indicates the phase at which the injury took place i.e. initial encounter, subsequent encounter or sequela.

Another major difference between ICD-10-CM and ICD-10-AM is the method of coding 'intent'. In ICD-10-AM, categories 'T36–50 Poisoning by drugs, medicaments, and biological substances' and categories 'T51–T65 Toxic effects of substances chiefly nonmedicinal as to source' do not specify intent. Instead 'intent' is specified by the use of separate codes from the 'External Causes' chapter. In contrast, ICD-10-CM includes intent within the T36–T65 categories. For example, for a case relating to poisoning due to penicillins, the categories are coded as follows:

T36.0 Poisoning by and adverse effect of penicillins

T36.0x Poisoning by and adverse effect of penicillins

T36.0x1 Poisoning by penicillins, accidental (unintentional)
Poisoning by penicillins NOS

T36.0x2 Poisoning by penicillins, intentional self-harm

T36.0x3 Poisoning by penicillins, assault

T36.0x4 Poisoning by penicillins, undetermined

T36.0x5 Adverse effect of penicillins

Another important point of interest is the categorisation of codes relating to 'Complications of surgical and medical care, not elsewhere classified' (T80–T88). ICD-10-CM, as indicated earlier, provides extra levels of detail and in this instance provides extra information related to the type of complication, the type of device which is affected, and the location of the device than does ICD-10-AM. The complications relating to cardiac and vascular prosthetic devices, implants and grafts (T82) are listed as mechanical breakdown, displacement, leakage, malposition, obstruction, perforation, protrusion and other. Complications relating specifically to the recipient of these devices are listed as embolism, fibrosis, haemorrhage, pain, stenosis, thrombosis and other. These identical complications are also listed for other types of prosthetic devices which include genitourinary prosthetic devices, implants and grafts (T83), internal orthopaedic prosthetic devices, implants and grafts (T84) and other internal prosthetic devices, implants and grafts (T85).

Appendix A5: General observations relating to comparisons with the ICECI

We examined Version 1.2 of the ICECI, which is available from www.iceci.org. The ICECI's multi-axial coding system allows for greater flexibility and diversity than the ICD-10-AM, particularly in the areas of selecting an object or substance involved in an injury, the place of occurrence where the injury took place, the activity in which the injured person was involved at the time of the injury and the intent of the injury (i.e. accident, assault, etc).

Object/Substance producing injury

For example, in terms of object or substance, ICD-10-AM has a single code 'W69 Drowning and submersion while in natural water'. Since there are no subcategories, there is no way of determining the nature of this natural water. In contrast, the ICECI enables the coder to select firstly from the 'Mechanism of injury module' (i.e. 5.2.2 Drowning/near drowning while in a body of water) and secondly from the 'Object/Substance producing injury' module. This module has the following codes relating to a body of water:

15.02 Body of water

15.02.01 Man-made well, dug well for underground water

15.02.05 Water reservoir

15.02.15 Puddle

15.02.20 Dam, lake

15.02.25 River, stream

15.02.30 Swamp, marsh

15.02.35 Beach, seashore

Includes:

• rocky seashore

15.02.40 Open sea

15.02.98 Other specified body of water

15.02.99 Unspecified body of water

Place of occurrence

When looking at place of occurrence, if the injury occurred at home the ICD-10-AM (3rd edition) only has two codes to select from:

U92.00 Driveway to home

U92.09 Other and unspecified place in home

In contrast, in ICECI, place of occurrence can be chosen via the following method:

Initially from the 'Place of occurrence' module the coder can select 'Home'. Next from the 'Type of home' module the coder can select from detached house, terrace house/row house, apartment/flat, farm house, residential caravan/mobile home/houseboat/motorhome, hut, boarding house/hotel, other specified type of home and unspecified type of home. Finally from the 'Part of building or grounds' module, the coder can select from bathroom/toilet, kitchen, living room, bedroom, playroom, balcony, stairs, corridor, garden, garage, driveway, swimming pool, other and unspecified part of building and grounds.

Activity when injured

Both the ICD-10-AM and the ICECI provide a similar range of activity codes to select from in relation to sports and leisure activities. However, the ICECI has a more extensive range of codes to select from in relation to other activities. For example if the injury occurred while working for an income, the ICD-10-AM has a limited selection of around 10 different types of economic activity. In contrast, the ICECI has a selection of almost 20 different types of economic activity. Additionally, the ICECI allows selection from a list comprising 10 different types of occupation as well as enabling to the coder to indicate whether the injury occurred whilst travelling to or from work or occurred whilst travelling in the course of paid work.

Intent

The ICECI includes a separate module related to intent. This allows the coder to select from a full range of codes regardless of the intent. In contrast, the ICD-10-AM has a much more limited range of codes to select when intent is not accidental.

Appendix A6: Feedback from other injury surveillance personnel

Proposed amendments received jointly from the Victorian Injury Surveillance and Applied Research (VISAR) and Monash University Accident Research Centre (MUARC)

Fourth edition	Proposed amendment for fifth edition
W06 Fall involving bed	**W06 Fall involving bed** W06.1 conventional bed W06.2 bunk bed W06.3 cot W06.4 bassinet W06.8 other specified bed W06.9 unspecified bed
W07 Fall involving chair	**W07 Fall involving chair** W07.1 chair W07.2 high chair W07.8 other specified chair W07.9 unspecified chair
W08 Fall involving other furniture	**W08 Fall involving other furniture** W08.1 nursery furniture (excluding cots W06.3 and highchairs W07.2) W08.8 other specified furniture W08.9 unspecified furniture

Fourth edition	Proposed amendment for fifth edition
W25 Contact with sharp glass	**W25 Contact with sharp glass** W25.1 architectural (fixed) glass W25.10 windows and louvers (excluding glass in motor vehicle—W25.17) W25.11 doors and door panels W25.12 shower and bath doors, screens & partitions W25.13 internal partitions W25.14 skylights and roof panels W25.15 fixed mirrored glass W25.16 glass or mirrored glass in furniture W25.17 motor vehicle (windscreen and windows) W25.18 other specified architectural glass W25.19 unspecified architectural glass W25.2 other glass W25.20 drinking glasses W25.21 glass containers (including bottles and jars) W25.22 decorative glass items (including vases, ornaments) W25.23 mirrors (not fixed W25.15) W25.28 other specified glass W25.29 unspecified other glass
W55 Bitten or struck by other mammals **W55.0 Bitten or struck by horse** **W55.8 Bitten or struck by other mammal**	**W55 Bitten or struck by other mammals** W55.0 Bitten of struck by horse W55.1 Bitten or struck by cow W55.2 Bitten or struck by sheep W55.8 Bitten or struck by other mammal

Fourth edition	Proposed amendment for fifth edition
W69 Drowning and submersion while in natural water	**W69 Drowning and submersion while in natural water** W69.1 lake W69.2 open sea W69.3 river W69.4 stream W69.8 other specified natural water W69.9 unspecified natural water
W73 Other specified drowning and submersion	**W73 Other specified drowning and submersion** W73.1 quenching tank W73.2 reservoir W73.3 dam W73.4 bucket W73.8 other specified
W76 Other accidental hanging and strangulation	**W76 Other accidental hanging and strangulation** W76.1 clothing W76.2 toys W76.3 blind and curtain cords W76.8 other specified accidental hanging and strangulation W76.9 unspecified accidental hanging and strangulation
W80 Inhalation and ingestion of other objects causing obstruction of respiratory tract	**W80 Inhalation and ingestion of other objects causing obstruction of respiratory tract** W80.1 coins W80.2 toys and toy parts W80.3 batteries W80.8 other specified object W80.9 unspecified object

Fourth edition	Proposed amendment for fifth edition
W86 Exposure to other specified electric current	**W86 Exposure to other specified electric current** Fourth character already suggested Fifth character *1 contact with live wire including connectors, plugs, sockets, switches and cords *2 contact with appliance *3 contact with machinery
X80 Intentional self-harm by hanging, strangulation and suffocation	**X80 Intentional self-harm by hanging, strangulation and suffocation** X80.1 hanging X80.2 strangulation X80.3 suffocation
X81 Intentional self-harm by jumping or lying before moving object	**X81 Intentional self-harm by jumping or lying before moving object** X81.1 train X81.2 motor vehicle X81.8 other moving object X81.9 unspecified moving object
X67.8 Intentional self-poisoning by and exposure to other specified gases and vapours *Includes*: **carbon monoxide** **lacrimogenic gas** **nitrogen oxides** **sulphur dioxide**	**X67.8 Intentional self-poisoning by and exposure to other specified gases and vapours** *Includes*: carbon monoxide other than motor vehicle exhaust gas lacrimogenic gas nitrogen oxides sulphur oxide

Additional comment:

In the process of writing a recent report it became apparent that children were receiving contact burns caused by ashes, embers and coals, from open fires, campfires and barbeques. At the moment it does not seem to be clear where these contact burns should be coded.

Proposed amendments received from the NSW Injury Risk Management Research Centre

Introduction of a code which specified whether or not a seat belt or child restraint was used at the time of a transport related injury.

Introduction of a new code (somewhere between W06–W09) to indicate a fall involving nursery products (e.g. trundle beds, cots, small beds, baby walker, changing tables, high chairs, etc).

Proposed amendments received from the Centre for Accident Research and Road Safety (CARRS-Q), Queensland University of Technology

The introduction of a character to section V20–V29 of a character to classify motorcycles by engine size i.e. <50cc, 50cc to <250cc and 250cc or greater

The introduction of a code or an inclusion statement to clarify where a previously un-motorised scooter with a small battery-powered engine should be coded.

Proposed amendments received from other injury surveillance organisations

The introduction of a list of likely sub-categories (e.g. specific chemicals) to categories X49 *Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances* and X69 *Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances.*

General comments

There was general agreement among researchers who provided feedback, that most of the changes were desirable, although the feasibility of a number of these changes was questioned. Some doubts existed about the amount and reliability of documentation on clinical charts and the clinical coders' ability to interpret such. Experience indicates that the inclusion of an increasing number of unique codes for various categories often results in only a small proportion of them being used. Also, consideration must be given to the risk that changes could adversely affect monitoring of important trends over time.

Appendix A7: Suggested layout for codes S27, S36 and S37

S27	Injury of other and unspecified intrathoracic organs

Use additional open wound code S21.83 with category S27 to identify an open intrathoracic wound [open wound communicating with the thoracic cavity].

See Table A9.1 for sixth character sub-categories on page 93. *Valid digits are in [brackets] under each code.*

S27.3	Other injuries of lung

⊗S27.31 Contusion and haematoma of lung

[0,1,3,5,7,9]

⊗S27.32 Laceration of lung

[2,4,6,9]

⊗S27.38 Other and unspecified injuries of lung

[8,9]

⊗S27.4 Injury of bronchus

[6,9]

⊗S27.5 Injury of thoracic trachea

⊗S27.6 Injury of pleura

⊗S27.7 Multiple injuries of intrathoracic organs

S36 Injury of intra-abdominal organs

Use additional open wound code S31.83 with category S36 to identify an open intra-abdominal wound [open wound communicating with the abdominal cavity].

See TableA9.1 for sixth character sub-categories on page 93–96. Valid digits are in [brackets] under each code.

S36.0 Injury of spleen

⊗S36.00 Injury of spleen, unspecified

[9]

⊗S36.01 Haematoma of spleen

[0,2,4,9]

⊗S36.02 Capsule tears of spleen, without major disruption of parenchyma

[1,3,9]

⊗S36.03 Laceration of spleen extending into parenchyma

[4–6,9]

⊗S36.04 Massive parenchymal disruption of spleen

Rupture of spleen

[7–9]

⊗S36.08 Other injury of spleen

Penetrating injury of the spleen

[9]

S36.1 Injury of liver or gallbladder

⊗S36.10 Injury of liver, unspecified

[9]

⊗S36.11 Haematoma of liver

[0,2,4,9]

⊗S36.12 Laceration of liver, unspecified

[9]

⊗S36.13 Minor laceration of liver

Laceration of capsule only, or without Significant involvement of hepatic parenchyma [i.e. less than 1 cm deep]

[1]

⊗S36.14 Moderate laceration of liver

Laceration involving parenchyma but without major disruption of parenchyma [i.e. less than 10 long and less than 3cm deep]

[3]

⊗S36.15 Major laceration of liver

Laceration involving parenchyma but without major disruption of parenchyma [i.e. less than 10 cm long and less than 3cm deep]

[6,7]

⊗S36.16 Other injury of liver

[9]

⊗S36.17 Injury of gallbladder

⊗S36.18 Injury of bile duct

S36.2	Injury of pancreas

⊗S36.20 Injury of pancreas, part unspecified

[9]

⊗S36.21 Injury of head of pancreas

[0–4,6,7,9]

⊗S36.22 Injury of body of pancreas

[0–4,6,9]

⊗S36.23 Injury of tail of pancreas

[0–4,6,9]

⊗S36.29 Injury of other and multiple parts of pancreas

[9]

⊗S36.3 Injury of stomach

[0–9]

S36.4	Injury of small intestine

⊗S36.40 Injury of small intestine, part unspecified

[9]

⊗S36.41 Injury of duodenum

[0–4,6-9]

⊗S36.42 Injury of small intestine

[0–2,4,5,7–9]

[0–4,6–9]

⊗S36.49 Injury of other and multiple parts of small intestine

[9]

S36.5	Injury of colon

⊗S36.50 Injury of colon, part unspecified

[9]

⊗S36.51 Injury of ascending [right] colon

[0–2,4,5,7,9]

⊗S36.52 Injury of transverse colon

[0–2,4,5,7,9]

⊗S36.53 Injury of descending [left] colon

[0–2,4,5,7,9]

⊗S36.54 Injury of sigmoid colon

[0–2,4,5,7,9]

⊗S36.59 Injury of other and multiple parts of colon

Injury of appendix

Injury of caecum

[9]

⊗S36.6 Injury of rectum

[0–2,4,5,8,9]

⊗S36.7 Injury of multiple intra-abdominal organs

[9]

S37 Injury of urinary and pelvic organs

Use additional open wound code S31.83 with category S37 to identify an open intra-abdominal wound [open wound communicating with the abdominal cavity].

See Table A9.1 for sixth character sub-categories on page 97–98. Valid digits are in [brackets] under each code.

S37.0 Injury of kidney

⊗S37.00 Injury of kidney, unspecified

[9]

⊗S37.01 Contusion and haematoma of kidney

[0-2,9]

⊗S37.02 Laceration of kidney

Involving the capsule and pelvis [collecting system]

Rupture of capsule

[3-5,9]

⊗S37.03 Complete disruption of kidney parenchyma

Rupture of kidney

[6-9]

⊗S37.1 Injury of ureter

[0,2,4,5,7,9]

S37.2 Injury of bladder

⊗S37.20 Injury of bladder, unspecified

[9]

⊗S37.21 Contusion of bladder

[0,9]

⊗S37.22 Rupture of bladder

Extra-peritoneal

Intra-peritoneal

[1,2,4,5,7,9]

⊗S37.28 Other Injury of bladder

Laceration of bladder

[9]

S37.3	Injury of urethra

⊗S37.30 Injury of urethra, part unspecified

[9]

⊗S37.31 Injury of membranous urethra

[0,2,4,5,7,9]

⊗S37.32 Injury of penile urethra

[0,2,4,5,7,9]

⊗S37.33 Injury of prostatic urethra

[0,2,4,5,7,9]

⊗S37.34 Injury of other part of urethra

[0,2,4,5,7,9]

⊗S37.4 Injury of ovary

⊗S37.5 Injury of fallopian tube

⊗S37.6 Injury of uterus

⊗S37.7 Injury of multiple pelvic organs

Appendix A8: Organ Injury Scales

Table A8.1: Lung injury scale

Grade*	Type of injury	Description of Injury	ICD-10-AM	AIS-90
I	Contusion	Unilateral, <1 lobe	S27.31	3
II	Contusion	Unilateral, single lobe	S27.31	3
	Laceration	Simple pneumothorax	S27.0 / S27.2	3
III	Contusion	Unilateral, > 1 lobe	S27.31	3
	Laceration	Persistent (> 72 hrs) air leak from distal airway	S27.0 / S27.2	3-4
	Haematoma	Nonexpanding intraparenchymal	S27.31 / S27.38	
IV	Laceration	Major (segmental or lobar) air leak	S27.4 / S27.31	4-5
	Haematoma	Expanding intraparenchymal		
	Vascular	Primary branch intrapulmonary vessel disruption	S25.4	3-5
V	Vascular	Hilar vessel disruption	S25.4	4
VI	Vascular	Total uncontained transection of pulmonary hilum	S25.4	4

*Advance one grade for bilateral injuries up to grade III.

Haemothorax is scored under thoracic vascular injury scale.

From Moore et al [3]; with permission.

Table A8.2 Spleen injury scale (1994 revision)

Grade*	Type of injury	Description of injury	ICD-10-AM	AIS-90
I	HaematomaLac	Subcapsular, <10% surface area	S36.01	2
	eration	Capsular tear, <1cm parenchymal depth	S36.02	2
II	Haematoma	Subcapsular, 10%-50% surface area; intraparenchymal, <5 cm in diameter	S36.01	2
	Laceration	Capsular tear, 1–3cm parenchymal depth that does not involve a trabecular vessel	S36.02	2
III	Haematoma	Subcapsular, >50% surface area or expanding; ruptured subcapsular or parenchymal Haematoma; intraparenchymal Haematoma $\geq$ 5 cm or expanding	S36.03	3
	Laceration	>3 cm parenchymal depth or involving trabecular vessels	S36.03	3
	Laceration			
IV		Laceration involving segmental or hilar vessels producing major devascularisation (>25% of spleen)	S36.03	4
	Laceration			
V	Vascular	Completely shattered spleen	S36.04	5
		Hilar vascular injury with Devascularised spleen		5

*Advance one grade for multiple injuries up to grade III.

From Moore et al. [4]; with permission.

Table A8.3: Liver injury scale (1994 revision)

Grade*	Type of injury	Description of injury	ICD-9	AIS-90
I	Haematoma	Subcapsular, <10% surface area	864.01 / 864.11	2
	Laceration	Capsular tear, <1cm parenchymal depth	864.02 / 864.12	2
II	Haematoma	Subcapsular, 10% to 50% surface area: intraparenchymal <10 cm in diameter	864.01 / 864.11	2
	Laceration	Capsular tear 1–3 parenchymal depth, <10 cm in length	864.03 / 864.13	2
			864.04 / 864.14	3
III	Haematoma	Subcapsular, >50% surface area of ruptured subcapsular or parenchymal Haematoma; intraparenchymal Haematoma > 10 cm or expanding		3
	Laceration	3 cm parenchymal depth	864.04 / 864.14	4
IV	Laceration	Parenchymal disruption involving 25% to 75% hepatic lobe or 1–3 Couinaud's segments within a single lobe.	864.04 / 864.14	5
V	Laceration	Parenchymal disruption involving >75% of hepatic lobe or >3 Couinaud's segments within a single lobe		5
	Vascular	Juxtahepatic venous injuries; i.e., retrohepatic vena cava/central major hepatic veins	864.04 / 864.14	
VI	Vascular	Hepatic avulsion		5

*Advance one grade for multiple injuries up to grade III

From Moore et al. [4]; with permission

Table A8.4 : Pancreas injury scale

Grade*	Type of injury	Description of injury	ICD-10-AM	AIS-90
I	Haematoma	Minor contusion without duct injury	S36.20–3,9	2
	Laceration	Superficial laceration without duct injury		2
II	Haematoma	Major contusion without duct injury or tissue loss	S36.20–3,9	2
	Laceration	Major laceration without duct injury or tissue loss		3
III	Laceration	Distal transection or parenchymal injury with duct injury	S36.20–3,9	3
IV	Laceration	Proximal transection or parenchymal injury involving ampulla	S36.20–3,9	4
V	Laceration	Massive disruption of pancreatic head	S36.20–3,9	5

*Advance one grade for multiple injuries up to grade III. *863.51,863.91—head; 863.99,862.92—body; 863.83, 863.93—tail.

*Proximal pancreas is to the patients' right of the superior mesenteric vein.

From Moore et al. [6]: with permission.

Table A8.5: Stomach injury scale

Grade*	Type of injury	Description of injury	ICD-10-AM	AIS-90
I	Contusion	Contusion / Haematoma	S36.3	2
	Laceration	Partial thickness laceration	S36.3	2
II	Laceration	<2cm in Gastro-oesophageal junction or pylorus	S36.3	3
		<5cm in proximal 1/3 stomach	S36.3	3
		<10cm in distal 2/3 stomach	S36.3	3
III	Laceration	>2cm in Gastro-oesophageal junction or pylorus	S36.3	3
		>5cm in proximal 1/3 stomach	S36.3	3
		>10cm in distal 2/3 stomach	S36.3	3
IV	Tissue Loss	Tissue loss or devascularisation <2/3 stomach	S36.3	4
V	Tissue Loss	Tissue loss or devascularisation >2/3 stomach	S36.3	4

*Advance one grade for multiple lesions up to grade III.

From Moore et al. [5]; with permission.

Table A8.6: Small bowel injury scale

Grade*	Type of injury	Description of injury	ICD-10-AM	AIS-90
I	Haematoma	Contusion or Haematoma without devascularisation	S36.40,9	2
	Laceration	Partial thickness, no perforation	S36.40,9	2
II	Laceration	Laceration <50% of circumference	S36.40,9	3
III	Laceration	Laceration $\geq$ 50% of circumference without transection	S36.40,9	3
IV	Laceration	Transection of the small bowel	S36.40,9	4
V	Laceration	Transection of the small bowel with segmental tissue loss	S36.40,9	4
	Vascular	Devascularised segment	S36.40,9	4

*Advance one grade for multiple injuries up to grade III.

From Moore et al. [6]; with permission.

Table A8.6a: Duodenum injury scale

Grade*	Type of injury	Description of injury	ICD-10-AM	AIS-90
I	Haematoma	Involving single portion of duodenum	S36.41	2
	Laceration	Partial thickness, no perforation	S36.41	3
II	Haematoma	Involving more than one portion	S36.41	2
	Laceration	Disruption <50% of circumference	S36.41	4
III	Laceration	Disruption 50%-75% of circumference of D2	S36.41	4
		Disruption 50%-100% of circumference of D1,D3,D4	S36.41	4
		Disruption >75% of circumference of D2		
IV	Laceration	Involving ampulla or distal common bile duct	S36.41	5
			S36.41	5
		Massive disruption of duodenopancreatic complex		
V	Laceration	Devascularisation of duodenum	S36.41	5
	Vascular		S36.41	5

*Advance one grade for multiple injuries up to grade III.

D1-first position of duodenum; D2-second portion of duodenum; D3-third portion of duodenum; D4-fourth portion of duodenum.

From Moore et al. [6]; with permission.

Table A8.7: Colon injury scale

Grade*	Type of injury	Description of injury	ICD-10-AM	AIS-90
I	Haematoma Laceration	Contusion or haematoma without devascularisation Partial thickness, no perforation	S36.50–4,9 S36.50–4,9	2 2
II	Laceration	Laceration <50% of circumference	S36.50–4,9	3
III	Laceration	Laceration ≥ 50% of circumference without transection	S36.50–4,9	3
IV	Laceration	Transection of the colon	S36.50–4,9	4
V	Laceration	Transection of the colon with segmental tissue loss	S36.50–4,9	4

*Advance one grade for multiple injuries up to grade III.

*863.40 / 863.50 = Non-specific site in colon.

863.41 / 863.51 = Ascending. 863.42 / 863.52 = Transverse. 863.43 / 863.53 = Descending.
863.44 / 863.54 = Sigmoid.

From Moore et al. [6]; with permission.

Table A8.8: Rectum injury scale

Grade*	Type of injury	Description of injury	ICD-10-AM	AIS-90
I	Haematoma Laceration	Contusion or haematoma without devascularisation Partial-thickness laceration	S36.6 S36.6	2 2
II	Laceration	Laceration < 50% of circumference	S36.6	3
III	Laceration	Laceration ≥ 50% of circumference	S36.6	4
IV	Laceration	Full-thickness laceration with extension into the perineum	S36.6	5
V	Vascular	Devascularised segment	S36.6	5

*Advance one grade for multiple injuries up to grade III.

From Moore et al. [6]; with permission.

Table A8.9: Kidney injury scale

Grade*	Type of injury	Description of injury	ICD-10-AM	AIS-90
I	Contusion	Microscopic or gross haematuria, urologic studies normal	S37.01	2
	Haematoma	Subcapsular, nonexpanding without parenchymal laceration	S37.01	2
II	Haematoma	Nonexpanding perirenal haematoma confined to renal retroperitoneum	S37.01	2
	Laceration	<1.0 cm parenchymal depth of renal cortex without urinary extravagation	S37.02	2
III	Laceration	>1.0 cm parenchymal depth of renal cortex without collecting system rupture or urinary extravasation	S37.02	3
IV	Laceration	Parenchymal laceration extending through renal cortex, medulla, and collecting system	S37.02	4
	Vascular	Main renal artery or vein injury with contained haemorrhage	S37.03	4
V	Laceration	Completely shattered kidney	S37.03	5
	Vascular	Avulsion of renal hilum which devascularises kidney	S37.03	5

*Advance one grade for bilateral injuries up to grade III.

From Moore et al. [7]; with permission.

Table A8.10 Ureter injury scale

Grade*	Type of injury	Description of injury	ICD-9	AIS-90
I	Haematoma	Contusion or haematoma without devascularisation	867.2 / 867.3	2
II	Laceration	< 50% transection	867.2 / 867.3	2
III	Laceration	$\geq$ 50% transection	867.2 / 867.3	3
IV	Laceration	Complete transection with < 2 cm devascularisation	867.2 / 867.3	3
V	Laceration	Avulsion with > 2 cm of devascularisation	867.2 / 867.3	3

*Advance one grade for bilateral up to grade III.

From Moore et al. [2]; with permission.

Table A8.11: Bladder injury scale

Grade*	Type of injury	Description of injury	ICD-9	AIS-90
I	Haematoma Laceration	Contusion, intramural Haematoma Partial thickness	867.0 / 867.1 867.0 / 867.1	2 3
II	Laceration	Extraperitoneal bladder wall laceration <2 cm	867.0 / 867.1	4
III	Laceration	Extraperitoneal (≥2cm) or intraperitoneal (<2cm) bladder wall laceration	867.0 / 867.1	4
IV	Laceration	Intraperitoneal bladder wall laceration ≥2cm	867.0 / 867.1	4
V	Laceration	Intraperitoneal or extraperitoneal bladder wall laceration extending into the bladder neck or ureteral orifice (trigone)	867.0 / 867.1	4

*Advance one grade for multiple lesions up to grade III.

From Moore et al. [2]; with permission.

Table A8.12: Urethra injury scale

Grade*	Type of injury	Description of injury	ICD-10-AM	AIS-90
I	Contusion	Blood at urethral meatus; urethrography normal	S37.30–3,8	2
II	Stretch injury	Elongation of urethra without extravasation on urethrography	S37.30–3,8	2
III	Partial disruption	Extravasation of urethrography contrast at injury site with visualisation in the bladder	S37.30–3,8	2
IV	Complete disruption	Extravasation of urethrography contrast at injury site without visualization in the bladder; <2cm of urethra separation	S37.30–3,8	3
V	Complete disruption	Complete transaction with ≥2 cm urethral separation, or extension into the prostate or vagina	S37.30–3,8	4

*Advance one grade for bilateral injuries up to grade III.

From Moore et al. [2]; with permission.

Appendix A9: Look-up table for sixth character sub-categories for various bodily organs

Table A9.1: Look-up table for sixth character sub-categories for injuries to lung, intra-abdominal organs and urinary and pelvic organs

6th Character	0	1	2	3	4	5	6	7	8	9
Grade	I	II	II	III	III	III	IV	IV	V / VI	
Lung	Contusion	Contusion	Laceration	Contusion	Laceration	Haematoma	Laceration	Haematoma/ Vascular	Vascular	UNSPEC
Description	Unilateral, <1 lobe	Unilateral, single lobe	Simple pneumothorax	Unilateral, >1 lobe	Persistent (>72 hrs) air leak from distal airway	Nonexpanding intraparenchymal	Major (segmental or lobar) air leak	Expanding intraparenchymal / Primary branch intrapulmonary vessel disruption	Hilar vessel disruption / Total uncontained transection of pulmonary hilum	
For use with codes:	S27.31	S27.31	S27.32	S27.31	S27.32	S27.31, S27.38	S27.4, S27.32	S27.31	S27.38	S27.31, S27.32, S27.38, S27.4
Grade	I	I	II	II	III	III	IV	V	V	
Spleen	Haematoma	Laceration	Haematoma	Laceration	Haematoma	Laceration	Laceration	Laceration	Vascular	UNSPEC
Description	Subcapsular, <10% surface area	Capsular tear, <1cm parenchymal depth	Subcapsular, 10%–50% surface area; intraparenchymal, <5 cm in diameter	Capsular tear, 1–3cm parenchymal depth that does not involve a trabecular vessel	Subcapsular, >50% surface area or expanding; ruptured subcapsular or parenchymal Haematoma; intraparenchymal Haematoma > 5 cm or expanding	>3 cm parenchymal depth or involving trabecular vessels	Laceration involving segmental or hilar vessels producing major devascularisation (>25% of spleen)	Completely shattered spleen	Hilar vascular injury with Devascularised spleen	
For use with codes:	S36.01	S36.02, S36.08	S36.01	S36.02	S36.03, S36.01	S36.03	S36.03	S36.04	S36.04	S36.00-.04, S36.08

Continued

Table A9.1 (continued): Look-up table for sixth character sub-categories for injuries to lung, intra-abdominal organs and urinary and pelvic organs

6th Character	0	1	2	3	4	5	6	7	8	9
Grade	I	I	II	II	III	III	IV	V	V/VI	UNSPEC
Liver	Haematoma	Laceration	Haematoma	Laceration	Haematoma	Laceration	Laceration	Laceration	Vascular	
Description	Subcapsular, <10% surface area	Capsular tear, <1cm parenchymal depth	Subcapsular, 10%–50% surface area; intraparenchymal, <10 cm in diameter	Capsular tear, 1–3cm parenchymal depth, <10 cm in length	Subcapsular, >50% surface area of ruptured subcapsular or parenchymal Haematoma; intraparenchymal Haematoma > 10 cm or expanding	3 cm parenchymal depth	Parenchymal disruption involving 25% to 75% hepatic lobe or 1–3 Couniard's segments within a single lobe	Parenchymal disruption involving > 75% hepatic lobe or >3 Couniard's segments within a single lobe	Juxtahepatic venous injuries/hepatic avulsion	
For use with codes:	S36.11	S36.13	S36.11	S36.14	S36.11	S36.14	S36.15	S36.15	S36.16	S36.10, S36.11, S36.12, S36.16
Grade	1	1	11	11	111		IV	V		
Pancreas	Haematoma	Laceration	Haematoma	Laceration	Laceration	**INVALID**	Laceration	Laceration	**INVALID**	UNSPEC
Description	Minor contusion without duct injury	Superficial laceration without duct injury	Major contusion without duct injury or injury loss	Major laceration without duct injury or injury loss	Distal transection or parenchymal injury with duct injury		Proximal transection or parenchymal injury involving ampulla	Massive disruption of pancreatic head		
For use with codes:	S36.20–.23,.29	S36.20–.23,.29	S36.20–.23,.29	S36.20–.23,.29	S36.20–.23,.29		S36.20–.23,.29	S36.21		S36.20–S36.23, 29

Continued

Table A9.1 (continued): Look-up table for sixth character sub-categories for injuries to lung, intra-abdominal organs and urinary and pelvic organs

6th Character	0	1	2	3	4	5	6	7	8	9
Grade	I	I	II	II	II	III	III	III	IV & V	
Stomach	Contusion	Laceration	Laceration	Laceration	Laceration	Laceration	Laceration	Laceration	Tissue Loss	UNSPEC
	Any part of stomach	Any part of stomach	Gastro-oesophageal Junction	Proximal 1/3 Stomach	Distal 2/3 Stomach	Gastro-oesophageal Junction	Proximal 1/3 Stomach	Distal 2/3 Stomach		
		Partial Thickness	<2cm	<5cm	<10cm	>2cm	>5cm	>10cm		
Description	Contusion/ Haematoma	Partial thickness laceration	<2cm in Gastro-oesophageal junction or pylorus	<5cm in proximal 1/3 stomach	<10cm in distal 2/3 stomach	>2cm in Gastro-oesophageal junction or pylorus	>5cm in proximal 1/3 stomach	>10cm in distal 2/3 stomach	Tissue loss or devascularisation	
For use with codes:	S36.3	S36.3	S36.3	S36.3	S36.3	S36.3	S36.3	S36.3	S36.3	S36.3
Grade	I	I	II		III	IV		V	V	
Small intestine	Haematoma	Laceration	Laceration	**INVALID**	Laceration	Laceration	INVALID	Laceration	Vascular	UNSPEC
Description	Contusion or Haematoma without devascularisation	Partial thickness, no perforation	Laceration <50% of circumference		Laceration > 50% of circumference without transection	Transection of the small bowel		Transection of the small bowel with segmental tissue loss	Devascularised segment	
For use with codes:	S36.40,2,9	S36.40,2,9	S36.40,2,9		S36.40,2,9	S36.40,2,9		S36.40,2,9	S36.40,2,9	

Continued

Table A9.1 (continued): Look-up table for sixth character sub-categories for injuries to lung, intra-abdominal organs and urinary and pelvic organs

6th Character	0	1	2	3	4	5	6	7	8	9
Grade	I	I	II	II	III		IV	V	V	
Duodenum	Haematoma	Laceration	Haematoma	Laceration	Laceration	**INVALID**	Laceration	Laceration	Vascular	UNSPEC
Description	Involving single portion of duodenum	Partial thickness, no perforation	Involving more than one portion	Disruption <50% of circumference	Disruption 50%–75% of circumference of D2 Disruption 50%–100% of circumference of D1,D3,D4		Disruption >75% of circumference of D2 Involving ampulla or distal common bile duct	Massive disruption of duodenopancreatic complex	Devascularisation of duodenum	
For use with codes:	S36.41	S36.41	S36.41	S36.41	S36.41		S36.41	S36.41	S36.41	S36.41
Grade	I	I	II		III	IV		V		
Colon	Haematoma	Laceration	Laceration	**INVALID**	Laceration	Laceration	**INVALID**	Laceration	**INVALID**	UNSPEC
Description	Contusion or haematoma without devascularisation	Partial thickness, no perforation	Laceration <50% of circumference		Laceration >50% of circumference without transection	Transection of the colon		Transection of the colon with segmental tissue loss		
For use with codes:	S36.50–4,9	S36.50–4,9	S36.50–4,9		S36.50–4,9	S36.50–4,9		S36.50–4,9		S36.50–4,9
Grade		I	II		III	IV			V	
Rectum		Laceration	Laceration	**INVALID**	Laceration	Laceration	**INVALID**	**INVALID**	Vascular	UNSPEC
Description	Contusion or haematoma without devascularisation	Partial-thickness laceration	Laceration <50% of circumference		Laceration >50% of circumference	Full-thickness laceration with extension into the perineum			Devascularised segment	
For use with codes:	S36.6	S36.6	S36.6		S36.6	S36.6			S36.6	S36.6

Continued

Table A9.1 (continued): Look-up table for sixth character sub-categories for injuries to lung, intra-abdominal organs and urinary and pelvic organs

6th Character	0	1	2	3	4	5	6	7	8	9
Grade	I	I	II	II	III	IV	IV	V	V	
Kidney	Contusion	Haematoma	Haematoma	Laceration	Laceration	Laceration	Vascular	Laceration	Vascular	UNSPEC
Description	Microscopic or gross haematuria, urologic studies normal	Subcapsular, nonexpanding without parenchymal laceration	Nonexpanding perirenal haematoma confined to renal retroperitoneum	<1.0 cm parenchymal depth of renal cortex without urinary extravagation	>1.0 cm parenchymal depth of renal cortex without collecting system rupture or urinary extravasation	Parenchymal laceration extending through renal cortex, medulla, and collecting system	Main renal artery or vein injury with contained haemorrhage	Completely shattered kidney	Avulsion of renal hilum which devascularises kidney	
For use with codes:	S37.01	S37.01	S37.01	S37.02	S37.02	S37.02	S37.03	S37.03	S37.03	S37.00–03
Grade	I		II		III	IV		V		
Ureter	Haematoma	**INVALID**	Laceration	**INVALID**	Laceration	Laceration	**INVALID**	Laceration	**INVALID**	UNSPEC
Description	Contusion or haematoma without devascularisation		<50% transection		>= 50% transection	Complete transection with <2 cm devascularistion		Avulsion with >2cm of devascularisation		
For use with codes:	S37.1		S37.1		S37.1	S37.1		S37.1		S37.1

Continued

Table A9.1 (continued): Look-up table for sixth character sub-categories for injuries to lung, intra-abdominal organs and urinary and pelvic organs

6th Character	0	1	2	3	4	5	6	7	8	9
Grade	I	I	II		III	IV		V		UNSPEC
Bladder	Haematoma	Laceration	Laceration	**INVALID**	Laceration	Laceration	**INVALID**	Laceration	**INVALID**	
Description	Contusion/ intramural haematoma	Partial thickness laceration	Extraperitoneal bladder wall laceration <2cm		Extraperitoneal (= 2cm) or intraperitoneal (<2cm) bladder wall laceration	Intraperitoneal bladder wall laceration = 2cm		Intraperitoneal or extraperitoneal bladder wall laceration extending into the bladder neck or ureteral orifice (trigone)		
For use with codes:	S37.21	S37.28	S37.22		S37.22	S37.22		S37.22		S37.20, S37.28
Grade	I		II		III	IV		V		
Urethra	Contusion	**INVALID**	Stretch Injury	**INVALID**	Partial Disruption	Complete disruption	**INVALID**	Complete disruption	**INVALID**	UNSPEC
Description	Blood at urethral meatus; urethrography normal		Elongation of urethra without extravasation on urethrography		Extravasation of urethrography contrast at injury site with visualisation in the bladder	Extravasation of urethrography contrast at injury site without visualization in the bladder; <2cm of urethra separation		Complete transaction with >2 cm urethral separation, or extension into the prostate or vagina		
For use with codes:	S37.30–3,8		S37.30–3,8		S37.30–3,8	S37.30–3,8		S37.30–3,8		S37.30–3,8

Appendix A10: Proposed changes not included in final submission

The following list includes proposed changes that were included in the initial report but were subsequently excluded from the final submission to NCCH. Some reasons for exclusion include:

- already adequately covered by existing codes
- not seen as providing any useful additional information
- difficulty in obtaining reliable information
- small case numbers

Category: S31.6 Open wound of abdominal cavity with penetration into peritoneal cavity

Proposed change: New category

Rationale: Serious injury that is unable to be identified in current revision of ICD-10-AM.

Feasibility: Depends on whether this type of open wound is detailed in the clinical record.

Source: 4

Reason for non-inclusion: Can already be covered by existing codes *S36.81 Injury to peritoneum and S31.1 Open wound of abdominal cavity.*

Categories: S01, S11, S21, S31, S41, S51, S61, S71, S81, S91 Open wound of [head, neck, thorax, abdomen, lower back and pelvis, shoulder and upper arm, forearm, wrist and hand, hip and thigh, lower leg, ankle and foot]

Proposed change: Addition of sixth character to distinguish type of injury

The nature of this character depends upon whether there is a common nomenclature used by surgeons when reporting upon open wound injuries.

Likely categories include:

- **laceration**
- **puncture wound**
- **open bite**
- **unspecified wound**

Rationale: An additional code (T89.0) is used to indicate if there are any complications associated with the open wound. This code is able to indicate the presence of a foreign body or if the wound became infected. Additional codes can be used to indicate if the open wound is associated with a fracture (e.g. S01.81) or a dislocation (e.g. S01.82). However, there is currently no method of determining the type of open wound injury.

Feasibility: Depends on whether the type of open wound is included in the clinical record.

Source: 1,2,4

Reason for non-inclusion: Extra information not seen as being particularly useful.

Categories: S12, S32, S42, S52, S62, S72, S82, S92 Fracture of [lumbar spine and pelvis, shoulder and upper arm, forearm, wrist and hand, femur, lower leg including ankle, foot, except ankle].

Proposed change: Addition of sixth character to distinguish between displaced and non-displaced fractures.

0 Non-displaced fracture

1 Displaced fracture

Rationale for change: Currently, can only distinguish between open and closed fractures. Gives a better indication of the severity of the fracture.

Feasibility: Depends on how the fracture is described in the clinical record.

Source: 1,2,4

Reason for non-inclusion: There is no compelling evidence that patients who sustain displaced fractures have significantly different outcomes from patients who sustain non-displaced fractures.

Categories: S15, S25, S35, S45, S55, S65, S75, S85, S95 Injury of blood vessels [at neck level, of thorax, of abdomen, lower back and pelvis, at shoulder and upper arm level, at forearm level, at wrist and hand level, at hip and thigh level, at lower leg level, at ankle and foot level]

Proposed change: Addition of fifth character (sixth for S15) to distinguish degree of injury.

Likely categories include:

Minor laceration
(Incomplete transection or superficial laceration)

Major laceration
(Complete transection or traumatic rupture)

Other

Unspecified

Rationale: Currently, there is no clear cut method of determining severity of injury. Major lacerations of blood vessels at neck level, of thorax and of abdomen, lower back and pelvis are commonly life threatening.

Feasibility: Depends upon whether there is a common nomenclature used by surgeons when reporting upon injuries to blood vessels.

Source: 4

Category: T74.4 Shaken infant syndrome

Proposed change: New category

Rationale: Topical in recent years

Feasibility: Difficult to diagnose. Relatively uncommon

Source: 4

Reason for non-inclusion: Uncommon and difficulty in diagnosing.

Category: U73.3 Criminal activity

Proposed change: New category

Add subcategories:

U73.30 Premeditated assault

U73.31 Theft break and enter

U73.32 Drug related (sale, purchase) or manufacture of illicit drugs

U73.33 Police pursuit in/on motor vehicle

U73.34 Police pursuit of non-motorised vehicle or conveyance

U73.35 Police pursuit on foot

U73.36 Being restrained and detained by police

U73.37 Escaping (attempted) custody

U73.38 Other specified criminal activity

U73.39 Unspecified criminal activity

Rationale: Currently, there is no method of determining if a person was engaged in criminal activity at the time he/she was injured.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 3

Reason for non-inclusion: Difficulty in obtaining reliable information.

Category: V20–V29 Motorcycle rider injured in transport accident

Proposed change: Addition of sixth character to distinguish motorcycles by engine size.

Likely categories include:

- engine size <50cc
- engine size from 50cc to less than 250cc
- engine size 250cc or greater

Rationale: Currently, there is no method of determining the engine size of a motor cycle involved in a traffic accident

Feasibility: Depends upon accuracy and accessibility of accident reports.

It has also been mentioned about unmotorised scooters with small battery powered engine.

Reason for non-inclusion: Information on size of motor cycle engine not always available. Also sixth character problem.

Categories: V30–V39 Occupant of three-wheeled motor vehicle injured in transport accident**; V40–V49** Car occupant injured in transport accident and **V50–V59** Occupant of pick-up truck or van injured in transport accident.

Proposed change: Addition of sixth character to distinguish whether a seatbelt or child restraint was being used at the time of the accident

Likely categories include:

- seatbelt or child restraint in use
- seatbelt or child restraint not in use
- not known if seatbelt or child restraint in use

Rationale: Provides useful information on the outcomes for motor vehicle accident victims depending on whether or not they were using a seatbelt or child restraint.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Reason for non-inclusion: Information on whether or not a motor vehicle accident victim was wearing a seatbelt or child restraint is not always available. Also sixth character problem

Category: W69 Drowning and submersion while in natural water ***(112/9)***

W69.0 lake
W69.1 open sea
W69.2 river
W69.3 stream
W69.8 other specified natural water
W69.9 unspecified natural water

Reason for non-inclusion: Can already be covered to some extent by use of existing place of occurrence codes. i.e. Y92.80 Area of still water; Y92.81 Stream of water; Y92.82 Large area of water; Y92.83 Beach

MUARC and VISAR have suggested the following additional categories for code W73.

W73 Other specified drowning and submersion ***(29/4)***

W73.0 quenching tank
W73.1 reservoir
W73.2 dam
W73.3 bucket
W73.8 other specified

Alcohol and drowning report—13 deaths in lake/reservoir, 7 in farm dam, bucket not mentioned.

MUNCCI report—185 water related deaths in Victoria from 1 Jan 1998 to 16 Jun 2000 (9 in dams, 1 in reservoir, none in bucket.

Reason for non-inclusion: Can already be covered to some extent by use of existing place of occurrence codes.

Category: X06 Exposure to ignition or melting of other clothing and apparel

Proposed change: Addition of fourth character to distinguish between plastic jewellery and other clothing or apparel

Rationale: Of interest to compare number of injuries caused by plastic jewellery as opposed to other clothing and apparel.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Reason for non-inclusion: Information not seen as particularly useful.

Category: X08 Exposure to other specified smoke, fire and flames

Proposed change: Addition of fourth character to distinguish type of burning material

Likely categories include:

- furniture fire due to burning cigarette
- furniture fire due to other burning material
- unspecified burning material
- other specified smoke, fire and flames

Rationale: Of interest to compare number of injuries caused by burning cigarettes as opposed to injuries caused by other burning materials.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Reason for non-inclusion: Difficulty in obtaining reliable information.

Category : X49 Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances (2409/10) (See also X69, Y19)

Proposed change: Addition of fourth character to distinguish between corrosive aromatics, acids, caustic alkalis and other and unspecified chemicals and noxious substances

X49.0 Accidental poisoning by and exposure to corrosive aromatics, acids and caustic alkalis

X49.8 Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances

Rationale for change: Selecting this code in addition to the code (T20–T31 Burns) will create the ability to distinguish between burns and corrosions.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Reason for non-inclusion: Already partly covered by code T54 *Toxic effect of corrosive substances*

Category: X58 Exposure to other specified factors

Proposed change: Addition of fourth category to distinguish between tobacco smoke and other factors

.

X58.0 Exposure to environmental tobacco smoke

X58.1 Exposure to other specified factors

Rationale: Of interest to know how many illnesses are attributable or partially attributable to exposure to passive smoking.

Feasiblity: Depends upon the amount of accuracy and detail provided in the clinical record.

Source: 4

Reason for non-inclusion: Difficult to determine contribution of environmental tobacco smoke to hospitalisation.

Category: X69 Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances (449/6) (See also X49, Y19)

Proposed change: Addition of fourth character to distinguish between corrosive aromatics, acids, caustic alkalis and other and unspecified chemicals and noxious substances

X69.0 Intentional self-poisoning by and exposure to corrosive aromatics, acids and caustic alkalis

X69.8 Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances

Rationale: Selecting this code in addition to the code (T20–T31 Burns) will create the ability to distinguish between burns and corrosions.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 4

Reason for non-inclusion: Already partly covered by code T54 *Toxic effect of corrosive substances*

Category: X77 Intentional self-harm by steam, hot vapours and hot objects

Proposed change: Addition of fourth character to distinguish nature of self-harm

Likely categories include:

- steam and hot vapours
- hot tap water
- other hot fluids
- hot household appliances
- other unspecified hot objects
- unspecified hot objects

Rationale: Of interest to compare number of injuries caused by different types of exposure to hot vapours and objects.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Reason for non-inclusion: Small number of cases.

Category:X98 Assault by steam, hot vapours and hot objects

Proposed change: Addition of fourth character to distinguish nature of assault

Likely categories include:

- steam and hot vapours
- hot tap water
- other hot fluids
- hot household appliances
- other unspecified hot objects
- unspecified hot objects

Rationale: Of interest to compare number of injuries caused by different types of exposure to hot vapours and objects.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Reason for non-inclusion: Small number of cases.

Category: Y19 Poisoning by and exposure to other and unspecified chemicals and noxious substances, undetermined intent (72/1) (See also X49, X69)

Proposed change: Addition of fourth character to distinguish between corrosive aromatics, acids, caustic alkalis and other and unspecified chemicals and noxious substances

Y19.0 Poisoning by and exposure to corrosive aromatics, acids and caustic alkalis, undetermined intent

Y19.8 Poisoning by and exposure to other and unspecified chemicals and noxious substances, undetermined intent

Rationale: Selecting this code in addition to the code (T20–T31 Burns) will create the ability to distinguish between burns and corrosions.

Source: 4

Reason for non-inclusion: Already partly covered by code T54 *Toxic effect of corrosive substances.*

Category: Y27 Contact with steam, hot vapours and hot objects, undetermined intent

Proposed change: Addition of fourth character to distinguish nature of contact

Likely categories include:

- steam and hot vapours
- hot tap water
- other hot fluids
- hot household appliances
- other unspecified hot objects
- unspecified hot objects

Rationale: Of interest to compare number of injuries caused by different types of exposure to hot vapours and objects.

Feasibility: Depends upon accuracy and accessibility of accident reports

(Case numbers very small. Maybe not worth altering)

Source: 4

Reason for non-inclusion: Small number of cases.

Category: Y35 Legal intervention

Proposed change: Addition of fifth character to distinguish type of victim

Likely categories include

- suspect
- law enforcement official
- bystander
- unspecified person

Rationale: Of interest to distinguish between individuals directly involved in intervention and bystanders.

Feasibility: Depends upon accuracy and accessibility of accident reports.

Source: 4

Reason for non-inclusion: Difficulty in obtaining reliable information.

Category: Y92.82 Large area of water

Proposed change: Add inclusion: Salt lake (with or without water)

Rationale: Currently, there is no precise method of recording the location of injuries that occur in this setting.

Feasibility: Depends upon accuracy and accessibility of accident reports

Source: 3

Reason for non-inclusion: Difficulty in obtaining reliable information.