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Diagnosis- based injury severity scaling

A method using Australian
and New Zealand hospital
data coded to ICD-10-AM

*Shaun Stephenson, John Langley,
Geoff Henley, James Harrison*



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hospital data coded to ICD-10-AM**

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Diagnosis-based Injury Severity Scaling

**A method using Australian and New Zealand
hospital data coded to ICD-10-AM**

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2003

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Abbreviations

AIS	Abbreviated Injury Scale
AIHW	Australian Institute of Health and Welfare
ICD-9-CM	9th Revision of the International Classification of Diseases, Clinical Modification
ICD-10	10th Revision of the International Classification of Diseases
ICD-10-AM	10th Revision of the International Classification of Diseases, Australian Modification
ICISS	ICD-based Injury Severity Score
NCCH	National Centre for Classification in Health
SRR	Survival Risk Ratio

Executive Summary

Background

Injury severity measurement is important for meaningful comparison of outcomes of trauma care, and assessment of burden of injury. This report focuses on severity measures based on threat to life, i.e. probability of death.

Throughout the 1990s New Zealand and Australia used modifications of the ICD-9 coding frame. Two methods have been shown to provide reasonable probability of death estimates with ICD-9. These were ICD-based Injury Severity Score (ICISS) and measures derived from Abbreviated Injury Scale (AIS) scores based on ICDMAP-90.

ICISS seems more easily translated to ICD-10 a variant of which, ICD-10-AM, has recently been adopted in Australia and New Zealand. The aim of this research was to evaluate the applicability of ICISS to ICD-10 and ICD-10-AM using Australian and New Zealand data.

Method

Data was extracted from Australia's National Hospital Morbidity Database (NHMD), for 1 July 1999 to 30 June 2001, and New Zealand's National Minimum Data Set (NMDS), for 1 July 1999 to 31 December 2001. Separations were selected from the injury and poisoning chapter of ICD-10-AM excluding late effects. Only one separation was selected for each injury event. A map was created to translate ICD-10-AM codes in these data sets to ICD-10 codes.

ICISS is an estimate of the probability of a patient surviving a given set of injuries. Survival Risk Ratio (SRR) is the probability of a patient surviving a single injury. Each patient's ICISS score is the product of the SRRs of each of the patient's injuries. A set of SRRs was calculated for each country with separations data coded to each of ICD-10 and ICD-10-AM giving four sets of SRRs in total. Each set of SRRs was used to calculate an ICISS for each separation in the Australian and New Zealand data sets.

ICISS was assessed on its ability to predict threat to life using logistic regression modeling. Models used ICISS and age as predictors and survival as the outcome. The models were assessed in terms of their discrimination, measured by the concordance score, and calibration, measured using calibration curves and the Hosmer-Lemeshow statistic (Hosmer and Lemeshow 1989).

Results

There were 523,633 Australian and 124,767 New Zealand separations selected including 7,230 and 1,565 deaths respectively.

Discrimination was high in all the fitted models with concordance scores of 0.885 to 0.910. Calibration results were also reasonably promising with all calibration curves being close to linear, though ICISS appeared to underestimate mortality somewhat for those with an ICISS score greater than 0.6.

Overall ICISS performed better when applied to the Australian than the New Zealand data set. Comparison of the SRRs showed Australian and New Zealand separations were very similar. ICISS was also a little more successful when ICD-10-AM rather than ICD-10 SRRs were used.

Limitations

Both the New Zealand and Australian data sets were limited by only including in hospital deaths. Adding deaths occurring outside hospital would enhance the value of the resulting severity estimates. A further limitation in regard to the Australian data set relates to an inability to identify individuals who underwent more than one separation within the study period. This can result in an overestimation of cases in relation to the number of deaths.

The results for ICD-10 may be conservative given the ICD-10 codes were produced by mapping rather than being directly coded. ICISS may be improved by incorporating non-injury diagnoses.

Logistic regression models are not entirely appropriate, as ICISS is unlikely to be linear in the log odds. This may have influenced the calibration results.

Significance

ICISS appears to be a reasonable way to estimate severity for databases using ICD-10 or ICD-10-AM. It is also likely to work well for other variants of ICD-10. These results suggest development of a further version of ICDMAP for use with ICD-10 data is unnecessary, as it is unlikely to result in significantly improved severity estimates.

1 Background

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, Jarvis et al. 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 (Langley and Cryer 2000; Cryer, Langley et al. 2002). This report focuses on probability of death, as it is the only criterion for which well-established methods exist to estimate injury severity. Various probability of death measures exist but most approaches require collection of special case data, or direct case-note review (Marcin and Pollack 2002). These approaches are unrealistic for large administrative databases due to the time and cost involved in data collection or review.

Many countries, including Australia and New Zealand maintain large administrative databases of injury hospital separations. These databases include detailed information on the nature of and circumstances of injury in the form of International Classification of Diseases (ICD) codes. During the 1990s both New Zealand and Australia used clinical modifications of the 9th revision of the ICD. Firstly, a United States version (ICD-9-CM) developed by the United States National Centre for Health Statistics was used (United States National Center for Health Statistics 1979). Subsequently, an Australian version (ICD-9-CM-A) was developed and adopted (National Coding Centre 1996).

Two methods have been shown to be capable of providing fairly reliable probability of death estimates based on ICD-9-CM diagnosis codes. One method involves translation of ICD-9-CM codes to AIS scores (Association for the Advancement of Automotive Medicine 1990) via the proprietary software package ICDMAP-90 (MacKenzie and Sacco 1997). The Abbreviated Injury Scale (AIS) has long been regarded as the injury coding 'industry standard' with respect to its injury-specific descriptive abilities. The AIS assigns a severity score to an injury on a scale from one (minor) to six (major). An AIS 1 injury will, generally, not require inpatient hospital treatment, whereas an AIS 6 injury is almost certainly fatal. AIS scores derived using ICDMAP-90 are referred to as ICD/AIS scores. A number of measures have been suggested to estimate the overall injury severity of people with multiple injuries and, hence, multiple AIS scores (Marcin and Pollack 2002).

The other method, known as ICISS (ICD-based Injury Severity Score), involves estimating probability of death directly from ICD-9-CM injury diagnoses by examining a large file of cases for which survival status is known. The estimated probabilities obtained (with certain caveats) can be applied to cases in other similar data collections (Osler, Rutledge et al. 1996).

There is more experience with ICD/AIS based measures than with ICISS, and early literature suggested that the former might be more effective (Sacco, MacKenzie et al. 1999). However, recent evidence suggests that the methods perform similarly (Meredith, Evans et al. 2002; Stephenson, Langley et al. 2002).

Neither seems to be as good as AIS scoring based on direct case note review. However, both offer an inexpensive way to derive quite good severity estimates if data with good quality ICD-9-CM coding is available.

In 1992 the World Health Organization published the 10th revision of ICD (World Health Organization 1992). A clinical modification of ICD-10 was developed in Australia, ICD-10-AM (National Centre for Classification in Health 1998). ICD-10-AM was introduced in four Australian jurisdictions for hospital separations in 1998-99. Its use was extended to all Australian jurisdictions and to New Zealand from 1 July 1999. A United States clinical modification of ICD-10 (ICD-10-CM) is in development but has not yet been implemented.

Transition to ICD-10 presents problems for both ICD/AIS and ICISS. Formal updating of ICDMAP for use in Australia or New Zealand would require development and validation of a map between ICD-10-AM and AIS. (Even if a map from ICD-10-CM to AIS is developed, differences between ICD-10-CM and ICD-10-AM will probably be enough to matter for this purpose.)

Three-step mapping could, in principle, offer an easier route:

- ICD-10-AM to ICD-9-CM-A via the *prime facie* tables produced by the National Centre for Classification in Health, NCCH (National Coding Centre 2000);
- ICD-9-CM-A to the version of North American ICD-9-CM embodied in ICDMAP-90, then
- ICD-9-CM to AIS via ICDMAP-90.

However, this would be complex, and predictive power would be lost at each of the translation steps.

ICISS appears to offer a more direct and certain route to severity scores based on ICD-10-AM. The algorithm to derive ICISS is not specific to a particular version of ICD, and it can be applied directly to Australian and New Zealand hospital separations data. Only one previous study was identified that has examined the performance of ICD-10-based ICISS (Kim, Jung et al. 2000). This study indicated a lower performance for ICD-10-based ICISS when compared to ICD-9-CM based ICISS. However, the sample size used in this study was very small.

As ICD-10-AM includes Australian extensions of the WHO ICD-10 codes, as well as specific Australian disease codes, it needs to be independently assessed. Data now available in Australia and New Zealand provide a particularly good basis for testing the ICISS method in the context of ICD-10-AM coding. Mapping of the Australian and New Zealand data from ICD-10-AM to ICD-10 would also allow further evaluation of the applicability of ICISS to ICD-10.

The aims of this research were to:

- Evaluate the applicability of ICISS to ICD-10-AM using New Zealand and Australian data.
- Evaluate the applicability of ICISS to ICD-10.
- Compare the New Zealand and Australian results.

2 Methods

2.1 Data sources

Australian and New Zealand hospital separations data were used for this project. Australian data were from the Australian Institute of Health and Welfare (AIHW) National Hospital Morbidity Database (NHMD), while New Zealand data were from the National Minimum Data Set (NMDS) maintained by the New Zealand Health Information Service (NZHIS).

Australian data were hospital separations from the 1999–2000 and 2000–2001 financial years. New Zealand data were hospital separations for the period 1 July 1999 to 31 December 2001. The Australian data included up to 25 diagnoses per separation and the New Zealand data included up to 15 diagnoses per separation.

2.2 Case definition

Separations that satisfied all of the following criteria were selected:

A 'Principal Diagnosis' in the ICD-10-AM range S00–T89 (i.e. Chapter XIX Injury, poisoning and certain other consequences of external causes, except for sequelae of injury).

Separation date was at least one day after the admission date, unless separation was due to death.

For Australian separations, separation mode was coded to 'Transfer-nursing', 'Transfer-psychiatric', 'Transfer-other health', 'Discharge own risk', 'Statistical discharge-leave', 'Died' or 'Other-usual residence'. Separations for which separation mode was coded to either 'Transfer-other acute' or 'Statistical discharge-type change' were omitted in order to reduce multiple counting of injury cases (i.e. cases in which there was more than one separation event for the same injury).

For New Zealand separations, the separation was identified as a first admission using a previously developed readmission indicator which allows an individual's last known separation to be linked to their initial separation (Langley, Stephenson et al. 2002).

Australian separations were coded as 'Dead' if the separation mode was 'Died'. New Zealand separations were coded as 'Dead' if the discharge type was 'Discharged Dead' or if a readmission for the same injury event was identified where the discharge type was 'Discharged Dead'.

The last 12 months of the Australian data and the last six months of the New Zealand data were coded to the 2nd Edition of ICD-10-AM so it was back mapped to the 1st edition. Only six diagnosis codes were affected, all of which were one-to-one mappings.

2.3 ICD-10 Codes

A map was created to translate ICD-10-AM codes back to ICD-10 codes. This was constructed primarily by reversing an ICD-10 to ICD-10-AM forward map created by NCCH (National Centre for Classification in Health 2000). In a small number of cases ICD-10-AM codes had no equivalent code in ICD-10. The back mapped codes used in these cases are summarised in Table 2.1. There were also a small number of cases where the presence or absence of one ICD-10-AM code influenced the back mapped code of another ICD-10-AM code. The back mapped codes used in these cases are summarised in Table 2.2.

Table 2.1: ICD-10 code used for ICD-10-AM codes with no specific ICD-10 equivalent

ICD-10-AM Code	ICD-10 Code
S01.8–S01.83	S01.9
S11.81, S11.82	S11.9
S21.81, S21.82	S21.9
S51.81, S51.82	S51.9
S61.81, S61.82	S61.9
S81.81, S81.82	S81.9
S91.81, S91.82	S91.3
S24.70–S24.77	Not mapped
S34.70–S34.76	Not mapped
S42.09	S42.0
S42.19	S42.1
S42.45	S42.4
S42.49	S42.4
T89.00–T89.03	T88.8

Table 2.2: ICD-10 code used for specific combinations of ICD-10-AM codes

ICD-10-AM Code	ICD-10-AM Other Code	ICD-10 Code	
		Other Code Absent	Other Code Present
S02.x	S01.81	S02.x0	S02.x1
S06.x	S01.83	S06.x0	S06.x1
S12.x	S11.81	S02.x0	S02.x1
S22.x	S21.81	S02.x0	S02.x1
S26.x, S27.x	S21.83	S02.x0	S02.x1
S32.x	S31.81	S02.x0	S02.x1
S36.x, S37.x	S31.83	S02.x0	S02.x1
S42.x	S41.81	S02.x0	S02.x1
S52.x	S51.81	S02.x0	S02.x1
S62.x	S61.81	S02.x0	S02.x1
S72.x	S71.81	S02.x0	S02.x1
S82.x	S81.81	S02.x0	S02.x1
S92.x	S91.81	S02.x0	S02.x1

2.4 ICISS

The ICISS method involves calculating a Survival Risk Ratio (SRR), i.e. the probability of survival, for each individual injury diagnosis code 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 (Osler, Rutledge et al. 1996).

A set of SRRs was calculated for each country with separations data coded to each of ICD-10 and ICD-10-AM giving four sets of SRRs in total. Each set of SRRs was used to calculate an ICISS for each patient in the Australian and New Zealand separations data sets. Where a diagnosis code was present in a data set but no SRR existed in the set of SRRs being applied, the SRR for that diagnosis code was assumed to be one (this was the case for a very small number of diagnoses that had been used in Australia but not in New Zealand or vice versa).

2.5 Statistical analysis

ICISS was assessed on its ability to predict severity, in terms of threat to life, using logistic regression modelling. Models used ICISS as the predictor variable and survival as the outcome. Models were fitted, both with and without age added as a second predictor variable. Age was coded as a categorical variable at five levels (0–14, 15–24, 25–64, 65–79, and 80+).

There are two areas in which logistic regression models can be assessed: discrimination and calibration (Harrell, Lee et al. 1996). Discrimination refers to the ability of the model to distinguish survivors from non-survivors whilst calibration measures how accurately the model predicts the probability of death of a given set of cases. A model may be highly discriminating, but poorly calibrated or, alternatively, well calibrated but poorly discriminating.

The level of discrimination was assessed using a measure known as concordance (Harrell, Lee et al. 1996). Concordance is calculated by comparing the survival probabilities of all possible pairs of survivors and nonsurvivors. A score of 1 is assigned if the survivor has a greater probability of survival; 0.5, where the survival probabilities are equal; or 0, where the nonsurvivor has a greater probability of survival. The concordance is the sum of these values divided by the total number of survivor/nonsurvivor pairs. A value of 0.5 indicates no predictive discrimination, whereas a value of 1.0 indicates perfect separation of patients with different outcomes. The concordance has been shown to equal the area under the receiver operating characteristic (ROC) curve. It is best to compare the relative discrimination of the models by doing more than simply comparing concordance values, as these tend to be highly data dependent. One approach is to use bootstrapping to correct for any optimism in the concordance values and to estimate confidence intervals. The procedure outlined by Harrell et al. has been used here to correct the concordance values for bias caused by the use of a single data set for design and testing (Harrell, Lee et al. 1996).

The relative calibration of the scores was compared using calibration curves (Rowan, Kerr et al. 1993) and the Hosmer-Lemeshow (H-L) statistic (Hosmer and Lemeshow 1989). Calibration curves are a plot of observed against estimated mortality, with cases grouped by estimated mortality. If the model is perfectly calibrated, observed and estimated mortality will be equal and all points on the calibration curve will lie on a 45-degree line. Deviations from this line show when the model is over- or under-predicting mortality.

The H-L statistic is a summary measure of the calibration of the model. It is also based on comparing the observed and estimated mortality for patients grouped by estimated mortality. The resulting statistic follows a χ^2 distribution, with the degrees of freedom equal to two less than the number of groups. The smaller the H-L statistic, the better the fit, with a perfectly calibrated model having a value of zero.

Separations were assigned to one of four categories based on their primary diagnosis. These categories were Head Injury (S00–S09), Other AIS (S10–T14), Complications (T80–T88), and Other (T15–T79, T89). Concordance scores were calculated separately for each of these categories.

The number of diagnoses per separation in the Australian and New Zealand data were compared. The SRR sets for Australia and New Zealand were compared.

Confidence intervals were constructed using the methods of Agresti and Coull for proportions (Agresti and Coull 1998) and Newcombe for differences in proportions (Newcombe 1998). Calculation of SRR values and initial model fitting was undertaken in SPSS version 11.5.0 (© 1989–2002 SPSS Inc.) for Australian data and SAS version 8.00 (© 1999 SAS Institute Inc.) for New Zealand data. Concordance calculations were conducted using R version 1.6.2 (© 2003 The R Development Core Team) (Ihaka and Gentleman 1996).

3 Results

Applying the selection criteria resulted in 523,633 hospital separations including 7,230 deaths (1.4%) in Australia and 124,767 separations including 1,565 deaths (1.3%) in New Zealand. The average diagnoses per separation in Australia and New Zealand are given in Table 3.1.

Table 3.1: Mean injury and total diagnoses per separation for Australia and New Zealand

Country	Mean Injury Diagnoses		Mean Total Diagnoses	
	Survivors	Deaths	Survivors	Deaths
Australia	1.59	2.56	3.07	8.51
New Zealand	1.69	2.64	3.23	7.86

3.1 Analysis of Australian separations

3.1.1 Discrimination

The bootstrap adjusted concordance values for the Australian separations are presented in Table 3.2. The concordance values were all high (range 0.885–0.906). The concordance of the model dropped by 0.019 when New Zealand SRR values were used. The ICD-10-AM concordance scores were 0.002 higher than the ICD-10 values. Concordance values were on average 0.049 lower when age was excluded, with differences ranging from 0.035–0.061 (data not shown).

Table 3.2: Bootstrap adjusted concordance values and 95% confidence intervals (includes age). Australian separations

SRR Source	Concordance	95 % CI
Australia (ICD-10-AM)	0.906	(0.903, 0.909)
NZ (ICD-10-AM)	0.887	(0.884, 0.891)
Australia (ICD-10)	0.904	(0.902, 0.907)
NZ (ICD-10)	0.885	(0.882, 0.888)

Concordance by diagnosis results are shown in Table 3.3. Concordance was significantly higher for mechanical trauma injuries than other injuries. Head injuries had the highest concordance. The lowest concordance was for complications using Australian SRRs and other injuries using New Zealand SRRs. The concordance dropped by 0.006–0.089 when the New Zealand SRRs were used. The largest drop was for other injuries.

**Table 3.3 Concordance values and 95% confidence intervals by diagnosis (includes age).
Australian separations**

Diagnosis	% of Separations	SRR Source (ICD-10-AM only)			
		Australia		New Zealand	
		Concordance	95 % CI	Concordance	95 % CI
Head injury (S00–S09)	13	0.964	(0.961, 0.967)	0.958	(0.954, 0.961)
Other mechanical trauma (S10–T14)	56	0.930	(0.928, 0.932)	0.921	(0.919, 0.924)
Complications (T80–T88)	18	0.790	(0.781, 0.800)	0.762	(0.750, 0.773)
Other (T15–T79, T89)	13	0.838	(0.824, 0.857)	0.749	(0.734, 0.766)

3.1.2 Calibration

The H-L statistics for the Australian separations are presented in Table 3.4. A marked increase was observed in the H-L statistic when comparing ICD-10 to ICD-10-AM derived scores. When New Zealand SRRs were used in place of Australian SRRs, marked increases were observed in the H-L statistic for both ICD-10-AM and ICD-10.

**Table 3.4: H-L statistics (includes age).
Australian separations**

SRR Source	HL
Australia (ICD-10-AM)	166.3
NZ (ICD-10-AM)	271.3
Australia (ICD-10)	246.5
NZ (ICD-10)	487.4

Calibration curves for the Australian separations are given in figures 3.1–3.4. Using the Australian SRRs (Figures 3.1 and 3.3) produced a moderately better calibrated model than using the New Zealand SRRs (Figures 3.2 and 3.4). Calibration was generally better at lower mortality, and was particularly good below 40% observed mortality, in all four models. The calibration curves for the models in which age was excluded were all poorer fits than for those with age included, although not markedly so (Figures not shown).

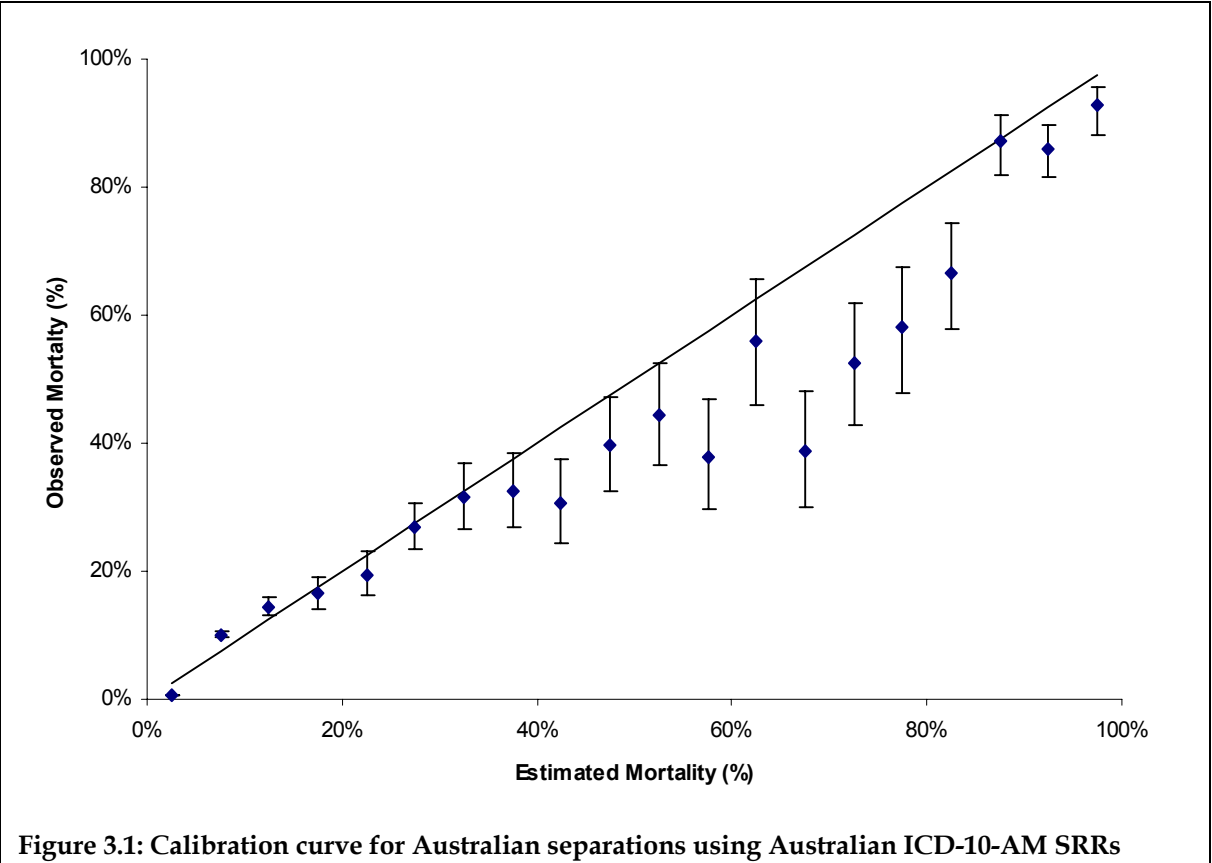


Figure 3.1: Calibration curve for Australian separations using Australian ICD-10-AM SRRs

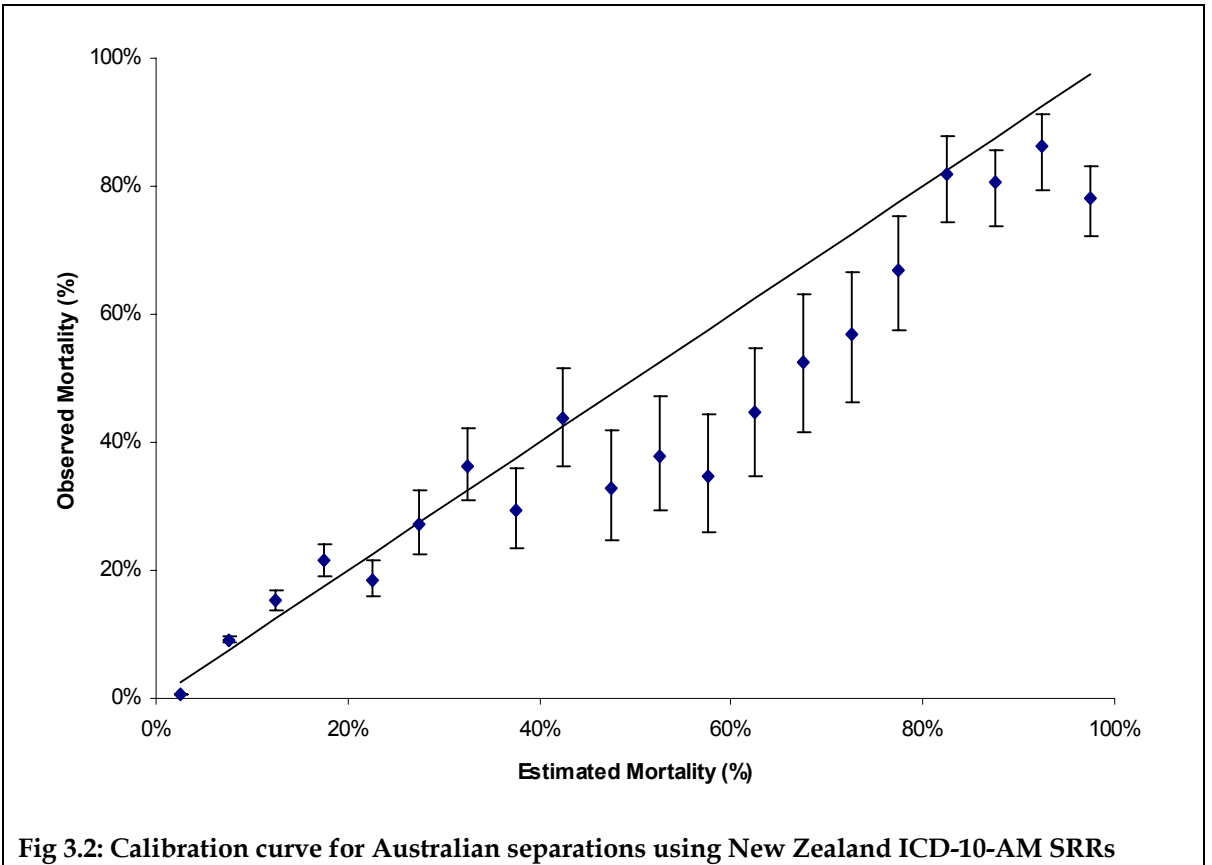
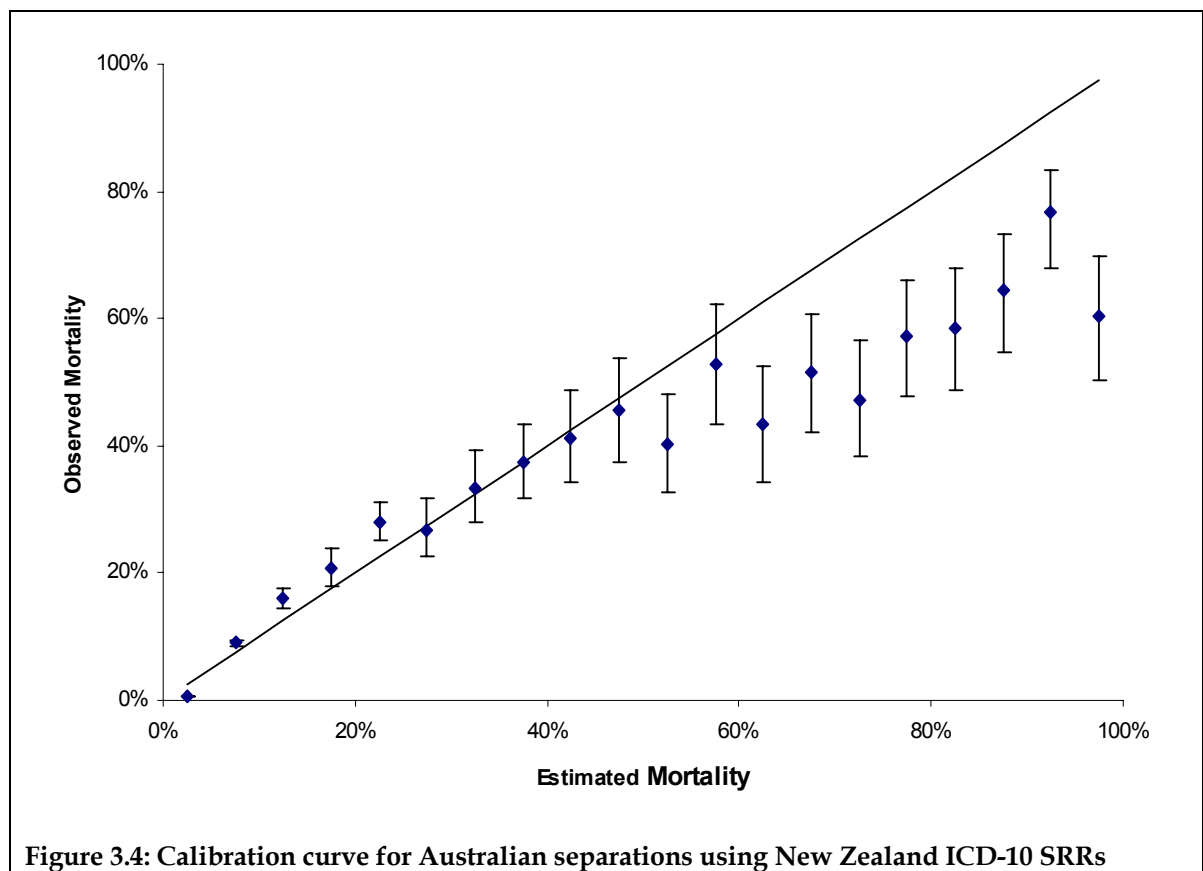
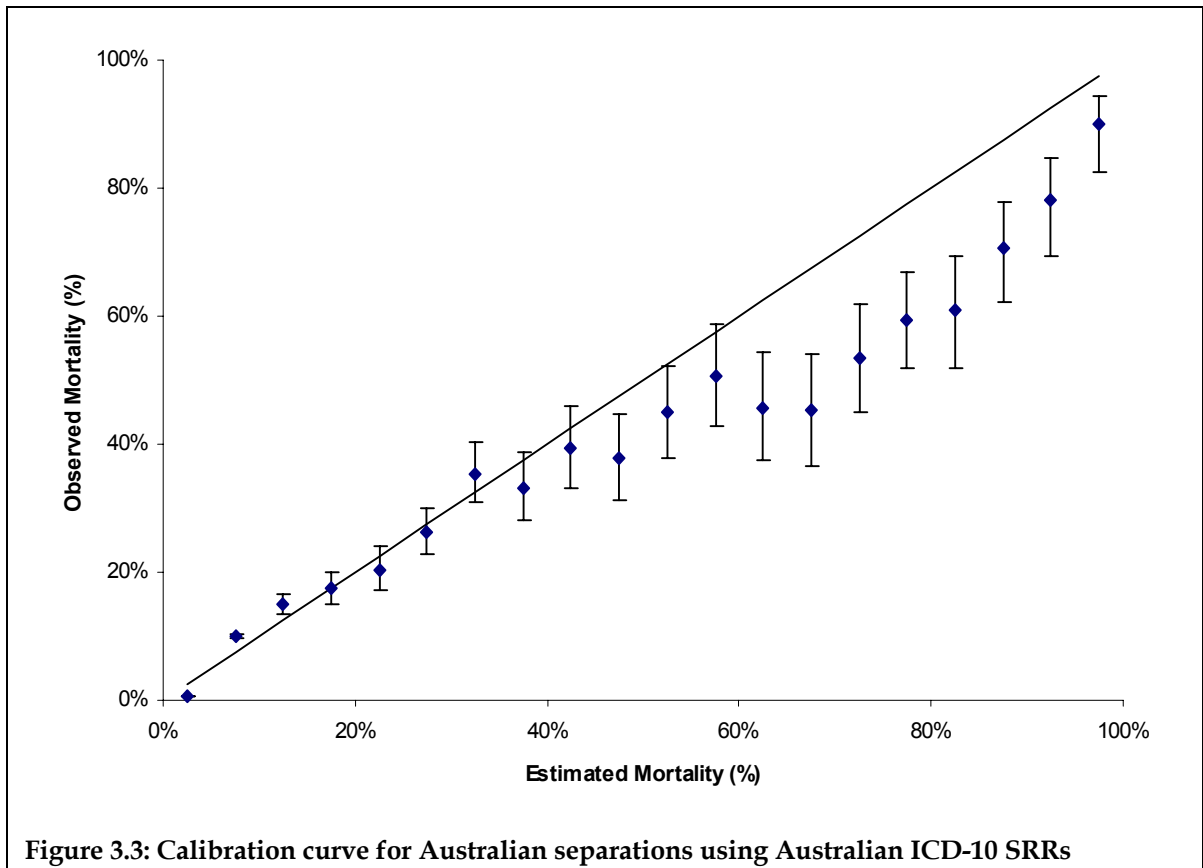


Fig 3.2: Calibration curve for Australian separations using New Zealand ICD-10-AM SRRs



3.2 Analysis of New Zealand separations

3.2.1 Discrimination

The bootstrap adjusted concordance values for the New Zealand separations are presented in Table 3.5. The concordance values were all high (range 0.902–0.910). The concordance of the model dropped by 0.004–0.005 when Australian SRRs were used. The ICD-10-AM concordance scores were 0.003–0.004 higher than the ICD-10 values. When age was excluded, concordance values were on average 0.052 lower, with differences ranging from 0.046–0.058 (data not shown).

Table 3.5: Bootstrap adjusted concordance values and 95% confidence intervals (includes age). New Zealand separations

SRR Source	Concordance	95 % CI
NZ (ICD-10-AM)	0.910	(0.904, 0.915)
Australia (ICD-10-AM)	0.905	(0.900, 0.910)
NZ (ICD-10)	0.906	(0.900, 0.911)
Australia (ICD-10)	0.902	(0.896, 0.908)

Concordance by diagnosis results are shown in Table 3.6. Concordance was significantly higher for mechanical trauma than other injuries. Head injuries had the highest concordance and Complications the lowest. The concordance dropped by 0–0.014 when the Australian SRRs were used.

Table 3.6: Concordance values and 95% confidence intervals by diagnosis (includes age). New Zealand separations

Diagnosis	% of Separations	SRR Source (ICD-10-AM only)			
		New Zealand		Australia	
		Concordance	95 % CI	Concordance	95 % CI
Head injury (S00–S09)	13	0.960	(0.952, 0.969)	0.960	(0.952, 0.969)
Other mechanical trauma (S10–T14)	61	0.920	(0.915, 0.925)	0.914	(0.910, 0.919)
Complications (T80–T88)	15	0.788	(0.764, 0.812)	0.782	(0.760, 0.807)
Other (T15–T79, T89)	11	0.844	(0.811, 0.873)	0.830	(0.796, 0.860)

3.2.2 Calibration

The H-L statistics for the New Zealand separations are presented in Table 3.7. A marked increase was observed in the H-L statistics when comparing ICD-10 to ICD-10-AM derived scores. When Australian SRRs were used in place of New Zealand SRRs, slight decreases were observed in the H-L statistics for both ICD-10-AM and ICD-10.

**Table 3.7: H-L statistics (includes Age).
New Zealand separations**

SRR Source	HL
NZ (ICD-10-AM)	37.1
Australia (ICD-10-AM)	33.8
NZ (ICD-10)	68.7
Australia (ICD-10)	64.1

Calibration curves for the New Zealand separations are given in figures 3.5–3.8. Using the New Zealand SRRs (Figures 3.5 and 3.7) produced a similarly well calibrated model to using the Australian SRRs (Figures 3.6 and 3.8). Calibration was generally better at lower mortality, and was particularly good below 30% observed mortality, in all four models. The calibration curves for the models in which age was excluded were poorer fits than for those with age included in relation to ICD-10-AM, in contrast to ICD-10 where similarly fitting models were observed (Figures not shown).

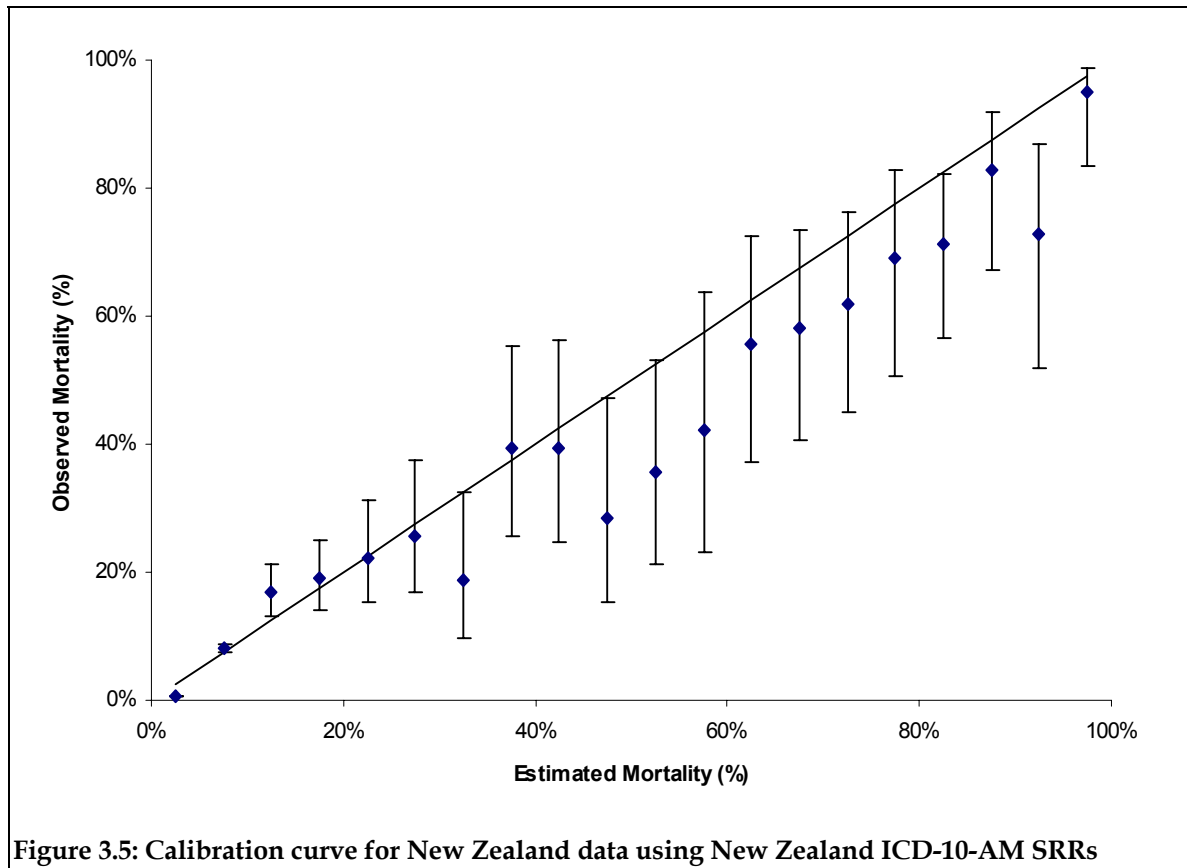


Figure 3.5: Calibration curve for New Zealand data using New Zealand ICD-10-AM SRRs

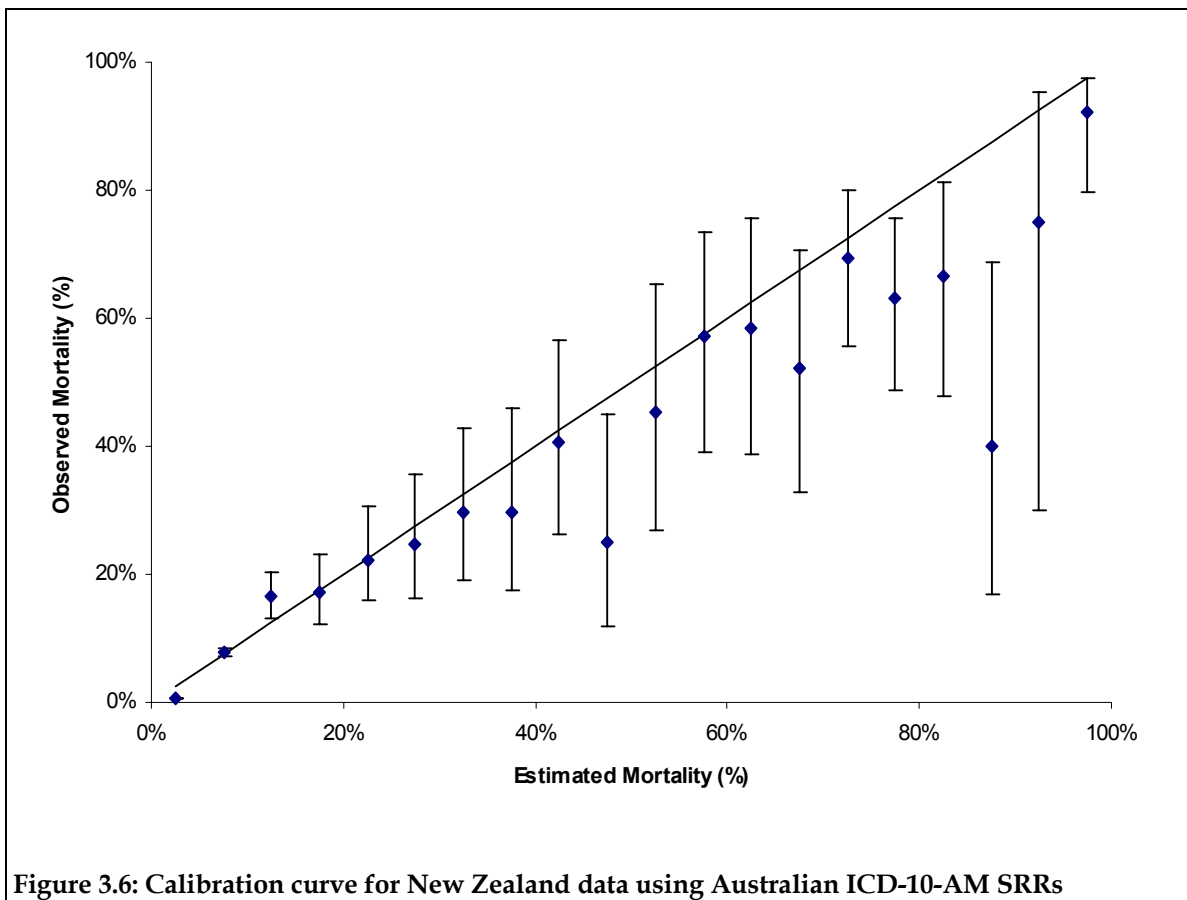
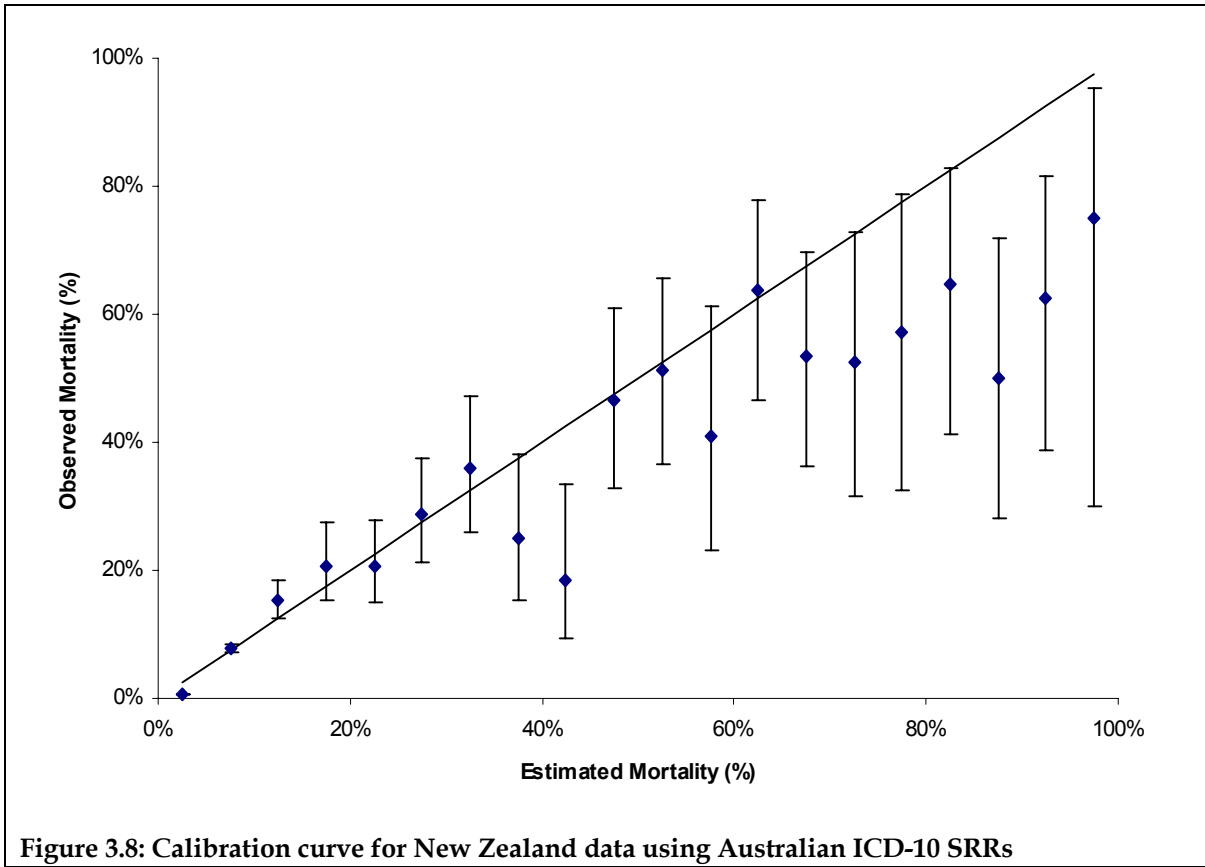
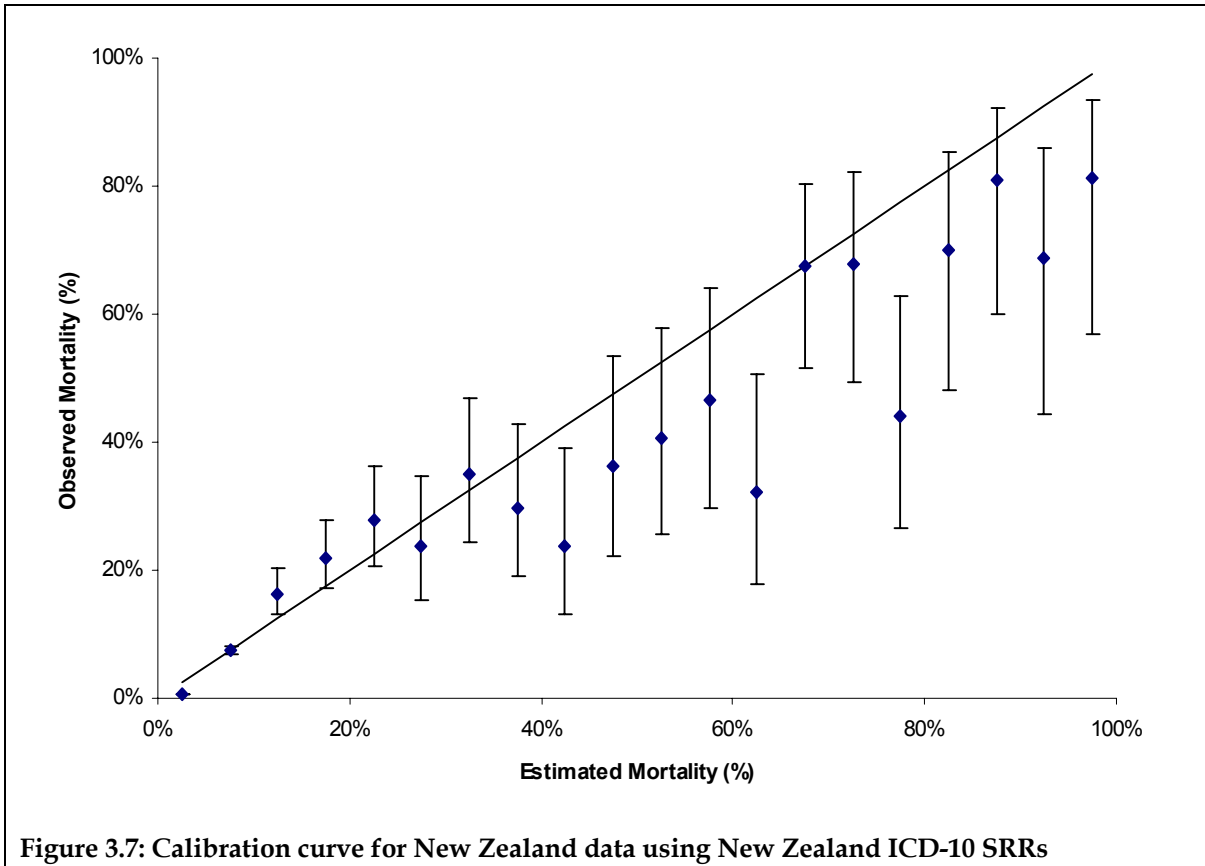


Figure 3.6: Calibration curve for New Zealand data using Australian ICD-10-AM SRRs



3.3 Comparison of New Zealand and Australian SRR Sets

3.3.1 ICD-10-AM

Comparisons between Australian and New Zealand ICD-10-AM SRR sets are presented in Tables 3.8–3.10. The differences in SRR values for the most common diagnoses were small with differences ranging from 0–4% (Table 3.8). Differences between the two sets were also generally small in terms of diagnoses with the most deaths with differences of 0–14% (Table 3.9). The ranking of diagnoses was also similar with 16 of the top 20 most frequently occurring diagnoses common to both countries. Similarly, 17 of the 20 diagnoses with the most deaths were common to both countries. In both tables 3.8 and 3.9 the Australian SRRs were generally lower than the New Zealand SRRs.

Selected diagnoses where the SRRs for Australia and New Zealand were significantly different are shown in Table 3.10. The number of cases with these diagnoses was generally low (Australia 27–622 cases; New Zealand 10–160 cases). Four diagnoses from ‘S36–Injury to intra-abdominal organs’ had significantly different SRRs indicating there may be a difference in the use of this code between Australia and New Zealand.

Table 3.8: Comparison between Australia and New Zealand of proportions surviving (SRRs) for most common diagnoses

ICD Code	Description	Australia			New Zealand			Difference	
		Total	SRR (%)	95% CI (%)	Total	SRR (%)	95% CI (%)	SRR (%)	95% CI (%)
T81.4	Infection following a procedure, nec	25,704	99	(98, 99)	5,227	99	(99, 99)	1	(0, 1)
T81.0	Haemorrhage and haematoma complicating a procedure, nec	17,170	99	(98, 99)	3,526	99	(98, 99)	0	(0, 1)
S61.0	Open wound of finger(s) without damage to nail	14,912	100	(100, 100)	4,362	100	(100, 100)	0	(0, 0)
T42.4	Benzodiazepines	12,942	99	(99, 100)	1,484	99	(99, 99)	0	(–1, 0)
S01.0	Open wound of scalp	11,028	98	(98, 98)	2,792	98	(97, 98)	0	(–1, 0)
S52.51	Fracture of lower end of radius with dorsal angulation	10,766	99	(99, 100)	1,771	100	(99, 100)	0	(0, 0)
S52.6	Fracture of lower end of both ulna and radius	10,519	100	(100, 100)	3,443	100	(100, 100)	0	(0, 0)
S06.02	Loss of consciousness of brief duration (less than 30 minutes)	8,851	99	(99, 99)	3,651	99	(99, 100)	0	(0, 1)
S09.9	Unspecified injury of head	8,503	99	(99, 99)	2,311	100	(99, 100)	1	(0, 1)
S52.50	Fracture of lower end of radius, unspecified	8,199	100	(99, 100)	1,724	100	(99, 100)	0	(0, 0)
S72.03	Fracture of subcapital section of femur	6,902	91	(90, 92)	3,298	94	(93, 95)	3	(2, 4)
S72.11	Fracture of intertrochanteric section of femur	5,578	90	(89, 91)	2,816	93	(92, 94)	4	(2, 5)
S01.80	Unspecified open wound of other parts of head	4,930	98	(98, 99)	2,452	98	(98, 99)	0	(–1, 0)

Table 3.9: Comparison between Australia and New Zealand of proportions surviving (SRRs) for diagnoses with most deaths

ICD Code	Description	Australia			New Zealand			Difference	
		Dead	SRR (%)	95% CI (%)	Dead	SRR (%)	95% CI (%)	SRR (%)	95% CI (%)
S06.5	Traumatic subdural haemorrhage	678	74	(73, 76)	116	81	(77, 84)	6	(3, 10)
S72.03	Fracture of subcapital section of femur	615	91	(90, 92)	195	94	(93, 95)	3	(2, 4)
S72.11	Fracture of intertrochanteric section of femur	569	90	(89, 91)	188	93	(92, 94)	4	(2, 5)
S06.05	Loss of consciousness of prolonged duration (more than 24 hours), without return to pre-existing conscious level	460	9	(6, 11)	124	23	(17, 30)	14	(8, 21)
S06.6	Traumatic subarachnoid haemorrhage	444	63	(60, 65)	93	71	(66, 76)	9	(3, 14)
S02.1	Fracture of base of skull	433	89	(88, 90)	101	89	(87, 91)	1	(-2, 3)
T81.4	Infection following a procedure, nec	385	99	(98, 99)	48	99	(99, 99)	1	(0, 1)
S32.5	Fracture of pubis	349	94	(93, 95)	77	95	(94, 96)	1	(0, 3)
S72.00	Fracture of neck of femur, part unspecified	327	88	(86, 89)	53	89	(86, 92)	2	(-2, 4)
S06.1	Traumatic cerebral oedema	308	55	(52, 59)	79	60	(53, 67)	5	(-3, 13)
S01.0	Open wound of eyelid and periocular area	239	98	(98, 98)	63	98	(97, 98)	0	(-1, 0)
S06.23	Multiple intracerebral and cerebellar haematomas	232	70	(66, 73)	53	71	(64, 77)	1	(-6, 8)

Table 3.10: Comparison between Australia and New Zealand of proportions surviving (SRRs) for diagnoses with significantly different SRRs of at least 10% and at least 10 separations in each country

ICD Code	Description	Australia			New Zealand			Difference	
		Total	SRR (%)	95% CI (%)	Total	SRR (%)	95% CI (%)	SRR (%)	95% CI (%)
S06.20	Diffuse cerebral and cerebellar brain injury, unspecified	42	38	(25, 53)	25	76	(57, 89)	38	(13, 56)
S36.17	Injury of gallbladder	27	93	(77, 98)	12	67	(39, 86)	-26	(-54, -1)
S25.0	Injury of thoracic aorta	43	63	(48, 76)	18	89	(67, 97)	26	(1, 43)
S36.15	Major laceration of liver	100	62	(52, 71)	42	81	(67, 90)	19	(2, 32)
S01.39	Open wound of other and multiple parts of ear and auditory structures	49	100	(93, 100)	11	82	(52, 95)	-18	(-48, -3)
S27.38	Other and unspecified injuries of lung	94	89	(82, 94)	30	73	(56, 86)	-16	(-34, -1)
T71	Asphyxiation	408	77	(73, 81)	128	91	(85, 95)	14	(7, 20)
S06.05	Loss of consciousness of prolonged duration (more than 24 hours), without return to pre-existing conscious level	503	9	(6, 11)	160	23	(17, 30)	14	(8, 21)
S06.04	Loss of consciousness of prolonged duration (more than 24 hours), with return to pre-existing conscious level	103	84	(76, 90)	50	98	(90, 100)	14	(3, 22)
S32.83	Fracture of pelvis, part unspecified	622	89	(86, 91)	74	77	(66, 85)	-12	(-23, -3)
S36.83	Injury of retroperitoneum	332	76	(71, 80)	79	87	(78, 93)	12	(2, 19)
S10.98	Superficial injury of neck, part unspecified, other	103	100	(96, 100)	10	90	(60, 98)	-10	(-40, -1)
S36.10	Injury of liver, unspecified	171	84	(77, 88)	81	94	(86, 97)	10	(1, 17)

3.3.2 ICD-10

Comparisons between Australian and New Zealand ICD-10 SRR sets are presented in Tables 3.11–3.13. The difference in SRR values for the most common diagnoses was small with variations ranging from 0–4% (Table 3.11). Differences between the two sets were also generally small in terms of diagnoses with the most deaths with differences of 0–10% (Table 3.12). The ranking of diagnoses was also similar with 17 of the top 20 most frequently occurring diagnoses common to both countries. Similarly, 19 of the 20 diagnoses with the most deaths were common to both countries. In both tables 3.11 and 3.12 the Australian SRRs were generally lower than the New Zealand SRRs.

There were only three diagnoses where the SRRs for Australia and New Zealand were significantly different, the difference was greater than 10%, and there were at least 10 cases from each country (Table 3.13).

Table 3.11: Comparison between Australia and NZ of proportions surviving (SRRs) for most common diagnoses

ICD Code	Description	Australia			New Zealand			Difference	
		Total	SRR (%)	95% CI (%)	Total	SRR (%)	95% CI (%)	SRR (%)	95% CI (%)
T81.4	Infection following a procedure, nec	25,704	99	(98, 99)	5,227	99	(99, 99)	1	(0, 1)
S52.50	Closed fracture of lower end of radius	21,835	100	(99, 100)	4,161	100	(100, 100)	0	(0, 0)
S06.00	Concussion without open intracranial wound	19,953	96	(95, 96)	6,800	97	(96, 97)	1	(1, 2)
T81.0	Haemorrhage and haematoma complicating a procedure, nec	17,170	99	(98, 99)	3,526	99	(98, 99)	0	(0, 1)
S61.0	Open wound of finger(s) without damage to nail	14,912	100	(100, 100)	4,362	100	(100, 100)	0	(0, 0)
T42.4	Benzodiazepines	12,942	99	(99, 100)	1,484	99	(99, 99)	0	(-1, 0)
S61.9	Open wound of wrist and hand part, part unspecified	11,398	100	(100, 100)	2,947	100	(99, 100)	0	(-1, 0)
T88.8	Other specified complications of surgical and medical care, nec	11,282	100	(99, 100)	4,077	100	(99, 100)	0	(0, 0)
S72.00	Closed fracture of neck of femur	11,262	90	(90, 91)	4,494	94	(93, 94)	3	(3, 4)
S01.0	Open wound of scalp	11,028	98	(98, 98)	2,792	98	(97, 98)	0	(-1, 0)
S52.60	Closed fracture of lower end of both ulna and radius	10,029	100	(100, 100)	3,264	100	(100, 100)	0	(0, 0)
S72.10	Closed fracture of trochanteric section of femur	8,391	90	(89, 90)	3,225	93	(92, 94)	4	(2, 5)

Table 3.12: Comparison between Australia and New Zealand of proportions surviving (SRRs) for diagnoses with most deaths

ICD Code	Description	Australia			New Zealand			Difference	
		Dead	SRR (%)	95% CI (%)	Dead	SRR (%)	95% CI (%)	SRR (%)	95% CI (%)
S72.00	Closed fracture of neck of femur	1,091	90	(90, 91)	281	94	(93, 94)	3	(3, 4)
S06.00	Concussion without open intracranial wound	861	96	(95, 96)	223	97	(96, 97)	1	(1, 2)
S72.10	Closed fracture of trochanteric section of femur	854	90	(89, 90)	215	93	(92, 94)	4	(2, 5)
S06.50	Traumatic subdural haemorrhage without open intracranial injury	656	74	(73, 76)	113	81	(77, 84)	7	(3, 10)
S06.60	Traumatic subarachnoid haemorrhage without open intracranial injury	418	63	(60, 66)	84	73	(67, 77)	10	(4, 15)
S02.10	Closed fracture of base of skull	411	89	(88, 90)	96	89	(87, 91)	1	(-2, 3)
S06.20	Diffuse brain injury without open intracranial injury	404	70	(68, 73)	93	73	(68, 77)	3	(-3, 8)
S22.40	Closed multiple fractures of ribs	398	95	(95, 96)	89	95	(94, 96)	0	(-1, 1)
T81.4	Infection following a procedure, nec	385	99	(98, 99)	48	99	(99, 99)	1	(0, 1)
S32.50	Closed fracture of pubis	346	94	(93, 95)	77	95	(94, 96)	1	(0, 3)
S06.10	Traumatic cerebral oedema without open intracranial wound	305	55	(52, 59)	77	61	(54, 67)	5	(-3, 13)

Table 3.13: Comparison between Australia and New Zealand of proportions surviving (SRRs) for diagnoses with significantly different SRRs of at least 10% and at least 10 separations in each country

ICD Code	Description	Australia			New Zealand			Difference	
		Separations	SRR (%)	95% CI (%)	Separations	SRR (%)	95% CI (%)	SRR (%)	95% CI (%)
S25.0	Injury to thoracic aorta	43	63	(48-76)	18	89	(67-97)	26	(1, 43)
S06.91	Intracranial injury, unspecified with open intracranial injury	66	83	(73-90)	22	59	(39-77)	-24	(-46, -4)
T71	Asphyxiation	408	77	(73-81)	128	91	(85-95)	14	(7, 20)

4 Discussion

In all of the fitted models discrimination was high with concordance values ranging from 0.885–0.910. These estimates are in line with concordance results reported for ICISS applied to ICD-9-CM data of 0.87–0.90 (Sacco, MacKenzie et al. 1999; Meredith, Evans et al. 2002; Stephenson, Langley et al. 2002) and somewhat higher than the only previous study of ICISS applied to ICD-10 where the reported concordance was 0.84 (Kim, Jung et al. 2000). Concordance was higher for mechanical trauma injuries, particularly head injuries, than for complications and other injuries.

Calibration results were also reasonably promising with all the calibration curves being reasonably close to linear. The calibration curves indicated ICISS underestimated probability of death somewhat for those with an ICISS score of less than approximately 0.6. The calibration problems may be related to an assumption used in the ICISS method. By multiplying the SRRs together to arrive at an ICISS score the method assumes the survival probabilities are independent. This assumption will be violated by groups of diagnoses that are often coded together. A specific example is open wound communicating with fracture codes. These can only occur where an associated fracture is present. This will lead to underestimated survival probabilities.

Overall, ICISS performed better when applied to the Australian separations than the New Zealand separations. This was expected given that the New Zealand data set was so much smaller than the Australian set. ICISS worked surprisingly well for the New Zealand separations given the relatively small number of deaths. The number of separations and deaths in the Australian data set was higher than has been used previously in many of the studies of ICISS.

Both the New Zealand and Australian data sets were limited by only including in hospital deaths. Some deaths occurring outside hospital were included in the previous study of ICISS in New Zealand (Stephenson, Langley et al. 2002) but more complete data on deaths among the cases studied was not available for the present study period for either country. As discussed elsewhere, adding deaths occurring outside hospital would enhance the value of the resulting severity estimates (Meredith, Evans et al. 2002).

A further limitation in regard to the Australian data set relates to an inability to identify individuals who underwent more than one separation within the study period. This can result in an overestimation of cases in relation to the number of deaths. This limitation was partially dealt with by excluding episodes that ended with separation to an acute care hospital or with a statistical discharge (i.e. where a patient stops being treated for one complaint and starts another treatment regime without actually being discharged from hospital).

A similar limitation is the inability to differentiate between individuals who are admitted to hospital for the treatment of injury in both the acute and rehabilitative phases consequently resulting in a series of one or more readmissions for the same injury. This limitation could only be overcome by introducing a process of person-based linkage that allows all subsequent readmissions of a particular individual to be linked to the original admission. A system to do this already exists in New Zealand and another system is in place in Western Australia. The introduction of such a system in the rest of Australia would significantly improve the accuracy of estimates for person-based injury incidence.

Comparison of the SRRs suggested the Australian and New Zealand separations were very similar. This was reflected in the only slight drop in the performance of ICISS when SRRs from the other country replaced 'local' SRRs. Previous studies have suggested ICISS may not be well calibrated when SRRs are obtained from a separate data set (Sacco, MacKenzie et al. 1999). This study suggests there will not be a substantial drop in calibration if the data set used to derive the SRRs is similar to the data set for which ICISS is calculated.

As expected the extra detail in the coding of ICD-10-AM resulted in better ICISS performance than was seen for ICD-10. However, the difference was relatively small and in an absolute sense ICISS also appears to be a good estimate of probability of death for injury hospital separations data coded to ICD-10. An investigation of the reasons for the relatively small difference between ICD-10 and ICD-10-AM has been included as Appendix A2. The main reason for the lack of a difference appears to be that in many cases, the subdivided ICD-10-AM codes created from a single ICD-10 code had similar SRRs. The results reported here are likely to be a conservative estimate of the performance of ICISS when applied to ICD-10 as mapped ICD-10 codes were used. The assumptions that had to be made in order to produce the map are likely to have generated more non-specific codes than would have been the case had the data been coded directly in ICD-10.

Age has been included in the fitted models reported here and as such the analyses do not assess the performance of ICISS alone. Age is acting as a proxy for resilience and, to some extent, comorbidity. The number of diagnoses for survivors and deaths suggests those who die have more non-injury diagnoses. A more direct approach may be to extend the ICISS methodology to incorporate non-injury diagnoses. The recently developed severity measure HARM (Harborview Assessment for Risk of Mortality) included some comorbidities (West, Rivara et al. 2000). One approach would be to calculate SRRs for each chapter of the non-injury diagnoses.

As noted by Meredith et al. the ICISS score is unlikely to be linear in the log odds as assumed in constructing the logistic regression model. In fact, by definition ICISS should be linearly related to the outcome, probability of death, since ICISS is an estimate of probability of survival. This problem will only affect the calibration but not the discrimination results (Meredith, Evans et al. 2002; Osler, Rogers et al. 2002).

In conclusion, ICISS is a reasonable way to estimate severity for databases using ICD-10 or ICD-10-AM. It is also likely to work well for other variants of ICD-10. These results suggest development of a further version of ICDMAP for use with ICD-10 data is unnecessary, as it is unlikely to result in significantly improved severity estimates.

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Appendices

Appendix A1: ICD-10-AM (1st Edition) codes and corresponding SRR's

Table A1.1: ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S00.00	Superficial injury of scalp, unspecified	1.0000	1.0000
S00.01	Superficial injury of scalp, abrasion	0.9831	1.0000
S00.02	Superficial injury of scalp, blister	1.0000	..
S00.03	Superficial injury of scalp, insect bite	1.0000	..
S00.04	Superficial injury of scalp, superficial foreign body	1.0000	1.0000
S00.05	Superficial injury of scalp, contusion	0.9782	0.9763
S00.08	Superficial injury of scalp, other	1.0000	1.0000
S00.1	Contusion of eyelid and periocular area	0.9760	0.9845
S00.20	Other superficial injuries of eyelid and periocular area, unspecified	1.0000	1.0000
S00.21	Other superficial injuries of eyelid and periocular area, abrasion	0.9953	1.0000
S00.22	Other superficial injuries of eyelid and periocular area, blister	1.0000	..
S00.23	Other superficial injuries of eyelid and periocular area, insect bite	1.0000	..
S00.24	Other superficial injuries of eyelid and periocular area, superficial foreign body	1.0000	..
S00.28	Other superficial injuries of eyelid and periocular area, other	1.0000	1.0000
S00.30	Superficial injury of nose, unspecified	1.0000	1.0000
S00.31	Superficial injury of nose, abrasion	0.9864	1.0000
S00.32	Superficial injury of nose, blister	1.0000	..
S00.33	Superficial injury of nose, insect bite	..	..
S00.34	Superficial injury of nose, superficial foreign body	1.0000	..
S00.35	Superficial injury of nose, contusion	0.9944	0.9913
S00.38	Superficial injury of nose, other	1.0000	1.0000
S00.40	Superficial injury of ear, unspecified	1.0000	1.0000
S00.41	Superficial injury of ear, abrasion	0.9903	1.0000
S00.42	Superficial injury of ear, blister	1.0000	..
S00.43	Superficial injury of ear, insect bite	1.0000	..
S00.44	Superficial injury of ear, superficial foreign body	1.0000	1.0000
S00.45	Superficial injury of ear, contusion	0.9946	1.0000
S00.48	Superficial injury of ear, other	1.0000	1.0000
S00.50	Superficial injury of lip and oral cavity, unspecified	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S00.51	Superficial injury of lip and oral cavity, abrasion	0.9958	0.9825
S00.52	Superficial injury of lip and oral cavity, blister	1.0000	..
S00.53	Superficial injury of lip and oral cavity, insect bite	1.0000	1.0000
S00.54	Superficial injury of lip and oral cavity, foreign superficial body	1.0000	1.0000
S00.55	Superficial injury of lip and oral cavity, contusion	0.9808	1.0000
S00.58	Superficial injury of lip and oral cavity, other	0.9762	1.0000
S00.7	Multiple superficial injuries of head	0.9932	0.9444
S00.80	Superficial injury of other parts of head, unspecified	0.9836	1.0000
S00.81	Superficial injury of other parts of head, abrasion	0.9903	0.9898
S00.82	Superficial injury of other parts of head, blister	1.0000	..
S00.83	Superficial injury of other parts of head, insect bite	0.9697	1.0000
S00.84	Superficial injury of other parts of head, foreign superficial body	1.0000	1.0000
S00.85	Superficial injury of other parts of head, contusion	0.9875	0.9872
S00.88	Superficial injury of other parts of head, other	0.9955	1.0000
S00.90	Superficial injury of head, part unspecified, unspecified	0.9861	0.8750
S00.91	Superficial injury of head, part unspecified, abrasion	0.9814	0.9677
S00.92	Superficial injury of head, part unspecified, blister	..	..
S00.93	Superficial injury of head, part unspecified, insect bite	..	..
S00.94	Superficial injury of head, part unspecified, superficial foreign body	..	..
S00.95	Superficial injury of head, part unspecified, contusion	0.9861	0.9927
S00.98	Superficial injury of head, part unspecified, other	0.9730	1.0000
S01.0	Open wound of scalp	0.9783	0.9774
S01.1	Open wound of eyelid and periocular area	0.9914	0.9906
S01.20	Open wound of nose, part unspecified	0.9821	1.0000
S01.21	Open wound of nose, external skin	0.9907	0.9949
S01.22	Open wound of nares (nostril)	1.0000	1.0000
S01.23	Open wound of nasal septum	0.9914	1.0000
S01.29	Open wound of other and multiple parts of nose	0.9864	0.9730
S01.30	Open wound of external ear, part unspecified	0.9852	0.9918
S01.31	Open wound of auricle	0.9900	0.9938
S01.33	Open wound of tragus	1.0000	1.0000
S01.34	Open wound of external auditory meatus	1.0000	1.0000
S01.35	Open wound of eustachian tube	..	..
S01.36	Open wound of ossicles	1.0000	..
S01.37	Open wound of eardrum	1.0000	1.0000
S01.38	Open wound of inner ear	1.0000	1.0000
S01.39	Open wound of other and multiple parts of ear and auditory structures	1.0000	0.8182

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S01.41	Open wound of cheek	0.9906	0.9828
S01.42	Open wound of maxillary region	1.0000	1.0000
S01.43	Open wound of mandibular region	0.9836	0.9821
S01.49	Open wound of other and multiple sites of cheek and temporomandibular area	0.9919	1.0000
S01.50	Open wound of mouth, part unspecified	0.9858	1.0000
S01.51	Open wound of lip	0.9928	0.9892
S01.52	Open wound of buccal mucosa	0.9916	0.9740
S01.53	Open wound of gum (alveolar process)	0.9960	1.0000
S01.54	Open wound of tongue and floor of mouth	0.9958	0.9940
S01.55	Open wound of palate	0.9880	0.9697
S01.59	Open wound of other and multiple parts of lip and oral cavity	1.0000	1.0000
S01.7	Multiple open wounds of head	0.9782	0.9732
S01.80	Unspecified open wound of other parts of head	0.9837	0.9829
S01.81	Open wound (of any part of head) communicating with a fracture	0.9573	0.9577
S01.82	Open wound (of any part of head) communicating with a dislocation	1.0000	1.0000
S01.83	Open wound (of any part of head) communicating with an intracranial injury	0.7749	0.7394
S10.86	Superficial injury of other parts of neck	..	..
S10.87	Superficial injury of other parts of neck	..	..
S01.9	Open wound of head, part unspecified	0.9697	0.9674
S02.0	Fracture of vault of skull	0.9049	0.9192
S02.1	Fracture of base of skull	0.8858	0.8916
S02.2	Fracture of nasal bones	0.9849	0.9812
S02.3	Fracture of orbital floor	0.9926	0.9879
S02.4	Fracture of malar and maxillary bones	0.9806	0.9584
S02.5	Fracture of tooth	0.9940	0.9889
S02.60	Fracture of mandible, part unspecified	0.9677	0.9394
S02.61	Fracture of condylar process	0.9927	0.9886
S02.62	Subcondylar fracture	1.0000	1.0000
S02.63	Fracture of coronoid process	0.9857	1.0000
S02.64	Fracture of ramus, unspecified	0.9874	1.0000
S02.65	Fracture of angle of jaw	0.9983	0.9981
S02.66	Fracture of symphysis of body	0.9986	0.9971
S02.67	Fracture of alveolar border of body	1.0000	1.0000
S02.68	Fracture of mandible body, other and unspecified parts	0.9972	0.9885
S02.69	Fracture of mandible, multiple sites	0.9942	1.0000
S02.7	Multiple fractures involving skull and facial bones	0.6456	0.6154

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S02.8	Fractures of other skull and facial bones	0.9601	0.9660
S02.9	Fracture of skull and facial bones, part unspecified	0.7788	0.6721
S03.0	Dislocation of jaw	0.9799	0.9744
S03.1	Dislocation of septal cartilage of nose	1.0000	1.0000
S03.2	Dislocation of tooth	1.0000	1.0000
S03.3	Dislocation of other and unspecified parts of head	0.9333	1.0000
S03.4	Sprain and strain of jaw	1.0000	1.0000
S03.5	Sprain and strain of joints and ligaments of other and unspecified parts of head	0.8571	..
S04.0	Injury of optic nerve and pathways	0.9692	0.9333
S04.1	Injury of oculomotor nerve	1.0000	1.0000
S04.2	Injury of trochlear nerve	1.0000	1.0000
S04.3	Injury of trigeminal nerve	1.0000	1.0000
S04.4	Injury of abducent nerve	1.0000	1.0000
S04.5	Injury of facial nerve	1.0000	1.0000
S04.6	Injury of acoustic nerve	1.0000	1.0000
S04.7	Injury of accessory nerve	1.0000	..
S04.8	Injury of other cranial nerves	1.0000	1.0000
S04.9	Injury of unspecified cranial nerve	1.0000	0.9545
S05.0	Injury of conjunctiva and corneal abrasion without mention of foreign body	0.9949	0.9828
S05.1	Contusion of eyeball and orbital tissues	0.9856	0.9948
S05.2	Ocular laceration and rupture with prolapse or loss of intraocular tissue	0.9978	1.0000
S05.3	Ocular laceration without prolapse or loss of intraocular tissue	0.9935	0.9890
S05.4	Penetrating wound of orbit with or without foreign body	0.9949	0.9667
S05.5	Penetrating wound of eyeball with foreign body	1.0000	1.0000
S05.6	Penetrating wound of eyeball without foreign body	0.9937	1.0000
S05.7	Avulsion of eye	0.8857	1.0000
S05.8	Other injuries of eye and orbit	0.9769	0.9940
S05.9	Injury of eye and orbit, part unspecified	0.9794	0.9843
S06.00	Concussion	0.9975	0.9971
S06.01	Loss of consciousness of unspecified duration	0.9471	0.9546
S06.02	Loss of consciousness of brief duration (less than 30 minutes)	0.9902	0.9940
S06.03	Loss of consciousness of moderate duration (30 minutes to 24 hours)	0.8482	0.8323
S06.04	Loss of consciousness of prolonged duration (more than 24 hours), with return to pre-existing conscious level	0.8447	0.9800
S06.05	Loss of consciousness of prolonged duration (more than 24 hours), without return to pre-existing conscious level	0.0855	0.2250

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S06.1	Traumatic cerebral oedema	0.5530	0.6030
S06.20	Diffuse cerebral and cerebellar brain injury, unspecified	0.3810	0.7600
S06.21	Diffuse cerebral contusions	0.7351	0.7273
S06.22	Diffuse cerebellar contusions	0.8659	0.8333
S06.23	Multiple intracerebral and cerebellar haematomas	0.6955	0.7104
S06.28	Other diffuse cerebral and cerebellar injury	0.4962	0.6400
S06.30	Focal cerebral and cerebellar injury, unspecified	1.0000	1.0000
S06.31	Focal cerebral contusion	0.9286	0.9416
S06.32	Focal cerebellar contusion	0.9452	0.8889
S06.33	Focal cerebral haematoma	0.8839	0.8774
S06.34	Focal cerebellar haematoma	0.6667	0.6667
S06.38	Other focal cerebral and cerebellar injury	0.5500	1.0000
S06.4	Epidural haemorrhage	0.9127	0.9040
S06.5	Traumatic subdural haemorrhage	0.7436	0.8073
S06.6	Traumatic subarachnoid haemorrhage	0.6269	0.7147
S06.8	Other intracranial injuries	0.8027	0.8194
S06.9	Intracranial injury, unspecified	0.8815	0.8625
S07.0	Crushing injury of face	0.7143	1.0000
S07.1	Crushing injury of skull	0.5000	..
S07.8	Crushing injury of other parts of head	0.5000	..
S07.9	Crushing injury of head, part unspecified	0.5000	1.0000
S08.0	Avulsion of scalp	1.0000	1.0000
S08.1	Traumatic amputation of ear	0.9770	0.9444
S08.8	Traumatic amputation of other parts of head	1.0000	1.0000
S08.9	Traumatic amputation of unspecified part of head	1.0000	..
S09.0	Injury of blood vessels of head, not elsewhere classified	0.9752	0.9516
S09.1	Injury of muscle and tendon of head	1.0000	1.0000
S09.2	Traumatic rupture of ear drum	0.9954	1.0000
S09.7	Multiple injuries of head	0.7586	1.0000
S09.8	Other specified injuries of head	0.9801	0.9891
S09.9	Unspecified injury of head	0.9898	0.9952
S10.0	Contusion of throat	1.0000	0.9091
S10.10	Other and unspecified superficial injuries of throat, unspecified	1.0000	1.0000
S10.11	Other and unspecified superficial injuries of throat, abrasion	1.0000	1.0000
S10.12	Other and unspecified superficial injuries of throat, blister	..	1.0000
S10.13	Other and unspecified superficial injuries of throat, insect bite	1.0000	..
S10.14	Other and unspecified superficial injuries of throat, superficial foreign body	1.0000	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S10.18	Other and unspecified superficial injuries of throat, other	1.0000	1.0000
S10.7	Multiple superficial injuries of neck	0.9737	1.0000
S10.80	Superficial injury of other parts of neck, unspecified	1.0000	1.0000
S10.81	Superficial injury of other parts of neck, abrasion	0.9881	1.0000
S10.82	Superficial injury of other parts of neck, blister	1.0000	..
S10.83	Superficial injury of other parts of neck, insect bite	1.0000	1.0000
S10.84	Superficial injury of other parts of neck, superficial foreign body	1.0000	..
S10.85	Superficial injury of other parts of neck, contusion	0.9878	1.0000
S10.88	Superficial injury of other parts of neck, other	1.0000	1.0000
S10.90	Superficial injury of neck, part unspecified, unspecified	1.0000	1.0000
S10.91	Superficial injury of neck, part unspecified, abrasion	0.9832	1.0000
S10.92	Superficial injury of neck, part unspecified, blister	1.0000	..
S10.93	Superficial injury of neck, part unspecified, insect bite	1.0000	1.0000
S10.94	Superficial injury of neck, part unspecified, superficial foreign body	1.0000	1.0000
S10.95	Superficial injury of neck, part unspecified, contusion	0.9868	0.9874
S10.98	Superficial injury of neck, part unspecified, other	1.0000	0.9000
S11.01	Open wound of larynx	0.9375	1.0000
S11.02	Open wound of trachea	0.9394	0.8000
S11.1	Open wound involving thyroid gland	0.9000	1.0000
S11.21	Open wound of pharynx	0.9815	0.9524
S11.22	Open wound of cervical oesophagus	0.9677	1.0000
S11.7	Multiple open wounds of neck	0.9894	1.0000
S11.80	Unspecified open wound of other parts of neck	0.9774	0.9897
S11.81	Open wound (of any part of neck) communicating with a fracture	0.7778	1.0000
S11.82	Open wound (of any part of neck) communicating with a dislocation	..	..
S11.9	Open wound of neck, part unspecified	0.9714	0.9574
S12.0	Fracture of first cervical vertebra	0.8638	0.8962
S12.1	Fracture of second cervical vertebra	0.8443	0.9249
S12.21	Fracture of third cervical vertebra	0.8968	0.9020
S12.22	Fracture of fourth cervical vertebra	0.9468	0.9265
S12.23	Fracture of fifth cervical vertebra	0.9663	0.9908
S12.24	Fracture of sixth cervical vertebra	0.9409	0.9412
S12.25	Fracture of seventh cervical vertebra	0.9537	0.9857
S12.7	Multiple fractures of cervical spine	0.8592	0.9412
S12.8	Fracture of other parts of neck	0.9341	1.0000
S12.9	Fracture of neck, part unspecified	0.8095	0.8824
S13.0	Traumatic rupture of cervical intervertebral disc	0.9500	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S13.10	Dislocation of cervical vertebra, level unspecified	0.7500	1.0000
S13.11	Dislocation of C1/C2 cervical vertebrae	0.7658	0.9024
S13.12	Dislocation of C2/C3 cervical vertebrae	0.9153	0.8889
S13.13	Dislocation of C3/C4 cervical vertebrae	0.9423	0.9412
S13.14	Dislocation of C4/C5 cervical vertebrae	0.9383	1.0000
S13.15	Dislocation of C5/C6 cervical vertebrae	0.9641	0.9388
S13.16	Dislocation of C6/C7 cervical vertebrae	0.9612	0.9672
S13.17	Dislocation of C7/T1 cervicothoracic vertebrae	1.0000	0.8571
S13.18	Other dislocation of cervical vertebrae	0.9167	1.0000
S13.2	Dislocation of other and unspecified parts of neck	1.0000	1.0000
S13.3	Multiple dislocations of neck	1.0000	1.0000
S13.4	Sprain and strain of cervical spine	0.9970	1.0000
S13.5	Sprain and strain of thyroid region	1.0000	..
S13.6	Sprain and strain of joints and ligaments of other and unspecified parts of neck	0.9978	1.0000
S14.0	Concussion and oedema of cervical spinal cord	0.9118	0.8750
S14.10	Injury of cervical spinal cord, unspecified	0.9211	0.8831
S14.11	Complete lesion of cervical spinal cord	0.7091	0.6667
S14.12	Central cord syndrome (incomplete cord injury) of cervical spinal cord	0.8710	0.9286
S14.13	Other incomplete cord syndrome of cervical spinal cord	0.9733	0.8636
S14.2	Injury of nerve root of cervical spine	1.0000	0.9333
S14.3	Injury of brachial plexus	0.9881	0.9481
S14.4	Injury of peripheral nerves of neck	1.0000	..
S14.5	Injury of cervical sympathetic nerves	1.0000	1.0000
S14.6	Injury of other and unspecified nerves of neck	1.0000	1.0000
S14.70	Functional spinal cord injury, cervical level unspecified	0.8750	0.9130
S14.71	Functional spinal cord injury, C1	0.8125	0.6667
S14.72	Functional spinal cord injury, C2	0.6818	0.7273
S14.73	Functional spinal cord injury, C3	0.9524	0.8750
S14.74	Functional spinal cord injury, C4	0.9020	0.8571
S14.75	Functional spinal cord injury, C5	0.9028	0.9474
S14.76	Functional spinal cord injury, C6	0.9796	0.9545
S14.77	Functional spinal cord injury, C7	1.0000	1.0000
S14.78	Functional spinal cord injury, C8	1.0000	1.0000
S15.00	Injury of carotid artery, unspecified	0.8000	0.8333
S15.01	Injury of common carotid artery	0.8571	0.5000
S15.02	Injury of external carotid artery	0.8000	1.0000
S15.03	Injury of internal carotid artery	0.6800	0.6667

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S15.1	Injury of vertebral artery	0.9091	0.7500
S15.2	Injury of external jugular vein	0.8889	1.0000
S15.3	Injury of internal jugular vein	0.9000	0.5000
S15.7	Injury of multiple blood vessels at neck level	0.8889	1.0000
S15.8	Injury of other blood vessels at neck level	0.8148	1.0000
S15.9	Injury of unspecified blood vessel at neck level	0.9333	1.0000
S16	Injury of muscle and tendon at neck level	1.0000	1.0000
S17.0	Crushing injury of larynx and trachea	1.0000	..
S17.8	Crushing injury of other parts of neck	1.0000	..
S17.9	Crushing injury of neck, part unspecified	1.0000	1.0000
S18	Traumatic amputation at neck level	..	..
S19.7	Multiple injuries of neck	1.0000	1.0000
S19.8	Other specified injuries of neck	0.9862	1.0000
S19.9	Unspecified injury of neck	0.9964	0.9968
S20.0	Contusion of breast	0.9802	0.9767
S20.10	Other and unspecified superficial injuries of breast, unspecified	1.0000	..
S20.11	Other and unspecified superficial injuries of breast, abrasion	1.0000	1.0000
S20.12	Other and unspecified superficial injuries of breast, blister	1.0000	1.0000
S20.13	Other and unspecified superficial injuries of breast, insect bite	1.0000	..
S20.14	Other and unspecified superficial injuries of breast, superficial foreign body	..	..
S20.18	Other and unspecified superficial injuries of breast, other	1.0000	1.0000
S20.2	Contusion of thorax	0.9845	0.9933
S20.30	Other superficial injuries of front wall of thorax, unspecified	1.0000	1.0000
S20.31	Other superficial injuries of front wall of thorax, abrasion	0.9816	1.0000
S20.32	Other superficial injuries of front wall of thorax, blister	1.0000	1.0000
S20.33	Other superficial injuries of front wall of thorax, insect bite	1.0000	..
S20.34	Other superficial injuries of front wall of thorax, superficial foreign body	1.0000	1.0000
S20.38	Other superficial injuries of front wall of thorax, other	0.9938	1.0000
S20.40	Other superficial injuries of back wall of thorax, unspecified	1.0000	1.0000
S20.41	Other superficial injuries of back wall of thorax, abrasion	0.9935	1.0000
S20.42	Other superficial injuries of back wall of thorax, blister	1.0000	..
S20.43	Other superficial injuries of back wall of thorax, insect bite	..	..
S20.44	Other superficial injuries of back wall of thorax, superficial foreign body	..	..
S20.48	Other superficial injuries of back wall of thorax, other	1.0000	1.0000
S20.7	Multiple superficial injuries of thorax	0.9636	1.0000
S20.80	Superficial injury of other and unspecified parts of thorax, unspecified	0.9847	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S20.81	Superficial injury of other and unspecified parts of thorax, abrasion	0.9833	0.9500
S20.82	Superficial injury of other and unspecified parts of thorax, blister	..	..
S20.83	Superficial injury of other and unspecified parts of thorax, insect bite	1.0000	1.0000
S20.84	Superficial injury of other and unspecified parts of thorax, superficial foreign body	1.0000	..
S20.85	Superficial injury of other and unspecified parts of thorax, contusion	0.9864	0.9545
S20.88	Superficial injury of other and unspecified parts of thorax, other	0.9910	1.0000
S21.0	Open wound of breast	1.0000	1.0000
S21.1	Open wound of front wall of thorax	0.9750	0.9691
S21.2	Open wound of back wall of thorax	0.9902	0.9767
S21.7	Multiple open wounds of thoracic wall	1.0000	1.0000
S21.80	Unspecified open wound of other parts of thorax	1.0000	1.0000
S21.81	Open wound (of any part of thorax) communicating with a fracture	0.8182	0.8571
S21.82	Open wound (of any part of thorax) communicating with a dislocation	..	..
S21.83	Open wound (of any part of thorax) communicating with an intrathoracic injury	0.9206	0.9406
S21.9	Open wound of thorax, part unspecified	0.9463	1.0000
S22.00	Fracture of thoracic vertebra, level unspecified	0.9643	0.8974
S22.01	Fracture of thoracic vertebra, T1 and T2 level	0.9192	0.9375
S22.02	Fracture of thoracic vertebra, T3 and T4 level	0.9615	0.9688
S22.03	Fracture of thoracic vertebra, T5 and T6 level	0.9762	0.9790
S22.04	Fracture of thoracic vertebra, T7 and T8 level	0.9703	0.9783
S22.05	Fracture of thoracic vertebra, T9 and T10 level	0.9673	0.9680
S22.06	Fracture of thoracic vertebra, T11 and T12 level	0.9787	0.9804
S22.1	Multiple fractures of thoracic spine	0.9634	0.9762
S22.2	Fracture of sternum	0.9771	0.9863
S22.31	Fracture of first rib	0.9292	0.9123
S22.32	Fracture of one rib, other than first rib	0.9741	0.9689
S22.40	Multiple rib fractures, unspecified	0.9067	0.9141
S22.41	Multiple rib fractures, involving first rib	0.9507	0.8636
S22.42	Multiple rib fractures, involving two ribs	0.9780	0.9742
S22.43	Multiple rib fractures, involving three ribs	0.9750	0.9783
S22.44	Multiple rib fractures, involving four or more ribs	0.9406	0.9502
S22.5	Flail chest	0.8787	0.8500
S22.8	Fracture of other parts of bony thorax	1.0000	1.0000
S22.9	Fracture of bony thorax, part unspecified	1.0000	..
S23.0	Traumatic rupture of thoracic intervertebral disc	1.0000	1.0000
S23.10	Dislocation of thoracic vertebra, level unspecified	1.0000	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S23.11	Dislocation of T1/T2 and T2/T3 thoracic vertebrae	1.0000	0.3333
S23.12	Dislocation of T3/T4 and T4/T5 thoracic vertebrae	0.8000	1.0000
S23.13	Dislocation of T5/T6 and T6/T7 thoracic vertebrae	0.9333	1.0000
S23.14	Dislocation of T7/T8 and T8/T9 thoracic vertebrae	0.8571	1.0000
S23.15	Dislocation of T9/T10 and T10/T11 thoracic vertebrae	0.7143	0.8000
S23.16	Dislocation of T11/T12 thoracic vertebrae	1.0000	0.8000
S23.17	Dislocation of T12/L1 thoracolumbar vertebrae	0.9091	1.0000
S23.2	Dislocation of other and unspecified parts of thorax	0.9508	1.0000
S23.3	Sprain and strain of thoracic spine	1.0000	1.0000
S23.4	Sprain and strain of ribs and sternum	1.0000	1.0000
S23.5	Sprain and strain of other and unspecified parts of thorax	1.0000	1.0000
S24.0	Concussion and oedema of thoracic spinal cord	0.9500	1.0000
S24.10	Injury of thoracic spinal cord unspecified	0.9455	0.8788
S24.11	Complete lesion of thoracic spinal cord	0.9111	0.8421
S24.12	Incomplete cord syndrome of thoracic spinal cord	1.0000	1.0000
S24.2	Injury of nerve root of thoracic spine	1.0000	1.0000
S24.3	Injury of peripheral nerves of thorax	1.0000	1.0000
S24.4	Injury of thoracic sympathetic nerves	1.0000	..
S24.5	Injury of other nerves of thorax	1.0000	1.0000
S24.6	Injury of unspecified nerve of thorax	1.0000	..
S24.70	Functional spinal cord injury, thoracic level unspecified	0.9167	0.5000
S24.71	Functional spinal cord injury, T1	1.0000	0.7143
S24.72	Functional spinal cord injury, T2/T3	0.8000	0.6667
S24.73	Functional spinal cord injury, T4/T5	0.8947	0.8000
S24.74	Functional spinal cord injury, T6/T7	0.8929	0.8750
S24.75	Functional spinal cord injury, T8/T9	0.8421	0.8333
S24.76	Functional spinal cord injury, T10/T11	0.9091	1.0000
S24.77	Functional spinal cord injury, T12	1.0000	0.9412
S25.0	Injury of thoracic aorta	0.6279	0.8889
S25.1	Injury of innominate or subclavian artery	0.8571	0.7500
S25.2	Injury of superior vena cava	0.6000	0.5000
S25.3	Injury of innominate or subclavian vein	0.6667	..
S25.4	Injury of pulmonary blood vessels	0.4444	0.0000
S25.5	Injury of intercostal blood vessels	0.9286	1.0000
S25.7	Injury of multiple blood vessels of thorax	0.0000	1.0000
S25.8	Injury of other blood vessels of thorax	0.9412	1.0000
S25.9	Injury of unspecified blood vessel of thorax	0.7500	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S26.0	Traumatic haemopericardium	1.0000	1.0000
S26.81	Contusion of heart	0.9144	0.9412
S26.82	Laceration of heart without penetration into heart chamber	0.6842	1.0000
S26.83	Laceration of heart with penetration into heart chamber	0.7826	0.5000
S26.88	Other injuries of heart	0.6667	0.8571
S26.9	Injury of heart, unspecified	0.7857	0.5000
S27.0	Traumatic pneumothorax	0.9533	0.9485
S27.1	Traumatic haemothorax	0.8840	0.9099
S27.2	Traumatic haemopneumothorax	0.8939	0.9328
S27.31	Contusion and haematoma of lung	0.8934	0.9133
S27.32	Laceration of lung	0.6211	0.7600
S27.38	Other and unspecified injuries of lung	0.8936	0.7333
S27.4	Injury of bronchus	0.9000	0.3333
S27.5	Injury of thoracic trachea	1.0000	..
S27.6	Injury of pleura	0.8788	1.0000
S27.7	Multiple injuries of intrathoracic organs	0.3750	0.0000
S27.81	Injury of diaphragm	0.8367	0.8750
S27.82	Injury of lymphatic thoracic duct	1.0000	..
S27.83	Injury of oesophagus (thoracic part)	0.9841	0.9706
S27.84	Injury of thymus gland	0.6667	..
S27.88	Injury of other specified intrathoracic organs and structures	0.9077	0.9200
S27.9	Injury of unspecified intrathoracic organ	0.7708	0.7000
S28.0	Crushed chest	0.8750	1.0000
S28.1	Traumatic amputation of part of thorax	..	..
S29.0	Injury of muscle and tendon at thorax level	1.0000	1.0000
S29.7	Multiple injuries of thorax	1.0000	..
S29.8	Other specified injuries of thorax	0.9870	1.0000
S29.9	Unspecified injury of thorax	0.9898	0.9882
S30.0	Contusion of lower back and pelvis	0.9893	0.9873
S30.1	Contusion of abdominal wall	0.9825	0.9935
S30.2	Contusion of external genital organs	0.9952	0.9867
S30.7	Multiple superficial injuries of abdomen, lower back and pelvis	0.9730	0.9565
S30.80	Other superficial injuries of abdomen, lower back and pelvis, unspecified	0.9906	1.0000
S30.81	Other superficial injuries of abdomen, lower back and pelvis, abrasion	0.9873	0.9759
S30.82	Other superficial injuries of abdomen, lower back and pelvis, blister	1.0000	0.6667
S30.83	Other superficial injuries of abdomen, lower back and pelvis, insect bite	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S30.84	Other superficial injuries of abdomen, lower back and pelvis, superficial foreign body	1.0000	1.0000
S30.85	Other superficial injuries of abdomen, lower back and pelvis, contusion	1.0000	1.0000
S30.88	Other superficial injuries of abdomen, lower back and pelvis, other	0.9810	1.0000
S30.90	Superficial injury of abdomen, lower back and pelvis, part unspecified, unspecified site	1.0000	1.0000
S30.91	Superficial injury of abdomen, lower back and pelvis, part unspecified, abrasion	0.9851	1.0000
S30.92	Superficial injury of abdomen, lower back and pelvis, part unspecified, blister	1.0000	1.0000
S30.93	Superficial injury of abdomen, lower back and pelvis, part unspecified, insect bite	1.0000	1.0000
S30.94	Superficial injury of abdomen, lower back and pelvis, part unspecified, superficial foreign body	1.0000	1.0000
S30.95	Superficial injury of abdomen, lower back and pelvis, part unspecified, contusion	1.0000	1.0000
S30.98	Superficial injury of abdomen, lower back and pelvis, part unspecified, other	1.0000	1.0000
S31.0	Open wound of lower back and pelvis	0.9851	1.0000
S31.1	Open wound of abdominal wall	0.9920	0.9895
S31.2	Open wound of penis	0.9947	1.0000
S31.3	Open wound of scrotum and testes	0.9744	1.0000
S31.4	Open wound of vagina and vulva	0.9951	1.0000
S31.5	Open wound of other and unspecified external genital organs	1.0000	..
S31.7	Multiple open wounds of abdomen, lower back and pelvis	1.0000	1.0000
S31.80	Open wound of other and unspecified parts of abdomen	0.9874	0.9804
S31.81	Open wound (of any part of lower back and pelvis) communicating with a fracture	0.7882	0.9024
S31.82	Open wound (of any part of lower back and pelvis) communicating with a dislocation	0.5000	..
S31.83	Open wound (of any part of abdomen) communicating with an intra-abdominal injury	0.9473	0.9419
S32.00	Fracture of lumbar vertebra, level unspecified	0.9688	0.9118
S32.01	Fracture of lumbar vertebra, L1 level	0.9844	0.9881
S32.02	Fracture of lumbar vertebra, L2 level	0.9857	0.9813
S32.03	Fracture of lumbar vertebra, L3 level	0.9752	0.9829
S32.04	Fracture of lumbar vertebra, L4 level	0.9635	0.9688
S32.05	Fracture of lumbar vertebra, L5 level	0.9713	0.9688
S32.1	Fracture of sacrum	0.9543	0.9615
S32.2	Fracture of coccyx	0.9800	1.0000
S32.3	Fracture of ilium	0.9339	0.9510
S32.4	Fracture of acetabulum	0.9350	0.9689

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S32.5	Fracture of pubis	0.9395	0.9542
S32.7	Multiple fractures of lumbar spine with pelvis	0.9771	0.9535
S32.81	Fracture of ischium	0.8983	0.9756
S32.82	Fracture of lumbosacral spine, part unspecified	0.9600	1.0000
S32.83	Fracture of pelvis, part unspecified	0.8859	0.7703
S32.89	Other and multiple pelvic fractures	0.8708	0.9375
S33.0	Traumatic rupture of lumbar intervertebral disc	1.0000	1.0000
S33.10	Dislocation of lumbar vertebra, level unspecified	1.0000	1.0000
S33.11	Dislocation of L1/L2 lumbar vertebrae	0.9655	1.0000
S33.12	Dislocation of L2/L3 lumbar vertebrae	1.0000	1.0000
S33.13	Dislocation of L3/L4 lumbar vertebrae	1.0000	1.0000
S33.14	Dislocation of L4/L5 lumbar vertebrae	1.0000	1.0000
S33.15	Dislocation of L5/S1 lumbosacral vertebrae	1.0000	1.0000
S33.2	Dislocation of sacroiliac and sacrococcygeal joint	0.9266	0.9362
S33.3	Dislocation of other and unspecified parts of lumbar spine and pelvis	0.9512	0.9615
S33.4	Traumatic rupture of symphysis pubis	1.0000	1.0000
S33.50	Sprain and strain of lumbar spine, unspecified	0.9952	1.0000
S33.51	Sprain and strain of lumbosacral (joint) (ligament)	1.0000	1.0000
S33.6	Sprain and strain of sacroiliac joint	1.0000	1.0000
S33.7	Sprain and strain of other and unspecified parts of lumbar spine and pelvis	1.0000	0.9821
S34.0	Concussion and oedema of lumbar spinal cord (conus medullaris)	0.9375	1.0000
S34.1	Other injury of lumbar spinal cord (conus medullaris)	0.9615	0.9500
S34.2	Injury of nerve root of lumbar and sacral spine	0.9804	1.0000
S34.3	Injury of cauda equina	1.0000	..
S34.4	Injury of lumbosacral plexus	0.8947	1.0000
S34.5	Injury of lumbar, sacral and pelvic sympathetic nerves	1.0000	1.0000
S34.6	Injury of peripheral nerve(s) of abdomen, lower back and pelvis	1.0000	1.0000
S34.70	Functional spinal cord injury, lumbar level unspecified	0.9615	1.0000
S34.71	Functional spinal cord injury, L1	1.0000	0.9474
S34.72	Functional spinal cord injury, L2	1.0000	1.0000
S34.73	Functional spinal cord injury, L3	0.9167	0.8000
S34.74	Functional spinal cord injury, L4	0.9444	1.0000
S34.75	Functional spinal cord injury, L5	1.0000	1.0000
S34.76	Functional spinal cord injury, sacrum	0.9474	1.0000
S34.8	Injury of other and unspecified nerves at abdomen, lower back and pelvis level	1.0000	1.0000
S35.0	Injury of abdominal aorta	0.3333	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S35.1	Injury of inferior vena cava	0.2727	0.3333
S35.2	Injury of coeliac or mesenteric artery	0.8070	0.9333
S35.3	Injury of portal or splenic vein	0.6471	0.8889
S35.4	Injury of renal blood vessels	0.7391	0.8571
S35.5	Injury of iliac blood vessels	0.6970	1.0000
S35.7	Injury of multiple blood vessels at abdomen, lower back and pelvis level	0.6667	1.0000
S35.8	Injury of other blood vessels at abdomen, lower back and pelvis level	0.8868	0.8182
S35.9	Injury of unspecified blood vessel at abdomen, lower back and pelvis level	0.9231	0.8571
S36.00	Injury of spleen, unspecified	0.8876	0.9596
S36.01	Haematoma of spleen	0.9697	1.0000
S36.02	Capsule tears of spleen, without major disruption of parenchyma	0.9362	0.9683
S36.03	Laceration of spleen extending into parenchyma	0.8864	0.9302
S36.04	Massive parenchymal disruption of spleen	0.9168	0.9184
S36.08	Other injury of spleen	0.9281	0.9231
S36.10	Injury of liver, unspecified	0.8363	0.9383
S36.11	Contusion and haematoma of liver	0.9530	0.9550
S36.12	Laceration of liver, unspecified	0.8953	0.8796
S36.13	Minor laceration of liver	0.9135	0.9595
S36.14	Moderate laceration of liver	0.8678	0.9459
S36.15	Major laceration of liver	0.6200	0.8095
S36.16	Other injury of liver	0.8649	1.0000
S36.17	Injury of gallbladder	0.9259	0.6667
S36.18	Injury of bile duct	0.9583	1.0000
S36.20	Injury of pancreas, part unspecified	0.9796	0.9412
S36.21	Injury of head of pancreas	0.8571	1.0000
S36.22	Injury of body of pancreas	1.0000	1.0000
S36.23	Injury of tail of pancreas	0.9200	1.0000
S36.29	Injury of other and multiple parts of pancreas	0.8182	0.6667
S36.3	Injury of stomach	0.9063	0.9444
S36.40	Injury of small intestine, part unspecified	0.9016	1.0000
S36.41	Injury of duodenum	0.9714	0.9773
S36.49	Injury of other and multiple parts of small intestine	0.9419	0.9780
S36.50	Injury of colon, part unspecified	0.9286	0.5000
S36.51	Injury of ascending (right) colon	0.8889	1.0000
S36.52	Injury of transverse colon	0.8587	0.9565
S36.53	Injury of descending(left) colon	0.9333	1.0000
S36.54	Injury of sigmoid colon	0.8889	0.9524

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S36.59	Injury of other and multiple parts of colon	0.8941	0.9231
S36.6	Injury of rectum	0.9367	1.0000
S36.7	Injury of multiple intra-abdominal organs	0.5833	1.0000
S36.81	Injury of peritoneum	0.9207	0.9462
S36.82	Injury of mesentery	0.8767	0.9474
S36.83	Injury of retroperitoneum	0.7560	0.8734
S36.88	Injury of other intra-abdominal organs	0.8966	1.0000
S36.9	Injury of unspecified intra-abdominal organ	0.8377	0.9024
S37.00	Injury of kidney, unspecified	0.9350	0.9710
S37.01	Contusion and haematoma of kidney	0.9841	0.9857
S37.02	Laceration of kidney	0.9608	0.9756
S37.03	Complete disruption of kidney parenchyma	0.9125	0.8889
S37.1	Injury of ureter	1.0000	1.0000
S37.20	Injury of bladder, unspecified	0.8889	1.0000
S37.21	Contusion of bladder	1.0000	1.0000
S37.22	Rupture of bladder	0.8800	0.9667
S37.28	Other injury of bladder	0.8824	1.0000
S37.30	Injury of urethra, part unspecified	0.9254	0.9545
S37.31	Injury of membranous urethra	0.9412	1.0000
S37.32	Injury of penile urethra	1.0000	1.0000
S37.33	Injury of prostatic urethra	1.0000	1.0000
S37.38	Injury of other part of urethra	1.0000	1.0000
S37.4	Injury of ovary	1.0000	..
S37.5	Injury of fallopian tube	1.0000	1.0000
S37.6	Injury of uterus	1.0000	1.0000
S37.7	Injury of multiple pelvic organs	0.0000	..
S37.81	Injury of adrenal gland	0.8537	1.0000
S37.82	Injury of prostate	0.5000	..
S37.83	Injury of seminal vesicle	0.8000	1.0000
S37.84	Injury of vas deferens	1.0000	1.0000
S37.88	Injury of other pelvic organ	0.9797	0.9600
S37.9	Injury of unspecified pelvic organ	0.8000	0.8667
S38.0	Crushing injury of external genital organs	1.0000	1.0000
S38.1	Crushing injury of other and unspecified parts of abdomen, lower back and pelvis	0.9756	1.0000
S38.2	Traumatic amputation of external genital organs	0.9167	1.0000
S38.3	Traumatic amputation of other and unspecified parts of abdomen, lower back and pelvis	..	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S39.0	Injury of muscle and tendon of abdomen, lower back and pelvis	0.9944	1.0000
S39.6	Injury of intra-abdominal organ(s) with pelvic organ(s)	0.8750	1.0000
S39.7	Other multiple injuries of abdomen, lower back and pelvis	0.8889	1.0000
S39.8	Other specified injuries of abdomen, lower back and pelvis	0.9922	0.9903
S39.9	Unspecified injury of abdomen, lower back and pelvis	0.9902	0.9877
S40.0	Contusion of shoulder and upper arm	0.9831	0.9774
S40.7	Multiple superficial injuries of shoulder and upper arm	0.9869	0.9701
S40.81	Abrasion of shoulder and upper arm	0.9852	0.9943
S40.82	Blister of shoulder and upper arm	0.7500	..
S40.83	Insect bite of shoulder and upper arm	1.0000	1.0000
S40.84	Superficial foreign body (splinter) of shoulder and upper arm	1.0000	1.0000
S40.88	Other superficial injuries of shoulder and upper arm	0.9826	1.0000
S40.9	Superficial injury of shoulder and upper arm, unspecified	0.9746	0.9882
S41.0	Open wound of shoulder	0.9717	0.9561
S41.1	Open wound of upper arm	0.9852	0.9868
S41.7	Multiple open wounds of shoulder and upper arm	0.9906	1.0000
S41.80	Unspecified open wound of other and unspecified parts of shoulder region	0.9833	0.9905
S41.81	Open wound (of any part of shoulder and upper arm) communicating with a fracture	0.9466	0.9508
S41.82	Open wound (of any part of shoulder and upper arm) communicating with a dislocation	1.0000	1.0000
S42.00	Fracture of clavicle, part unspecified	0.9682	0.9757
S42.01	Fracture of sternal end of clavicle	1.0000	1.0000
S42.02	Fracture of shaft of clavicle	0.9909	0.9972
S42.03	Fracture of acromial end of clavicle	0.9872	0.9930
S42.09	Multiple fractures of clavicle	0.9688	1.0000
S42.10	Fracture of scapula, part unspecified	0.9714	0.9716
S42.11	Fracture of body of scapula	0.9774	1.0000
S42.12	Fracture of acromial process	1.0000	1.0000
S42.13	Fracture of coracoid process	1.0000	1.0000
S42.14	Fracture of glenoid cavity and neck of scapula	0.9873	0.9947
S42.19	Multiple fractures of scapula	1.0000	1.0000
S42.20	Fracture of upper end of humerus, part unspecified	0.9758	0.9740
S42.21	Fracture of head of humerus	0.9769	0.9950
S42.22	Fracture of surgical neck of humerus	0.9611	0.9632
S42.23	Fracture of anatomical neck of humerus	0.9709	0.9600
S42.24	Fracture of greater tuberosity of humerus	0.9900	0.9953
S42.29	Fracture of other and multiple parts of upper end of humerus	0.9906	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S42.3	Fracture of shaft of humerus	0.9599	0.9673
S42.40	Fracture of lower end of humerus, part unspecified	0.9695	0.9764
S42.41	Supracondylar fracture of humerus	0.9972	0.9945
S42.42	Fracture of lateral condyle of humerus	1.0000	1.0000
S42.43	Fracture of medial condyle of humerus	0.9940	1.0000
S42.44	Fracture of condyle(s) of humerus, unspecified	0.9953	0.9891
S42.45	T-shape fracture of distal humerus	1.0000	1.0000
S42.49	Other and multiple fractures of lower end of humerus	1.0000	0.9857
S42.7	Multiple fractures of clavicle, scapula and humerus	0.9792	0.8889
S42.8	Fracture of other parts of shoulder and upper arm	1.0000	1.0000
S42.9	Fracture of shoulder girdle, part unspecified	0.9850	0.8571
S43.00	Dislocation of shoulder, unspecified	0.9912	0.9836
S43.01	Anterior dislocation of humerus	0.9922	0.9870
S43.02	Posterior dislocation of humerus	0.9940	1.0000
S43.03	Inferior dislocation of humerus	0.9770	1.0000
S43.08	Dislocation of other part of shoulder	0.9904	1.0000
S43.1	Dislocation of acromioclavicular joint	1.0000	0.9932
S43.2	Dislocation of sternoclavicular joint	0.9904	1.0000
S43.3	Dislocation of other and unspecified parts of shoulder girdle	0.9792	1.0000
S43.4	Sprain and strain of shoulder joint	1.0000	1.0000
S43.5	Sprain and strain of acromioclavicular joint	0.9952	1.0000
S43.6	Sprain and strain of sternoclavicular joint	1.0000	1.0000
S43.7	Sprain and strain of other and unspecified parts of shoulder girdle	0.9973	0.9928
S44.0	Injury of ulnar nerve at upper arm level	1.0000	1.0000
S44.1	Injury of median nerve at upper arm level	0.9848	1.0000
S44.2	Injury of radial nerve at upper arm level	1.0000	1.0000
S44.3	Injury of axillary nerve	1.0000	0.9091
S44.4	Injury of musculocutaneous nerve	1.0000	1.0000
S44.5	Injury of cutaneous sensory nerve at shoulder and upper arm level	1.0000	1.0000
S44.7	Injury of multiple nerves at shoulder and upper arm level	1.0000	..
S44.8	Injury of other nerves at shoulder and upper arm level	1.0000	1.0000
S44.9	Injury of unspecified nerve at shoulder and upper arm level	1.0000	1.0000
S45.0	Injury of axillary artery	1.0000	0.9375
S45.1	Injury of brachial artery	0.9891	1.0000
S45.2	Injury of axillary or brachial vein	0.9615	1.0000
S45.3	Injury of superficial vein at shoulder and upper arm level	1.0000	..
S45.7	Injury of multiple blood vessels at shoulder and upper arm level	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S45.8	Injury of other blood vessels at shoulder and upper arm level	1.0000	1.0000
S45.9	Injury of unspecified blood vessel at shoulder and upper arm level	1.0000	1.0000
S46.0	Injury of tendon of the rotator cuff of shoulder	0.9973	0.9945
S46.1	Injury of muscle and tendon of long head of biceps	1.0000	1.0000
S46.2	Injury of muscle and tendon of other parts of biceps	0.9983	1.0000
S46.3	Injury of muscle and tendon of triceps	0.9904	1.0000
S46.7	Injury of multiple muscles and tendons at shoulder and upper arm level	1.0000	1.0000
S46.8	Injury of other muscles and tendons at shoulder and upper arm level	0.9936	1.0000
S46.9	Injury of unspecified muscle and tendon at shoulder and upper arm level	0.9931	1.0000
S47	Crushing injury of shoulder and upper arm	0.9545	1.0000
S48.0	Traumatic amputation at shoulder joint	0.8000	..
S48.1	Traumatic amputation at level between shoulder and elbow	0.7500	1.0000
S48.9	Traumatic amputation of shoulder and upper arm, level unspecified	0.6667	1.0000
S49.7	Multiple injuries of shoulder and upper arm	1.0000	1.0000
S49.8	Other specified injuries of shoulder and upper arm	0.9909	0.9844
S49.9	Unspecified injury of shoulder and upper arm	0.9949	0.9885
S50.0	Contusion of elbow	0.9824	0.9726
S50.1	Contusion of other and unspecified parts of forearm	0.9780	0.9634
S50.7	Multiple superficial injuries of forearm	0.9847	0.9643
S50.81	Abrasion of forearm	0.9871	0.9928
S50.82	Blister of forearm	1.0000	1.0000
S50.83	Insect bite of forearm	1.0000	1.0000
S50.84	Superficial foreign body (splinter) of forearm	1.0000	1.0000
S50.88	Other superficial injuries of forearm	0.9744	1.0000
S50.9	Superficial injury of forearm, unspecified	0.9774	0.9818
S51.0	Open wound of elbow	0.9740	0.9728
S51.7	Multiple open wounds of forearm	0.9834	1.0000
S51.80	Unspecified open wound of other and unspecified parts of forearm	0.9881	0.9967
S51.81	Open wound (of any part of forearm) communicating with a fracture	0.9876	0.9882
S51.82	Open wound (of any part of forearm) communicating with a dislocation	1.0000	1.0000
S51.9	Open wound of forearm, part unspecified	0.9882	0.9827
S52.00	Fracture of upper end of ulna, part unspecified	0.9851	0.9740
S52.01	Fracture of olecranon process of ulna	0.9907	0.9913
S52.02	Fracture of coronoid process of ulna	0.9935	1.0000
S52.09	Other and multiple fractures of upper end of ulna	0.9667	1.0000
S52.10	Fracture of upper end of radius, part unspecified	0.9877	0.9847
S52.11	Fracture of head of radius	0.9982	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S52.12	Fracture of neck of radius	0.9976	1.0000
S52.19	Other and multiple fractures of upper end of radius	1.0000	1.0000
S52.20	Fracture of shaft of ulna, part unspecified	0.9958	1.0000
S52.21	Fracture of proximal shaft of ulna with dislocation of head of radius	0.9982	1.0000
S52.30	Fracture of shaft of radius, part unspecified	0.9939	0.9979
S52.31	Fracture of distal shaft of radius with dislocation of head of ulna	1.0000	1.0000
S52.4	Fracture of shafts of both ulna and radius	0.9979	0.9988
S52.50	Fracture of lower end of radius, unspecified	0.9963	0.9983
S52.51	Fracture of lower end of radius with dorsal angulation	0.9944	0.9955
S52.52	Fracture of lower end of radius with volar angulation	0.9995	1.0000
S52.59	Other and multiple fractures of lower end of radius	0.9992	0.9972
S52.6	Fracture of lower end of both ulna and radius	0.9974	0.9985
S52.7	Multiple fractures of forearm	0.9910	1.0000
S52.8	Fracture of other parts of forearm	0.9943	0.9895
S52.9	Fracture of forearm, part unspecified	0.9580	0.8636
S53.0	Dislocation of radial head	1.0000	1.0000
S53.10	Dislocation of elbow, unspecified	0.9951	0.9926
S53.11	Anterior dislocation of elbow	1.0000	1.0000
S53.12	Posterior dislocation of elbow	0.9981	1.0000
S53.13	Medial dislocation of elbow	1.0000	0.9545
S53.14	Lateral dislocation of elbow	1.0000	1.0000
S53.18	Other dislocation of elbow	0.9942	1.0000
S53.2	Traumatic rupture of radial collateral ligament	1.0000	..
S53.3	Traumatic rupture of ulnar collateral ligament	1.0000	1.0000
S53.40	Sprain and strain of elbow, part unspecified	0.9896	1.0000
S53.41	Sprain and strain of radial collateral ligament	1.0000	1.0000
S53.42	Sprain and strain of ulnar collateral ligament	1.0000	1.0000
S53.43	Sprain and strain radiohumeral (joint)	1.0000	1.0000
S53.44	Sprain and strain ulnohumeral (joint)	1.0000	..
S53.48	Sprain and strain of other part of elbow	1.0000	1.0000
S54.0	Injury of ulnar nerve at forearm level	0.9958	1.0000
S54.1	Injury of median nerve at forearm level	0.9972	1.0000
S54.2	Injury of radial nerve at forearm level	1.0000	1.0000
S54.3	Injury of cutaneous sensory nerve at forearm level	1.0000	1.0000
S54.7	Injury of multiple nerves at forearm level	1.0000	1.0000
S54.8	Injury of other nerves at forearm level	1.0000	1.0000
S54.9	Injury of unspecified nerve at forearm level	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S55.0	Injury of ulnar artery at forearm level	1.0000	1.0000
S55.1	Injury of radial artery at forearm level	0.9971	1.0000
S55.2	Injury of vein at forearm level	1.0000	1.0000
S55.7	Injury of multiple blood vessels at forearm level	1.0000	1.0000
S55.8	Injury of other blood vessels at forearm level	1.0000	1.0000
S55.9	Injury of unspecified blood vessel at forearm level	0.9756	1.0000
S56.0	Injury of long flexor muscle and tendon of thumb at forearm level	1.0000	1.0000
S56.1	Injury of flexor muscle and tendon of other finger(s) at forearm level	1.0000	1.0000
S56.2	Injury of other flexor muscle and tendon at forearm level	1.0000	1.0000
S56.3	Injury of extensor or abductor muscles and tendons of thumb at forearm level	1.0000	1.0000
S56.4	Injury of extensor muscle and tendon of other finger(s) at forearm level	1.0000	1.0000
S56.5	Injury of other extensor muscle and tendon at forearm level	0.9984	1.0000
S56.7	Injury of multiple muscles and tendons at forearm level	1.0000	1.0000
S56.8	Injury of other and unspecified muscles and tendons at forearm level	0.9949	1.0000
S57.0	Crushing injury of elbow	1.0000	1.0000
S57.8	Crushing injury of other parts of forearm	0.9565	1.0000
S57.9	Crushing injury of forearm, part unspecified	1.0000	1.0000
S58.0	Traumatic amputation at elbow joint	1.0000	1.0000
S58.1	Traumatic amputation at level between elbow and wrist	1.0000	1.0000
S58.9	Traumatic amputation of forearm, level unspecified	..	..
S59.7	Multiple injuries of forearm	1.0000	1.0000
S59.8	Other specified injuries of forearm	0.9695	1.0000
S59.9	Unspecified injury of forearm	0.9874	0.9706
S60.0	Contusion of finger(s) without damage to nail	0.9951	0.9841
S60.1	Contusion of finger(s) with damage to nail	1.0000	1.0000
S60.2	Contusion of other parts of wrist and hand	0.9833	0.9757
S60.7	Multiple superficial injuries of wrist and hand	1.0000	1.0000
S60.81	Abrasion of wrist and hand	0.9869	0.9871
S60.82	Blister of wrist and hand	1.0000	0.9286
S60.83	Insect bite of wrist and hand	1.0000	1.0000
S60.84	Superficial foreign body (splinter) of wrist and hand	1.0000	1.0000
S60.88	Other superficial injuries of wrist and hand	0.9934	1.0000
S60.9	Superficial injury of wrist and hand, unspecified	0.9924	1.0000
S61.0	Open wound of finger(s) without damage to nail	0.9986	0.9995
S61.1	Open wound of finger(s) with damage to nail	0.9997	1.0000
S61.7	Multiple open wounds of wrist and hand	0.9930	0.9853
S61.80	Unspecified open wound of other parts of wrist and hand	0.9962	0.9957

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S61.81	Open wound (of any part of wrist and hand) communicating with a fracture	0.9990	0.9989
S61.82	Open wound (of any part of wrist and hand) communicating with a dislocation	0.9964	1.0000
S61.9	Open wound of wrist and hand part, part unspecified	0.9954	0.9882
S62.0	Fracture of navicular (scaphoid) bone of hand	0.9986	1.0000
S62.10	Fracture of carpal bone, unspecified	0.9353	0.9636
S62.11	Fracture of lunate bone of wrist	1.0000	1.0000
S62.12	Fracture of triquetral bone of wrist	1.0000	1.0000
S62.13	Fracture of pisiform	1.0000	1.0000
S62.14	Fracture of trapezium bone	1.0000	1.0000
S62.15	Fracture of trapezoid bone	1.0000	1.0000
S62.16	Fracture of capitate bone	1.0000	1.0000
S62.17	Fracture of hamate bone	1.0000	1.0000
S62.19	Fracture of other and multiple carpal bones	1.0000	1.0000
S62.20	Fracture of first metacarpal bone, part unspecified	0.9938	1.0000
S62.21	Fracture of base of first metacarpal bone	0.9990	0.9958
S62.22	Fracture of shaft of first metacarpal bone	1.0000	1.0000
S62.23	Fracture of neck of first metacarpal bone	1.0000	1.0000
S62.24	Fracture of head of first metacarpal bone	1.0000	1.0000
S62.30	Fracture of metacarpal bone(s), part unspecified	0.9948	0.9881
S62.31	Fracture of base of other metacarpal bone(s)	0.9957	0.9967
S62.32	Fracture of shaft of other metacarpal bone(s)	1.0000	1.0000
S62.33	Fracture of neck of other metacarpal bone(s)	0.9926	1.0000
S62.34	Fracture of head of other metacarpal bone(s)	0.9972	1.0000
S62.4	Multiple fractures of metacarpal bones	0.9922	0.9661
S62.50	Fracture of thumb, part unspecified	1.0000	1.0000
S62.51	Fracture of proximal phalanx of thumb	0.9990	1.0000
S62.52	Fracture of distal phalanx of thumb	0.9981	1.0000
S62.60	Fracture of phalanx, part unspecified	0.9876	1.0000
S62.61	Fracture of proximal phalanx	0.9974	0.9978
S62.62	Fracture of middle phalanx	0.9977	1.0000
S62.63	Fracture of distal phalanx	0.9993	1.0000
S62.7	Multiple fractures of fingers	0.9968	1.0000
S62.8	Fracture of other and unspecified parts of wrist and hand	0.9811	0.9672
S63.00	Dislocation of wrist, part unspecified	0.9944	0.9952
S63.01	Dislocation of radioulnar (joint), distal	1.0000	1.0000
S63.02	Dislocation of radiocarpal (joint)	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S63.03	Dislocation of midcarpal (joint)	1.0000	1.0000
S63.04	Dislocation of carpometacarpal (joint)	1.0000	1.0000
S63.08	Dislocation of other part of wrist	0.9949	1.0000
S63.10	Dislocation of finger, part unspecified	0.9973	1.0000
S63.11	Dislocation of metacarpophalangeal (joint)	0.9982	1.0000
S63.12	Dislocation of interphalangeal (joint), hand	0.9982	0.9968
S63.2	Multiple dislocations of fingers	1.0000	1.0000
S63.3	Traumatic rupture of ligament of wrist and carpus	1.0000	1.0000
S63.4	Traumatic rupture of ligament of finger at metacarpophalangeal and interphalangeal joint(s)	1.0000	1.0000
S63.50	Sprain and strain of wrist, part unspecified	0.9957	1.0000
S63.51	Sprain and strain of carpal (joint)	1.0000	1.0000
S63.52	Sprain and strain of radiocarpal (joint)(ligament)	1.0000	1.0000
S63.53	Sprain and strain of carpometacarpal (joint)	1.0000	1.0000
S63.58	Sprain and strain of other parts of wrist	1.0000	1.0000
S63.60	Sprain and strain of finger(s), part unspecified	1.0000	1.0000
S63.61	Sprain and strain of metacarpophalangeal (joint)	1.0000	1.0000
S63.62	Sprain and strain of interphalangeal (joint), hand	1.0000	1.0000
S63.68	Sprain and strain of other parts of finger	1.0000	1.0000
S63.7	Sprain and strain of other and unspecified parts of hand	1.0000	1.0000
S64.0	Injury of ulnar nerve at wrist and hand level	1.0000	1.0000
S64.1	Injury of median nerve at wrist and hand level	1.0000	1.0000
S64.2	Injury of radial nerve at wrist and hand level	1.0000	1.0000
S64.3	Injury of digital nerve of thumb	1.0000	1.0000
S64.4	Injury of digital nerve of other finger	1.0000	1.0000
S64.7	Injury of multiple nerves at wrist and hand level	1.0000	1.0000
S64.8	Injury of other nerves at wrist and hand level	1.0000	1.0000
S64.9	Injury of unspecified nerve at wrist and hand level	0.9913	1.0000
S65.0	Injury of ulnar artery at wrist and hand level	1.0000	1.0000
S65.1	Injury of radial artery at wrist and hand level	0.9979	0.9930
S65.2	Injury of superficial palmar arch	1.0000	1.0000
S65.3	Injury of deep palmar arch	1.0000	1.0000
S65.4	Injury of blood vessel(s) of thumb	1.0000	1.0000
S65.5	Injury of blood vessel(s) of other finger	1.0000	1.0000
S65.7	Injury of multiple blood vessels at wrist and hand level	0.9737	1.0000
S65.8	Injury of other blood vessels at wrist and hand level	1.0000	1.0000
S65.9	Injury of unspecified blood vessel at wrist and hand level	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S66.0	Injury of long flexor muscle and tendon of thumb at wrist and hand level	1.0000	1.0000
S66.1	Injury of flexor muscle and tendon of other finger at wrist and hand level	0.9992	1.0000
S66.2	Injury of extensor muscle and tendon of thumb at wrist and hand level	1.0000	1.0000
S66.3	Injury of extensor muscle and tendon of other finger at wrist and hand level	1.0000	1.0000
S66.4	Injury of intrinsic muscle and tendon of thumb at wrist and hand level	1.0000	..
S66.5	Injury of intrinsic muscle and tendon of other finger at wrist and hand level	1.0000	1.0000
S66.6	Injury of multiple flexor muscles and tendons at wrist and hand level	0.9978	1.0000
S66.7	Injury of multiple extensor muscles and tendons at wrist and hand level	1.0000	1.0000
S66.8	Injury of other muscles and tendons at wrist and hand level	0.9984	1.0000
S66.9	Injury of unspecified muscle and tendon at wrist and hand level	0.9971	1.0000
S67.0	Crushing injury of thumb and other finger(s)	1.0000	1.0000
S67.8	Crushing injury of other and unspecified parts of wrist and hand	0.9935	1.0000
S68.0	Traumatic amputation of thumb (complete)(partial)	1.0000	1.0000
S68.1	Traumatic amputation of other single finger (complete)(partial)	0.9995	1.0000
S68.2	Traumatic amputation of two or more fingers alone (complete)(partial)	0.9985	1.0000
S68.3	Combined traumatic amputation of (part of) finger(s) with other parts of wrist and hand	1.0000	1.0000
S68.4	Traumatic amputation of hand at wrist level	1.0000	1.0000
S68.8	Traumatic amputation of other parts of wrist and hand	1.0000	1.0000
S68.9	Traumatic amputation of wrist and hand, level unspecified	0.8571	..
S69.7	Multiple injuries of wrist and hand	1.0000	..
S69.8	Other specified injuries of wrist and hand	1.0000	1.0000
S69.9	Unspecified injury of wrist and hand	0.9987	1.0000
S70.0	Contusion of hip	0.9865	0.9824
S70.1	Contusion of thigh	0.9856	0.9885
S70.7	Multiple superficial injuries of hip and thigh	1.0000	1.0000
S70.81	Abrasion of hip and thigh	0.9869	0.9894
S70.82	Blister of hip and thigh	1.0000	1.0000
S70.83	Insect bite of hip and thigh	1.0000	1.0000
S70.84	Superficial foreign body (splinter) of hip and thigh	1.0000	1.0000
S70.88	Other superficial injuries of hip and thigh	0.9902	1.0000
S70.9	Superficial injury of hip and thigh, unspecified	1.0000	0.9500
S71.0	Open wound of hip	0.9688	1.0000
S71.1	Open wound of thigh	0.9876	0.9941
S71.7	Multiple open wounds of hip and thigh	0.9752	1.0000
S71.80	Open wound of other and unspecified parts of pelvic girdle	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S71.81	Open wound (of any part of hip and thigh) communicating with a fracture	0.8955	0.9621
S71.82	Open wound (of any part of hip and thigh) communicating with a dislocation	0.8333	..
S72.00	Fracture of neck of femur, part unspecified	0.8759	0.8929
S72.01	Fracture of intracapsular section of femur	0.9231	0.9423
S72.02	Fracture of upper epiphysis (separation) of femur	0.9684	1.0000
S72.03	Fracture of subcapital section of femur	0.9109	0.9409
S72.04	Fracture of midcervical section of femur	0.8943	0.9615
S72.05	Fracture of base of neck of femur	0.9211	0.9167
S72.08	Fracture of other parts of neck of femur	0.9214	0.9622
S72.10	Fracture of trochanteric section of femur, unspecified	0.8989	0.9336
S72.11	Fracture of intertrochanteric section of femur	0.8980	0.9332
S72.2	Subtrochanteric fracture	0.8986	0.9446
S72.3	Fracture of shaft of femur	0.9599	0.9707
S72.40	Fracture of lower end of femur, part unspecified	0.9396	0.9771
S72.41	Fracture of femoral condyle	0.9760	0.9916
S72.42	Fracture of lower epiphysis (separation) of femur	0.9747	0.9500
S72.43	Supracondylar fracture of femur	0.9495	0.9392
S72.44	Intercondylar fracture of femur	0.9286	1.0000
S72.7	Multiple fractures of femur	0.9762	1.0000
S72.8	Fractures of other parts of femur	0.9512	0.9579
S72.9	Fracture of femur, part unspecified	0.8000	0.8182
S73.00	Dislocation of hip, unspecified	0.9724	0.9821
S73.01	Posterior dislocation of hip	0.9931	0.9921
S73.02	Anterior dislocation of hip	0.9755	1.0000
S73.08	Other dislocation of hip	0.9485	0.9885
S73.10	Sprain and strain of hip, part unspecified	0.9905	0.9832
S73.11	Sprain and strain of iliofemoral (ligament)	1.0000	1.0000
S73.12	Sprain and strain of ischiocapsular (ligament)	1.0000	..
S73.18	Sprain and strain of other specified sites of hip	0.9897	1.0000
S74.0	Injury of sciatic nerve at hip and thigh level	0.9808	1.0000
S74.1	Injury of femoral nerve at hip and thigh level	0.9474	1.0000
S74.2	Injury of cutaneous sensory nerve at hip and thigh level	1.0000	1.0000
S74.7	Injury of multiple nerves at hip and thigh level	1.0000	1.0000
S74.8	Injury of other nerves at hip and thigh level	1.0000	1.0000
S74.9	Injury of unspecified nerve at hip and thigh level	1.0000	1.0000
S75.0	Injury of femoral artery	0.9535	0.9545

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S75.1	Injury of femoral vein at hip and thigh level	0.9697	1.0000
S75.2	Injury of greater saphenous vein at hip and thigh level	1.0000	1.0000
S75.7	Injury of multiple blood vessels at hip and thigh level	1.0000	1.0000
S75.8	Injury of other blood vessels at hip and thigh level	1.0000	1.0000
S75.9	Injury of unspecified blood vessel at hip and thigh level	0.8750	1.0000
S76.0	Injury of muscle and tendon of hip	0.9906	1.0000
S76.1	Injury of quadriceps muscle and tendon	0.9982	0.9937
S76.2	Injury of adductor muscle and tendon of thigh	1.0000	1.0000
S76.3	Injury of muscle and tendon of the posterior muscle group at thigh level	0.9894	1.0000
S76.4	Injury of other and unspecified muscles and tendons at thigh level	1.0000	1.0000
S76.7	Injury of multiple muscles and tendons at hip and thigh level	1.0000	1.0000
S77.0	Crushing injury of hip	0.9000	1.0000
S77.1	Crushing injury of thigh	0.9444	1.0000
S77.2	Crushing injury of hip with thigh	0.8333	..
S78.0	Traumatic amputation at hip joint	..	..
S78.1	Traumatic amputation at level between hip and knee	1.0000	0.6667
S78.9	Traumatic amputation of hip and thigh, level unspecified	0.5000	..
S79.7	Multiple injuries of hip and thigh	0.9825	1.0000
S79.8	Other specified injuries of hip and thigh	0.9782	0.9863
S79.9	Unspecified injury of hip and thigh	0.9789	0.9870
S80.0	Contusion of knee	0.9864	0.9831
S80.1	Contusion of other and unspecified parts of lower leg	0.9850	0.9914
S80.7	Multiple superficial injuries of lower leg	0.9543	1.0000
S80.81	Abrasion of lower leg	0.9876	0.9888
S80.82	Blister of lower leg	0.9773	1.0000
S80.83	Insect bite of lower leg	1.0000	1.0000
S80.84	Superficial foreign body (splinter) of lower leg	1.0000	1.0000
S80.88	Other superficial injuries of lower leg	0.9953	0.9737
S80.9	Superficial injury of lower leg, unspecified	0.9930	1.0000
S81.0	Open wound of knee	0.9897	0.9934
S81.7	Multiple open wounds of lower leg	0.9872	0.9609
S81.80	Unspecified open wound of other parts of lower leg	0.9865	0.9891
S81.81	Open wound (of any part of lower leg) communicating with a fracture	0.9687	0.9794
S81.82	Open wound (of any part of lower leg) communicating with a dislocation	0.9787	1.0000
S81.9	Open wound of lower leg, part unspecified	0.9839	0.9804
S82.0	Fracture of patella	0.9921	0.9929
S82.11	Fracture of upper end of tibia with fracture of fibula (any part)	0.9677	0.9749

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S82.18	Other fracture of upper end of tibia	0.9884	0.9896
S82.21	Fracture of shaft of tibia with fracture of fibula (any part)	0.9790	0.9841
S82.28	Other fracture of shaft of tibia	0.9906	0.9973
S82.31	Fracture of lower end of tibia with fracture of fibula (any part)	0.9911	0.9963
S82.38	Other fracture of lower end of tibia	0.9938	1.0000
S82.40	Fracture of fibula, part unspecified	0.9923	0.9867
S82.41	Fracture of upper end of fibula	0.9981	0.9838
S82.42	Fracture of shaft of fibula	0.9899	0.9691
S82.49	Multiple fractures of fibula	1.0000	1.0000
S82.5	Fracture of medial malleolus	0.9952	0.9965
S82.6	Fracture of lateral malleolus	0.9971	0.9969
S82.7	Multiple fractures of lower leg	0.9500	1.0000
S82.81	Bimalleolar fracture, ankle	0.9959	0.9966
S82.82	Trimalleolar fracture, ankle	0.9972	0.9985
S82.88	Fracture of other parts of lower leg	0.9920	0.9828
S82.9	Fracture of lower leg, part unspecified	0.9746	0.9512
S83.0	Dislocation of patella	0.9971	1.0000
S83.10	Dislocation of knee, unspecified	0.9809	1.0000
S83.11	Anterior dislocation of tibia, proximal end	1.0000	1.0000
S83.12	Posterior dislocation of tibia, proximal end	1.0000	1.0000
S83.13	Medial dislocation of tibia, proximal end	1.0000	1.0000
S83.14	Lateral dislocation of tibia, proximal end	1.0000	1.0000
S83.18	Other dislocation of knee	1.0000	1.0000
S83.2	Tear of meniscus, current	1.0000	1.0000
S83.3	Tear of articular cartilage of knee, current	1.0000	1.0000
S83.40	Sprain and strain of unspecified collateral ligament	1.0000	1.0000
S83.41	Sprain and strain of lateral collateral ligament	1.0000	1.0000
S83.42	Sprain and strain of medial collateral ligament	1.0000	1.0000
S83.43	Rupture of lateral collateral ligament	1.0000	0.9773
S83.44	Rupture of medial collateral ligament	0.9895	1.0000
S83.50	Sprain and strain of unspecified cruciate ligament	1.0000	1.0000
S83.51	Sprain and strain of anterior cruciate ligament	0.9983	1.0000
S83.52	Sprain and strain of posterior cruciate ligament	1.0000	1.0000
S83.53	Rupture of anterior cruciate ligament	0.9980	1.0000
S83.54	Rupture of posterior cruciate ligament	1.0000	1.0000
S83.6	Sprain and strain of other and unspecified parts of knee	0.9931	0.9907
S83.7	Injury to multiple structures of knee	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S84.0	Injury of tibial nerve at lower leg level	0.9796	1.0000
S84.1	Injury of peroneal nerve at lower leg level	1.0000	1.0000
S84.2	Injury of cutaneous sensory nerve at lower leg level	1.0000	1.0000
S84.7	Injury of multiple nerves at lower leg level	1.0000	1.0000
S84.8	Injury of other nerves at lower leg level	0.9910	1.0000
S84.9	Injury of unspecified nerve at lower leg level	1.0000	1.0000
S85.0	Injury of popliteal artery	0.9778	1.0000
S85.1	Injury of (anterior)(posterior) tibial artery	0.9895	1.0000
S85.2	Injury of peroneal artery	1.0000	1.0000
S85.3	Injury of greater saphenous vein at lower leg level	1.0000	1.0000
S85.4	Injury of lesser saphenous vein at lower leg level	1.0000	1.0000
S85.5	Injury of popliteal vein	1.0000	1.0000
S85.7	Injury of multiple blood vessels at lower leg level	1.0000	1.0000
S85.8	Injury of other blood vessels at lower leg level	1.0000	1.0000
S85.9	Injury of unspecified blood vessel at lower leg level	1.0000	1.0000
S86.0	Injury of Achilles tendon	0.9997	1.0000
S86.1	Injury of other muscle(s) and tendon(s) of posterior muscle group at lower leg level	1.0000	1.0000
S86.2	Injury of muscle(s) and tendon(s) of anterior muscle group at lower leg level	0.9939	1.0000
S86.3	Injury of muscle(s) and tendon(s) of peroneal muscle group at lower leg level	1.0000	1.0000
S86.7	Injury of multiple muscles and tendons at lower leg level	1.0000	1.0000
S86.8	Injury of other muscles and tendons at lower leg level	0.9982	1.0000
S86.9	Injury of unspecified muscle and tendon at lower leg level	0.9949	1.0000
S87.0	Crushing injury of knee	1.0000	1.0000
S87.8	Crushing injury of other and unspecified parts of lower leg	1.0000	1.0000
S88.0	Traumatic amputation at knee joint	1.0000	..
S88.1	Traumatic amputation at level between knee and ankle	0.7391	0.8571
S88.9	Traumatic amputation of lower leg, level unspecified	0.0000	..
S89.7	Multiple injuries of lower leg	1.0000	1.0000
S89.8	Other specified injuries of lower leg	0.9961	1.0000
S89.9	Unspecified injury of lower leg	0.9911	0.9763
S90.0	Contusion of ankle	0.9901	0.9909
S90.1	Contusion of toe(s) without damage to nail	1.0000	1.0000
S90.2	Contusion of toe(s) with damage to nail	0.9167	1.0000
S90.3	Contusion of other and unspecified parts of foot	0.9903	0.9744
S90.7	Multiple superficial injuries of ankle and foot	1.0000	1.0000
S90.81	Abrasion of ankle and foot	0.9830	0.9894

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S90.82	Blister of ankle and foot	0.9940	1.0000
S90.83	Insect bite of ankle and foot	1.0000	1.0000
S90.84	Superficial foreign body (splinter) of ankle and foot	1.0000	1.0000
S90.88	Other superficial injuries of ankle and foot	1.0000	0.9091
S90.9	Superficial injury of ankle and foot, unspecified	0.9932	1.0000
S91.0	Open wound of ankle	0.9926	0.9960
S91.1	Open wound of toe(s) without damage to nail	0.9945	0.9970
S91.2	Open wound of toe(s) with damage to nail	1.0000	1.0000
S91.3	Open wound of other parts of foot	0.9967	0.9974
S91.7	Multiple open wounds of ankle and foot	1.0000	0.9750
S91.81	Open wound (of any part of ankle and foot) communicating with a fracture	0.9931	0.9940
S91.82	Open wound (of any part of ankle and foot) communicating with a dislocation	1.0000	0.9865
S92.0	Fracture of calcaneus	0.9971	0.9962
S92.1	Fracture of talus	0.9953	0.9973
S92.20	Fracture of tarsal bone(s), unspecified	0.9535	1.0000
S92.21	Fracture of navicular (scaphoid), foot	0.9975	0.9909
S92.22	Fracture of cuboid, foot	1.0000	1.0000
S92.23	Fracture of cuneiform, foot	1.0000	1.0000
S92.28	Fracture of other part of tarsal bone	1.0000	1.0000
S92.3	Fracture of metatarsal bone	0.9947	0.9944
S92.4	Fracture of great toe	0.9983	1.0000
S92.5	Fracture of other toe	0.9956	0.9961
S92.7	Multiple fractures of foot	0.9915	1.0000
S92.9	Fracture of foot, unspecified	0.9825	0.9444
S93.0	Dislocation of ankle joint	0.9964	0.9975
S93.10	Dislocation of toe(s), unspecified	0.9947	1.0000
S93.11	Dislocation of metatarsophalangeal (joint)	1.0000	1.0000
S93.12	Dislocation of interphalangeal (joint), foot	1.0000	1.0000
S93.2	Rupture of ligaments at ankle and foot level	1.0000	1.0000
S93.30	Dislocation of foot, part unspecified	1.0000	0.9167
S93.31	Dislocation of tarsal (bone), joint unspecified	0.9912	1.0000
S93.32	Dislocation of midtarsal (joint)	1.0000	1.0000
S93.33	Dislocation of tarsometatarsal (joint)	1.0000	1.0000
S93.34	Dislocation of metatarsal (bone), joint unspecified	0.9938	1.0000
S93.38	Dislocation of other part of foot	0.9865	1.0000
S93.40	Sprain and strain of ankle, part unspecified	0.9971	0.9919

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
S93.41	Sprain and strain of deltoid (ligament), ankle	1.0000	1.0000
S93.42	Sprain and strain of calcaneofibular (ligament)	1.0000	1.0000
S93.43	Sprain and strain of tibiofibular (ligament)	1.0000	1.0000
S93.48	Sprain and strain of other part of ankle	1.0000	1.0000
S93.5	Sprain and strain of toe(s)	1.0000	1.0000
S93.6	Sprain and strain of other and unspecified parts of foot	1.0000	1.0000
S94.0	Injury of lateral plantar nerve	1.0000	1.0000
S94.1	Injury of medial plantar nerve	1.0000	1.0000
S94.2	Injury of deep peroneal nerve at ankle and foot level	1.0000	1.0000
S94.3	Injury of cutaneous sensory nerve at ankle and foot level	1.0000	1.0000
S94.7	Injury of multiple nerves at ankle and foot level	1.0000	1.0000
S94.8	Injury of other nerves at ankle and foot level	1.0000	1.0000
S94.9	Injury of unspecified nerve at ankle and foot level	1.0000	1.0000
S95.0	Injury of dorsal artery of foot	1.0000	1.0000
S95.1	Injury of plantar artery of foot	1.0000	..
S95.2	Injury of dorsal vein of foot	1.0000	..
S95.7	Injury of multiple blood vessels at ankle and foot level	1.0000	1.0000
S95.8	Injury of other blood vessels at ankle and foot level	1.0000	1.0000
S95.9	Injury of unspecified blood vessel at ankle and foot level	1.0000	1.0000
S96.0	Injury of muscle and tendon of long flexor muscle of toe at ankle and foot level	1.0000	1.0000
S96.1	Injury of muscle and tendon of long extensor muscle of toe at ankle and foot level	1.0000	1.0000
S96.2	Injury of intrinsic muscle and tendon at ankle and foot level	1.0000	1.0000
S96.7	Injury of multiple muscles and tendons at ankle and foot level	0.9878	1.0000
S96.8	Injury of other muscles and tendons at ankle and foot level	1.0000	1.0000
S96.9	Injury of unspecified muscle and tendon at ankle and foot level	0.9938	1.0000
S97.0	Crushing injury of ankle	1.0000	1.0000
S97.1	Crushing injury of toe(s)	1.0000	1.0000
S97.8	Crushing injury of other parts of ankle and foot	1.0000	1.0000
S98.0	Traumatic amputation of foot at ankle level	1.0000	1.0000
S98.1	Traumatic amputation of one toe	1.0000	1.0000
S98.2	Traumatic amputation of two or more toes	1.0000	1.0000
S98.3	Traumatic amputation of other parts of foot	1.0000	0.8571
S98.4	Traumatic amputation of foot, level unspecified	..	..
S99.7	Multiple injuries of ankle and foot	1.0000	1.0000
S99.8	Other specified injuries of ankle and foot	0.9965	1.0000
S99.9	Unspecified injury of ankle and foot	0.9984	0.9670

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T00.0	Superficial injuries involving head with neck	1.0000	1.0000
T00.1	Superficial injuries involving thorax with abdomen, lower back and pelvis	0.9706	1.0000
T00.2	Superficial injuries involving multiple regions of upper limb(s)	1.0000	1.0000
T00.3	Superficial injuries involving multiple regions of lower limb(s)	0.9908	0.9655
T00.6	Superficial injuries involving multiple regions of upper limb(s) with lower limb(s)	0.9833	1.0000
T00.8	Superficial injuries involving other combinations of body regions	0.9842	1.0000
T00.9	Multiple superficial injuries, unspecified	0.9932	0.9841
T01.0	Open wounds involving head with neck	1.0000	1.0000
T01.1	Open wounds involving thorax with abdomen, lower back and pelvis	0.8889	1.0000
T01.2	Open wounds involving multiple regions of upper limb(s)	0.9925	0.9762
T01.3	Open wounds involving multiple regions of lower limb(s)	0.9589	1.0000
T01.6	Open wounds involving multiple regions of upper limb(s) with lower limb(s)	0.9231	0.9000
T01.8	Open wounds involving other combinations of body regions	0.9444	0.8333
T01.9	Multiple open wounds, unspecified	0.9588	0.8000
T02.00	Fractures involving head with neck, closed	..	..
T02.01	Fractures involving head with neck, open	..	..
T02.10	Fractures involving thorax with lower back and pelvis, closed	1.0000	..
T02.11	Fractures involving thorax with lower back and pelvis, open	..	..
T02.20	Fractures involving multiple regions of one upper limb, closed	0.0000	..
T02.21	Fractures involving multiple regions of one upper limb, open	..	..
T02.30	Fractures involving multiple regions of one lower limb, closed	0.7692	1.0000
T02.31	Fractures involving multiple regions of one lower limb, open	1.0000	1.0000
T02.40	Fractures involving multiple regions of both upper limbs, closed	1.0000	..
T02.41	Fractures involving multiple regions of both upper limbs, open	..	..
T02.50	Fractures involving multiple regions of both lower limbs, closed	1.0000	..
T02.51	Fractures involving multiple regions of both lower limbs, open	..	..
T02.60	Fractures involving multiple regions of upper limb(s) with lower limb(s), closed	1.0000	1.0000
T02.61	Fractures involving multiple regions of upper limb(s) with lower limb(s), open	1.0000	..
T02.70	Fractures involving thorax with lower back and pelvis with limb(s), closed	..	..
T02.71	Fractures involving thorax with lower back and pelvis with limb(s), open	..	..
T02.80	Fractures involving other combinations of body regions, closed	1.0000	..
T02.81	Fractures involving other combinations of body regions, open	..	..
T02.90	Multiple fractures, unspecified, closed	0.3333	..
T02.91	Multiple fractures, unspecified, open	..	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T03.0	Dislocations, sprains and strains involving head with neck	1.0000	1.0000
T03.1	Dislocations, sprains and strains involving thorax with lower back and pelvis	1.0000	1.0000
T03.2	Dislocations, sprains and strains involving multiple regions of upper limb(s)	1.0000	..
T03.3	Dislocations, sprains and strains involving multiple regions of lower limb(s)	1.0000	1.0000
T03.4	Dislocations, sprains and strains involving multiple regions of upper limb(s) with lower limb(s)	..	..
T03.8	Dislocations, sprains and strains involving other combinations of body regions	1.0000	1.0000
T03.9	Multiple dislocations, sprains and strains, unspecified	1.0000	..
T04.0	Crushing injuries involving head with neck	1.0000	..
T04.1	Crushing injuries involving thorax with abdomen, lower back and pelvis	1.0000	1.0000
T04.2	Crushing injuries involving multiple regions of upper limb(s)	1.0000	..
T04.3	Crushing injuries involving multiple regions of lower limb(s)	1.0000	1.0000
T04.4	Crushing injuries involving multiple regions of upper limb(s) with lower limb(s)	1.0000	1.0000
T04.7	Crushing injuries of thorax with abdomen, lower back and pelvis with limb(s)	0.7500	..
T04.8	Crushing injuries involving other combinations of body regions	1.0000	..
T04.9	Multiple crushing injuries, unspecified	..	..
T05.0	Traumatic amputation of both hands	..	..
T05.1	Traumatic amputation of one hand and other arm (any level, except hand)	..	..
T05.2	Traumatic amputation of both arms (any level)	..	..
T05.3	Traumatic amputation of both feet	..	..
T05.4	Traumatic amputation of one foot and other leg (any level, except foot)	0.0000	1.0000
T05.5	Traumatic amputation of both legs (any level)	0.5000	..
T05.6	Traumatic amputation of upper and lower limbs, any combination (any level)	..	..
T05.8	Traumatic amputations involving other combinations of body regions	1.0000	1.0000
T05.9	Multiple traumatic amputations, unspecified	..	1.0000
T06.0	Injuries of brain and cranial nerves with injuries of nerves and spinal cord at neck level	..	..
T06.1	Injuries of nerves and spinal cord involving other multiple body regions	1.0000	1.0000
T06.2	Injuries of nerves involving multiple body regions	1.0000	1.0000
T06.3	Injuries of blood vessels involving multiple body regions	1.0000	0.6000
T06.4	Injuries of muscles and tendons involving multiple body regions	1.0000	1.0000
T06.5	Injuries of intrathoracic organs with intra-abdominal and pelvic organs	0.9286	1.0000
T06.8	Other specified injuries involving multiple body regions	0.9468	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T07	Unspecified multiple injuries	0.9333	1.0000
T08.0	Fracture of spine, level unspecified, closed	0.9028	1.0000
T08.1	Fracture of spine, level unspecified, open	1.0000	1.0000
T09.00	Unspecified superficial injury of trunk, level unspecified	1.0000	1.0000
T09.01	Abrasion of trunk, level unspecified	0.9930	0.9375
T09.02	Blister of trunk, level unspecified	1.0000	..
T09.03	Insect bite of trunk, level unspecified	1.0000	1.0000
T09.04	Superficial foreign body (splinter) of trunk, level unspecified	1.0000	..
T09.05	Contusion of trunk, level unspecified	0.9886	0.9778
T09.08	Other superficial injury of trunk, level unspecified	1.0000	1.0000
T09.1	Open wound of trunk, level unspecified	1.0000	1.0000
T09.2	Dislocation, sprain and strain of unspecified joint and ligament of trunk	0.9946	1.0000
T09.3	Injury of spinal cord, level unspecified	0.8444	0.8846
T09.4	Injury of unspecified nerve, spinal nerve root and plexus of trunk	0.8750	1.0000
T09.5	Injury of unspecified muscle and tendon of trunk	0.9897	1.0000
T09.6	Traumatic amputation of trunk, level unspecified	..	..
T09.8	Other specified injuries of trunk, level unspecified	0.9920	1.0000
T09.9	Unspecified injury of trunk, level unspecified	0.9850	1.0000
T10.0	Fracture of upper limb, level unspecified, closed	0.6000	0.5000
T10.1	Fracture of upper limb, level unspecified, open	0.7500	..
T11.00	Unspecified superficial injury of upper limb, level unspecified	1.0000	1.0000
T11.01	Abrasion of upper limb, level unspecified	0.9870	0.9200
T11.02	Blister of upper limb, level unspecified	1.0000	1.0000
T11.03	Insect bite of upper limb, level unspecified	1.0000	1.0000
T11.04	Superficial foreign body (splinter) of upper limb, level unspecified	1.0000	..
T11.05	Contusion of upper limb, level unspecified	0.9512	0.9615
T11.08	Other superficial injury of upper limb, level unspecified	1.0000	0.0000
T11.1	Open wound of upper limb, level unspecified	0.9748	0.9355
T11.2	Dislocation, sprain and strain of unspecified joint and ligament of upper limb, level unspecified	1.0000	1.0000
T11.3	Injury of unspecified nerve of upper limb, level unspecified	1.0000	1.0000
T11.4	Injury of unspecified blood vessel of upper limb, level unspecified	1.0000	1.0000
T11.5	Injury of unspecified muscle and tendon of upper limb, level unspecified	1.0000	1.0000
T11.6	Traumatic amputation of upper limb, level unspecified	0.0000	1.0000
T11.8	Other specified injuries of upper limb, level unspecified	1.0000	1.0000
T11.9	Unspecified injury of upper limb, level unspecified	1.0000	..
T120	Fracture of lower limb, level unspecified, closed	0.5000	0.3333
T121	Fracture of lower limb, level unspecified, open	..	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T13.00	Unspecified superficial injury of lower limb, level unspecified	1.0000	..
T13.01	Abrasion of lower limb, level unspecified	0.9846	1.0000
T13.02	Blister of lower limb, level unspecified	0.9545	1.0000
T13.03	Insect bite of lower limb, level unspecified	1.0000	1.0000
T13.04	Superficial foreign body (splinter) of lower limb, level unspecified	1.0000	1.0000
T13.05	Contusion of lower limb, level unspecified	0.9749	0.9143
T13.08	Other superficial injury of lower limb, level unspecified	1.0000	..
T13.1	Open wound of lower limb, level unspecified	0.9880	0.9434
T13.2	Dislocation, sprain and strain of unspecified joint and ligament of lower limb, level unspecified	1.0000	1.0000
T13.3	Injury of unspecified nerve of lower limb, level unspecified	1.0000	0.8750
T13.4	Injury of unspecified blood vessel of lower limb, level unspecified	1.0000	1.0000
T13.5	Injury of unspecified muscle and tendon of lower limb, level unspecified	1.0000	0.9545
T13.6	Traumatic amputation of lower limb, level unspecified	1.0000	..
T13.8	Other specified injuries of lower limb, level unspecified	0.9565	..
T13.9	Unspecified injury of lower limb, level unspecified	0.9846	0.6667
T14.00	Unspecified superficial injury of unspecified body region	1.0000	1.0000
T14.01	Abrasion of unspecified body region	0.9906	0.7500
T14.02	Blister of unspecified body region	1.0000	1.0000
T14.03	Insect bite of unspecified body region	1.0000	1.0000
T14.04	Superficial foreign body (splinter) of unspecified body region	1.0000	1.0000
T14.05	Contusion of unspecified body region	0.9880	0.9556
T14.08	Other superficial injury of unspecified body region	0.9919	1.0000
T14.1	Open wound of unspecified body region	0.9665	1.0000
T14.20	Fracture of unspecified body region, closed	1.0000	0.0000
T14.21	Fracture of unspecified body region, open	1.0000	..
T14.3	Dislocation, sprain and strain of unspecified body region	1.0000	1.0000
T14.4	Injury of nerve(s) of unspecified body region	0.9459	1.0000
T14.5	Injury of blood vessel(s) of unspecified body region	0.9787	1.0000
T14.6	Injury of muscles and tendons of unspecified body region	1.0000	1.0000
T14.7	Crushing injury and traumatic amputation of unspecified body region	1.0000	1.0000
T14.8	Other injuries of unspecified body region	0.9710	1.0000
T14.9	Injury, unspecified	0.9822	1.0000
T15.0	Foreign body in cornea	1.0000	1.0000
T15.1	Foreign body in conjunctival sac	1.0000	1.0000
T15.8	Foreign body in other and multiple parts of external eye	0.9839	1.0000
T15.9	Foreign body on external eye, part unspecified	1.0000	1.0000
T16	Foreign body in ear	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T17.0	Foreign body in nasal sinus	1.0000	1.0000
T17.1	Foreign body in nostril	1.0000	1.0000
T17.2	Foreign body in pharynx	0.9861	1.0000
T17.3	Foreign body in larynx	0.9516	0.8929
T17.4	Foreign body in trachea	0.9167	0.9474
T17.5	Foreign body in bronchus	0.9811	1.0000
T17.8	Foreign body in other and multiple parts of respiratory tract	0.9043	1.0000
T17.9	Foreign body in respiratory tract, part unspecified	0.9291	0.9618
T18.0	Foreign body in mouth	1.0000	1.0000
T18.1	Foreign body in oesophagus	0.9965	1.0000
T18.2	Foreign body in stomach	1.0000	1.0000
T18.3	Foreign body in small intestine	0.9556	1.0000
T18.4	Foreign body in colon	1.0000	1.0000
T18.5	Foreign body in anus and rectum	1.0000	1.0000
T18.8	Foreign body in other and multiple parts of alimentary tract	1.0000	1.0000
T18.9	Foreign body in alimentary tract, part unspecified	1.0000	1.0000
T19.0	Foreign body in urethra	0.9855	1.0000
T19.1	Foreign body in bladder	1.0000	1.0000
T19.2	Foreign body in vulva and vagina	1.0000	1.0000
T19.3	Foreign body in uterus (any part)	..	..
T19.8	Foreign body in other and multiple parts of genitourinary tract	1.0000	1.0000
T19.9	Foreign body in genitourinary tract, part unspecified	..	1.0000
T20.0	Burn of unspecified thickness of head and neck	0.9840	1.0000
T20.1	Erythema of head and neck	0.9979	0.9890
T20.2	Partial thickness (blisters, epidermal loss) burn of head and neck	0.9860	0.9886
T20.3	Full thickness burn of head and neck	0.8528	0.8889
T21.00	Burn of unspecified thickness of trunk, unspecified site	1.0000	1.0000
T21.01	Burn of unspecified thickness of trunk, breast	1.0000	1.0000
T21.02	Burn of unspecified thickness of trunk, chest wall	0.9783	1.0000
T21.03	Burn of unspecified thickness of trunk, abdominal wall	0.9767	1.0000
T21.04	Burn of unspecified thickness of trunk, back	0.9787	0.9167
T21.05	Burn of unspecified thickness of trunk, genitalia	0.9615	..
T21.09	Burn of unspecified thickness of trunk, other	1.0000	1.0000
T21.10	Erythema of trunk, unspecified site	1.0000	..
T21.11	Erythema of trunk, breast	0.9630	1.0000
T21.12	Erythema of trunk, chest wall	0.9959	1.0000
T21.13	Erythema of trunk, abdominal wall	0.9781	0.9756

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T21.14	Erythema of trunk, back	1.0000	1.0000
T21.15	Erythema of trunk, genitalia	1.0000	1.0000
T21.19	Erythema of trunk, other	1.0000	0.8889
T21.20	Partial thickness (blisters, epidermal loss) burn of trunk, unspecified site	1.0000	1.0000
T21.21	Partial thickness (blisters, epidermal loss) burn of trunk, breast	1.0000	0.9500
T21.22	Partial thickness (blisters, epidermal loss) burn of trunk, chest wall	0.9895	0.9815
T21.23	Partial thickness (blisters, epidermal loss) burn of trunk, abdominal wall	0.9786	0.9600
T21.24	Partial thickness (blisters, epidermal loss) burn of trunk, back	0.9713	0.9573
T21.25	Partial thickness (blisters, epidermal loss) burn of trunk, genitalia	0.9709	0.9524
T21.29	Partial thickness (blisters, epidermal loss) burn of trunk, other	0.9577	1.0000
T21.30	Full thickness burn of trunk, unspecified site	0.7273	1.0000
T21.31	Full thickness burn of trunk, breast	0.8039	0.9286
T21.32	Full thickness burn of trunk, chest wall	0.8838	0.8400
T21.33	Full thickness burn of trunk, abdominal wall	0.8474	0.8222
T21.34	Full thickness burn of trunk, back	0.8707	0.8727
T21.35	Full thickness burn of trunk, genitalia	0.7632	0.8750
T21.39	Full thickness burn of trunk, other	0.7755	0.8500
T22.00	Burn of unspecified thickness of shoulder and upper limb, except wrist and hand, upper limb, unspecified site	1.0000	1.0000
T22.01	Burn of unspecified thickness of shoulder and upper limb, except wrist and hand, forearm and elbow	1.0000	1.0000
T22.02	Burn of unspecified thickness of shoulder and upper limb, except wrist and hand, upper arm and shoulder region	1.0000	1.0000
T22.10	Erythema of shoulder and upper limb, except wrist and hand, upper limb, unspecified site	1.0000	1.0000
T22.11	Erythema of shoulder and upper limb, except wrist and hand, forearm and elbow	0.9966	0.9677
T22.12	Erythema of shoulder and upper limb, except wrist and hand, upper arm and shoulder region	1.0000	0.9744
T22.20	Partial thickness(blisters, epidermal loss) burn of shoulder and upper limb, except wrist and hand, upper limb, unspecified site	0.9921	1.0000
T22.21	Partial thickness (blisters, epidermal loss) burn of shoulder and upper limb, except wrist and hand, forearm and elbow	0.9933	0.9782
T22.22	Partial thickness (blisters, epidermal loss) burn of shoulder and upper limb, except wrist and hand, upper arm and shoulder region	0.9859	0.9888
T22.30	Full thickness burn of shoulder and upper limb, except wrist and hand, unspecified site	0.7674	1.0000
T22.31	Full thickness burn of shoulder and upper limb, except wrist and hand, forearm and elbow	0.9167	0.9278
T22.32	Full thickness burn of shoulder and upper limb, except wrist and hand, upper arm and shoulder region	0.9040	0.8831

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T23.0	Burn of unspecified thickness of wrist and hand	0.9884	1.0000
T23.1	Erythema of wrist and hand	1.0000	1.0000
T23.2	Partial thickness (blisters, epidermal loss) burn of wrist and hand	0.9933	0.9858
T23.3	Full thickness burn of wrist and hand	0.9609	0.9750
T24.0	Burn of unspecified thickness of hip and lower limb, except ankle and foot	0.9810	1.0000
T24.1	Erythema of hip and lower limb, except ankle and foot	0.9872	0.9882
T24.2	Partial thickness(blisters, epidermal loss) burn of hip and lower limb, except ankle and foot	0.9884	0.9760
T24.3	Full thickness burn of hip and lower limb, except ankle and foot	0.9438	0.9561
T25.0	Burn of unspecified thickness of ankle and foot	1.0000	1.0000
T25.1	Erythema of ankle and foot	0.9769	0.9706
T25.2	Partial thickness(blisters, epidermal loss) burn of ankle and foot	0.9933	0.9847
T25.3	Full thickness burn of ankle and foot	0.9608	0.9789
T26.0	Burn of eyelid and periorcular area	0.9754	1.0000
T26.1	Burn of cornea and conjunctival sac	0.9781	1.0000
T26.2	Burn with resulting rupture and destruction of eyeball	..	1.0000
T26.3	Burn of other parts of eye and adnexa	1.0000	..
T26.4	Burn of eye and adnexa, part unspecified	0.9915	0.8889
T27.0	Burn of larynx and trachea	0.8358	0.8889
T27.1	Burn involving larynx and trachea with lung	0.6667	0.5000
T27.2	Burn of other parts of respiratory tract	1.0000	..
T27.3	Burn of respiratory tract, part unspecified	0.7895	1.0000
T28.0	Burn of mouth and pharynx	0.9516	0.9375
T28.1	Burn of oesophagus	0.9432	0.9286
T28.2	Burn of other parts of alimentary tract	0.8710	1.0000
T28.3	Burn of internal genitourinary organs	1.0000	0.0000
T28.4	Burn of other and unspecified internal organs	1.0000	1.0000
T29.0	Burns of multiple regions, unspecified thickness	1.0000	0.0000
T29.1	Burns of multiple regions, no more than erythema burns mentioned	1.0000	1.0000
T29.2	Burns of multiple regions, no more than partial thickness burns mentioned	0.9375	1.0000
T29.3	Burns of multiple regions, at least one burn of full thickness mentioned	0.3438	0.5000
T30.0	Burn of unspecified body region, unspecified thickness	0.9091	1.0000
T30.1	Erythema, body region unspecified	..	..
T30.2	Burn of partial thickness, body region unspecified	1.0000	1.0000
T30.3	Burn of full thickness, body region unspecified	1.0000	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T31.00	Burns involving less than 10% of body surface, less than 10% full thickness or unspecified	0.9945	0.9947
T31.10	Burns involving 10–19% of body surface, less than 10% full thickness or unspecified	0.9842	0.9821
T31.11	Burns involving 10–19% of body surface,10-19% full thickness	0.9650	1.0000
T31.20	Burns involving 20–29% of body surface, less than 10% full thickness or unspecified	0.9923	0.9189
T31.21	Burns involving 20–29% of body surface,10-19% full thickness	1.0000	1.0000
T31.22	Burns involving 20–29% of body surface,20-29% full thickness	0.9592	1.0000
T31.30	Burns involving 30–39% of body surface, less than 10% full thickness or unspecified	0.9888	1.0000
T31.31	Burns involving 30–39% of body surface,10-19% full thickness	0.9286	1.0000
T31.32	Burns involving 30–39% of body surface,20-29% full thickness	0.8667	1.0000
T31.33	Burns involving 30–39% of body surface,30-39% full thickness	0.8571	1.0000
T31.40	Burns involving 40–49% of body surface, less than 10% full thickness or unspecified	0.8276	1.0000
T31.41	Burns involving 40–49% of body surface,10–19% full thickness	0.8000	1.0000
T31.42	Burns involving 40–49% of body surface,20–29% full thickness	0.8000	1.0000
T31.43	Burns involving 40–49% of body surface,30–39% full thickness	1.0000	..
T31.44	Burns involving 40–49% of body surface,40–49% full thickness	0.6923	0.8000
T31.50	Burns involving 50–59% of body surface, less than 10% full thickness or unspecified	0.9444	1.0000
T31.51	Burns involving 50–59% of body surface,10–19% full thickness	1.0000	..
T31.52	Burns involving 50–59% of body surface,20–29% full thickness	1.0000	0.0000
T31.53	Burns involving 50–59% of body surface,30–39% full thickness	..	1.0000
T31.54	Burns involving 50–59% of body surface,40–49% full thickness	0.6667	..
T31.55	Burns involving 50–59% of body surface,50–59% full thickness	0.6000	0.6667
T31.60	Burns involving 60–69% of body surface, less than 10% full thickness or unspecified	0.8333	1.0000
T31.61	Burns involving 60–69% of body surface,10–19% full thickness	0.5000	..
T31.62	Burns involving 60–69% of body surface,20–29% full thickness	0.0000	..
T31.63	Burns involving 60–69% of body surface,30–39% full thickness	1.0000	..
T31.64	Burns involving 60–69% of body surface,40–49% full thickness	..	..
T31.65	Burns involving 60–69% of body surface,50–59% full thickness	0.4286	0.0000
T31.66	Burns involving 60–69% of body surface,60–69% full thickness	0.6429	..
T31.70	Burns involving 70–79% of body surface, less than 10% full thickness or unspecified	0.6667	1.0000
T31.71	Burns involving 70–79% of body surface,10–19% full thickness	1.0000	..
T31.72	Burns involving 70–79% of body surface,20–29% full thickness	0.0000	..
T31.73	Burns involving 70–79% of body surface,30–39% full thickness	..	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T31.74	Burns involving 70–69% of body surface,40–49% full thickness	1.0000	..
T31.75	Burns involving 70–79% of body surface,50–59% full thickness	0.0000	..
T31.76	Burns involving 70–79% of body surface,60–69% full thickness	1.0000	..
T31.77	Burns involving 70–79% of body surface,70–79% full thickness	0.4286	0.0000
T31.80	Burns involving 80–89% of body surface, less than 10% full thickness or unspecified	1.0000	0.0000
T31.81	Burns involving 80–89% of body surface,10–19% full thickness	0.0000	..
T31.82	Burns involving 80–89% of body surface,20–29% full thickness	..	..
T31.83	Burns involving 80–89% of body surface,30–39% full thickness	0.0000	..
T31.84	Burns involving 80–89% of body surface,40–49% full thickness	0.0000	0.0000
T31.85	Burns involving 80–89% of body surface,50–59% full thickness	..	..
T31.86	Burns involving 80–89% of body surface,60–69% full thickness	..	..
T31.87	Burns involving 80–89% of body surface,70–79% full thickness	0.5000	1.0000
T31.88	Burns involving 80–89% of body surface,80–89% full thickness	0.4000	..
T31.90	Burns involving 90% or more of body surface, less than 10% full thickness or unspecified	1.0000	0.6667
T31.91	Burns involving 90% or more of body surface,10–19% full thickness	..	..
T31.92	Burns involving 90% or more of body surface,20–29% full thickness	..	..
T31.93	Burns involving 90% or more of body surface,30–39% full thickness	..	..
T31.94	Burns involving 90% or more of body surface,40–49% full thickness	..	..
T31.95	Burns involving 90% or more of body surface,50–59% full thickness	..	..
T31.96	Burns involving 90% or more of body surface,60–69% full thickness	0.0000	..
T31.97	Burns involving 90% or more of body surface,70–79% full thickness	0.0000	..
T31.98	Burns involving 90% or more of body surface,80–89% full thickness	0.0000	..
T31.99	Burns involving 90% or more of body surface,90% or more of body surface full thickness	0.0000	0.0000
T33.0	Superficial frostbite of head	..	..
T33.1	Superficial frostbite of neck	1.0000	..
T33.2	Superficial frostbite of thorax	..	..
T33.3	Superficial frostbite of abdominal wall, lower back and pelvis	..	..
T33.4	Superficial frostbite of arm	..	1.0000
T33.5	Superficial frostbite of wrist and hand	..	1.0000
T33.6	Superficial frostbite of hip and thigh	..	..
T33.7	Superficial frostbite of knee and lower leg	..	1.0000
T33.8	Superficial frostbite of ankle and foot	1.0000	..
T33.9	Superficial frostbite of other and unspecified sites	..	..
T34.0	Frostbite with tissue necrosis of head	1.0000	..
T34.1	Frostbite with tissue necrosis of neck	1.0000	..
T34.2	Frostbite with tissue necrosis of thorax	..	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T34.3	Frostbite with tissue necrosis of abdominal wall, lower back and pelvis	..	..
T34.4	Frostbite with tissue necrosis of arm	..	..
T34.5	Frostbite with tissue necrosis of wrist and hand	1.0000	..
T34.6	Frostbite with tissue necrosis of hip and thigh	..	..
T34.7	Frostbite with tissue necrosis of knee and lower leg	..	..
T34.8	Frostbite with tissue necrosis of ankle and foot	..	..
T34.9	Frostbite with tissue necrosis of other and unspecified sites	..	1.0000
T35.0	Superficial frostbite involving multiple body regions	..	..
T35.1	Frostbite with tissue necrosis involving multiple body regions	1.0000	..
T35.2	Unspecified frostbite of head and neck	..	..
T35.3	Unspecified frostbite of thorax, abdomen, lower back and pelvis	1.0000	..
T35.4	Unspecified frostbite of upper limb	..	1.0000
T35.5	Unspecified frostbite of lower limb	1.0000	1.0000
T35.6	Unspecified frostbite involving multiple body regions	..	..
T35.7	Unspecified frostbite of unspecified site	..	..
T36.0	Poisoning by penicillins	0.9961	1.0000
T36.1	Poisoning by cephalosporins and other β -lactam antibiotics	1.0000	1.0000
T36.2	Poisoning by chloramphenicol group	1.0000	..
T36.3	Poisoning by macrolides	1.0000	1.0000
T36.4	Poisoning by tetracyclines	1.0000	1.0000
T36.5	Poisoning by aminoglycosides	1.0000	1.0000
T36.6	Poisoning by rifamycins	1.0000	1.0000
T36.7	Poisoning by antifungal antibiotics, systemically used	1.0000	1.0000
T36.8	Poisoning by other systemic antibiotics	1.0000	1.0000
T36.9	Poisoning by systemic antibiotic, unspecified	0.9839	1.0000
T37.0	Poisoning by sulfonamides	1.0000	1.0000
T37.1	Poisoning by antimycobacterial drugs	1.0000	1.0000
T37.2	Poisoning by antimalarials and drugs acting on other blood protozoa	0.9810	1.0000
T37.3	Poisoning by other antiprotozoal drugs	1.0000	1.0000
T37.4	Poisoning by anthelmintics	1.0000	1.0000
T37.5	Poisoning by antiviral drugs	1.0000	1.0000
T37.8	Poisoning by other specified systemic anti-infectives and antiparasitics	0.9821	1.0000
T37.9	Poisoning by systemic anti-infective and antiparasitic, unspecified	1.0000	1.0000
T38.0	Poisoning by glucocorticoids and synthetic analogues	0.9903	1.0000
T38.1	Poisoning by thyroid hormones and substitutes	0.9952	1.0000
T38.2	Poisoning by antithyroid drugs	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T38.3	Poisoning by insulin and oral hypoglycaemic (antidiabetic) drugs	0.9829	1.0000
T38.4	Poisoning by oral contraceptives	1.0000	1.0000
T38.5	Poisoning by other oestrogens and progestogens	1.0000	1.0000
T38.6	Poisoning by antigonadotrophins, anti-oestrogens, antiandrogens, not elsewhere classified	0.8571	1.0000
T38.7	Poisoning by androgens and anabolic congeners	1.0000	1.0000
T38.8	Poisoning by other and unspecified hormones and their synthetic substitutes	1.0000	1.0000
T38.9	Poisoning by other and unspecified hormone antagonists	1.0000	..
T39.0	Poisoning by salicylates	0.9950	0.9942
T39.1	Poisoning by 4-Aminophenol derivatives	0.9957	0.9979
T39.2	Poisoning by pyrazolone derivatives	1.0000	1.0000
T39.3	Poisoning by other nonsteroidal anti-inflammatory drugs (NSAID)	0.9948	0.9973
T39.4	Poisoning by antirheumatics, not elsewhere classified	1.0000	0.9925
T39.8	Poisoning by other nonopioid analgesics and antipyretics, not elsewhere classified	0.9941	1.0000
T39.9	Poisoning by nonopioid analgesic, antipyretic and antirheumatic, unspecified	0.9888	1.0000
T40.0	Poisoning by opium	1.0000	1.0000
T40.1	Poisoning by heroin	0.9573	1.0000
T40.2	Poisoning by other opioids	0.9829	0.9893
T40.3	Poisoning by methadone	0.9855	1.0000
T40.4	Poisoning by other synthetic narcotics	0.9802	0.9875
T40.5	Poisoning by cocaine	0.9504	1.0000
T40.6	Poisoning by other and unspecified narcotics	0.9850	0.9512
T40.7	Poisoning by cannabis (derivatives)	0.9909	1.0000
T40.8	Poisoning by lysergide (LSD)	1.0000	1.0000
T40.9	Poisoning by other and unspecified psychodysleptics (hallucinogens)	0.9901	1.0000
T41.0	Poisoning by inhaled anaesthetics	1.0000	..
T41.1	Poisoning by intravenous anaesthetics	0.9524	1.0000
T41.2	Poisoning by other and unspecified general anaesthetics	1.0000	1.0000
T41.3	Poisoning by local anaesthetics	1.0000	1.0000
T41.4	Poisoning by anaesthetic, unspecified	1.0000	1.0000
T41.5	Poisoning by therapeutic gases	1.0000	..
T42.0	Poisoning by hydantoin derivatives	0.9959	0.9867
T42.1	Poisoning by iminostilbenes	0.9967	0.9916
T42.2	Poisoning by succinimides and oxazolidinediones	1.0000	1.0000
T42.3	Poisoning by barbiturates	0.9462	1.0000
T42.4	Poisoning by benzodiazepines	0.9944	0.9912

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T42.5	Poisoning by mixed antiepileptics, not elsewhere classified	1.0000	1.0000
T42.6	Poisoning by other antiepileptic and sedative-hypnotic drugs	0.9964	0.9980
T42.7	Poisoning by antiepileptic and sedative-hypnotic drugs, unspecified	0.9915	0.9898
T42.8	Poisoning by antiparkinsonism drugs and other central muscle-tone depressants	0.9921	1.0000
T43.0	Poisoning by tricyclic and tetracyclic antidepressants	0.9915	0.9918
T43.1	Poisoning by monoamine-oxidase-inhibitor antidepressants	1.0000	0.9839
T43.2	Poisoning by other and unspecified antidepressants	0.9968	0.9954
T43.3	Poisoning by phenothiazine antipsychotics and neuroleptics	0.9973	1.0000
T43.4	Poisoning by butyrophenone and thioxanthene neuroleptics	0.9960	1.0000
T43.5	Poisoning by other and unspecified antipsychotics and neuroleptics	0.9974	0.9909
T43.6	Poisoning by psychostimulants with potential for use disorder	0.9868	0.9928
T43.8	Poisoning by other psychotropic drugs, not elsewhere classified	0.9950	0.9825
T43.9	Poisoning by psychotropic drug, unspecified	0.9444	1.0000
T44.0	Poisoning by anticholinesterase agents	1.0000	1.0000
T44.1	Poisoning by other parasympathomimetics (cholinergics)	1.0000	..
T44.2	Poisoning by ganglionic blocking drugs, not elsewhere classified	1.0000	1.0000
T44.3	Poisoning by other parasympatholytics (anticholinergics and antimuscarinics) and spasmolytics, not elsewhere classified	0.9978	1.0000
T44.4	Poisoning by predominantly α -adrenoreceptor agonists, not elsewhere classified	1.0000	1.0000
T44.5	Poisoning by predominantly β -adrenoreceptor agonists, not elsewhere classified	1.0000	1.0000
T44.6	Poisoning by α -Adrenoreceptor antagonists, not elsewhere classified	1.0000	1.0000
T44.7	Poisoning by β -Adrenoreceptor antagonists, not elsewhere classified	0.9904	1.0000
T44.8	Poisoning by centrally acting and adrenergic-neuron-blocking agents, not elsewhere classified	1.0000	1.0000
T44.9	Poisoning by other and unspecified drugs primarily affecting the autonomic nervous system	0.9937	1.0000
T45.0	Poisoning by antiallergic and antiemetic drugs	0.9963	1.0000
T45.1	Poisoning by antineoplastic and immunosuppressive drugs	0.9945	1.0000
T45.2	Poisoning by vitamins, not elsewhere classified	1.0000	1.0000
T45.3	Poisoning by enzymes, not elsewhere classified	1.0000	..
T45.4	Poisoning by iron and its compounds	1.0000	1.0000
T45.5	Poisoning by anticoagulants	0.9862	1.0000
T45.6	Poisoning by fibrinolysis-affecting drugs	1.0000	1.0000
T45.7	Poisoning by anticoagulant antagonists, vitamin K and other coagulants	1.0000	1.0000
T45.8	Poisoning by other primarily systemic and haematological agents	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T45.9	Poisoning by primarily systemic and haematological agent, unspecified	1.0000	..
T46.0	Poisoning by cardiac-stimulant glycosides and drugs of similar action	0.9599	1.0000
T46.1	Poisoning by calcium-channel blockers	0.9767	0.9730
T46.2	Poisoning by other antidysrhythmic drugs, not elsewhere classified	0.9685	0.9333
T46.3	Poisoning by coronary vasodilators, not elsewhere classified	0.9819	1.0000
T46.4	Poisoning by angiotensin-converting-enzyme inhibitors	0.9952	0.9701
T46.5	Poisoning by other antihypertensive drugs, not elsewhere classified	0.9960	0.9896
T46.6	Poisoning by antihyperlipidaemic and antiarteriosclerotic drugs	0.9767	1.0000
T46.7	Poisoning by peripheral vasodilators	1.0000	0.6667
T46.8	Poisoning by antivaricose drugs, including sclerosing agents	..	1.0000
T46.9	Poisoning by other and unspecified agents primarily affecting the cardiovascular system	0.9394	1.0000
T47.0	Poisoning by histamine H2-receptor antagonists	0.9946	1.0000
T47.1	Poisoning by other antacids and anti-gastric-secretion drugs	0.9855	0.9630
T47.2	Poisoning by stimulant laxatives	1.0000	1.0000
T47.3	Poisoning by saline and osmotic laxatives	1.0000	1.0000
T47.4	Poisoning by other laxatives	1.0000	1.0000
T47.5	Poisoning by digestants	1.0000	1.0000
T47.6	Poisoning by antidiarrhoeal drugs	1.0000	1.0000
T47.7	Poisoning by emetics	..	..
T47.8	Poisoning by other agents primarily affecting the gastrointestinal system	0.9878	1.0000
T47.9	Poisoning by agent primarily affecting the gastrointestinal system, unspecified	1.0000	..
T48.0	Poisoning by oxytocic drugs	1.0000	..
T48.1	Poisoning by skeletal muscle relaxants (neuromuscular blocking agents)	0.9412	1.0000
T48.2	Poisoning by other and unspecified agents primarily acting on muscles	0.9231	..
T48.3	Poisoning by antitussives	1.0000	1.0000
T48.4	Poisoning by expectorants	1.0000	1.0000
T48.5	Poisoning by anti-common-cold drugs	1.0000	1.0000
T48.6	Poisoning by antiasthmatics, not elsewhere classified	0.9851	1.0000
T48.7	Poisoning by other and unspecified agents primarily acting on the respiratory system	1.0000	1.0000
T49.0	Poisoning by local antifungal, anti-infective and anti-inflammatory drugs, not elsewhere classified	0.9883	1.0000
T49.1	Poisoning by antipruritics	1.0000	1.0000
T49.2	Poisoning by local astringents and local detergents	1.0000	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T49.3	Poisoning by emollients, demulcents and protectants	1.0000	0.8571
T49.4	Poisoning by keratolytics, keratoplastics and other hair treatment drugs and preparations	1.0000	1.0000
T49.5	Poisoning by ophthalmological drugs and preparations	1.0000	..
T49.6	Poisoning by otorhinolaryngological drugs and preparations	1.0000	1.0000
T49.7	Poisoning by dental drugs, topically applied	1.0000	1.0000
T49.8	Poisoning by other topical agents	1.0000	1.0000
T49.9	Poisoning by topical agent, unspecified	1.0000	1.0000
T50.0	Poisoning by mineralocorticoids and their antagonists	1.0000	1.0000
T50.1	Poisoning by loop (high-ceiling) diuretics	0.9878	0.9697
T50.2	Poisoning by carbonic-anhydrase inhibitors, benzothiadiazides and other diuretics	0.9925	1.0000
T50.3	Poisoning by electrolytic, caloric and water-balance agents	1.0000	1.0000
T50.4	Poisoning by drugs affecting uric acid metabolism	0.9524	0.9091
T50.5	Poisoning by appetite depressants	1.0000	1.0000
T50.6	Poisoning by antidotes and chelating agents, not elsewhere classified	0.9744	1.0000
T50.7	Poisoning by analeptics and opioid receptor antagonists	1.0000	1.0000
T50.8	Poisoning by diagnostic agents	1.0000	1.0000
T50.9	Poisoning by other and unspecified drugs, medicaments and biological substances	0.9894	0.9954
T51.0	Toxic effect of ethanol	0.9966	0.9966
T51.1	Toxic effect of methanol	0.9595	1.0000
T51.2	Toxic effect of 2-Propanol	1.0000	1.0000
T51.3	Toxic effect of fusel oil	0.8889	1.0000
T51.8	Toxic effect of other alcohols	1.0000	1.0000
T51.9	Toxic effect of alcohol, unspecified	0.9957	1.0000
T52.0	Toxic effect of petroleum products	0.9928	1.0000
T52.1	Toxic effect of benzene	1.0000	..
T52.2	Toxic effect of homologues of benzene	1.0000	1.0000
T52.3	Toxic effect of glycols	1.0000	1.0000
T52.4	Toxic effect of ketones	1.0000	1.0000
T52.8	Toxic effect of other organic solvents	0.9925	0.9783
T52.9	Toxic effect of organic solvent, unspecified	0.9882	0.9615
T53.0	Toxic effect of carbon tetrachloride	1.0000	..
T53.1	Toxic effect of chloroform	1.0000	1.0000
T53.2	Toxic effect of trichloroethylene	1.0000	..
T53.3	Toxic effect of tetrachloroethylene	1.0000	1.0000
T53.4	Toxic effect of dichloromethane	..	..
T53.5	Toxic effect of chlorofluorocarbons	1.0000	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T53.6	Toxic effect of other halogen derivatives of aliphatic hydrocarbons	1.0000	1.0000
T53.7	Toxic effect of other halogen derivatives of aromatic hydrocarbons	1.0000	..
T53.9	Toxic effect of halogen derivative of aliphatic and aromatic hydrocarbons, unspecified	1.0000	1.0000
T54.0	Toxic effect of phenol and phenol homologues	1.0000	..
T54.1	Toxic effect of other corrosive organic compounds	1.0000	..
T54.2	Toxic effect of corrosive acids and acid-like substances	0.9894	1.0000
T54.3	Toxic effect of corrosive alkalis and alkali-like substances	0.9635	1.0000
T54.9	Toxic effect of corrosive substance, unspecified	1.0000	1.0000
T55	Toxic effect of soaps and detergents	1.0000	1.0000
T56.0	Toxic effect of lead and its compounds	0.9796	1.0000
T56.1	Toxic effect of mercury and its compounds	0.9000	1.0000
T56.2	Toxic effect of chromium and its compounds	1.0000	..
T56.3	Toxic effect of cadmium and its compounds	1.0000	..
T56.4	Toxic effect of copper and its compounds	1.0000	1.0000
T56.5	Toxic effect of zinc and its compounds	1.0000	..
T56.6	Toxic effect of tin and its compounds	..	..
T56.7	Toxic effect of beryllium and its compounds	..	..
T56.8	Toxic effect of other metals	1.0000	1.0000
T56.9	Toxic effect of metal, unspecified	1.0000	..
T57.0	Toxic effect of arsenic and its compounds	0.7500	..
T57.1	Toxic effect of phosphorus and its compounds	1.0000	..
T57.2	Toxic effect of manganese and its compounds	..	..
T57.3	Toxic effect of hydrogen cyanide	..	..
T57.8	Toxic effect of other specified inorganic substances	1.0000	1.0000
T57.9	Toxic effect of inorganic substance, unspecified	1.0000	1.0000
T58	Toxic effect of carbon monoxide	0.9713	0.9873
T59.0	Toxic effect of nitrogen oxides	1.0000	1.0000
T59.1	Toxic effect of sulfur dioxide	1.0000	..
T59.2	Toxic effect of formaldehyde	1.0000	1.0000
T59.3	Toxic effect of lacrimogenic gas	..	1.0000
T59.4	Toxic effect of chlorine gas	1.0000	1.0000
T59.5	Toxic effect of fluorine gas and hydrogen fluoride	1.0000	..
T59.6	Toxic effect of hydrogen sulfide	1.0000	1.0000
T59.7	Toxic effect of carbon dioxide	0.9583	1.0000
T59.8	Toxic effect of other specified gases, fumes and vapours	0.9806	0.9787
T59.9	Toxic effect of gases, fumes and vapours, unspecified	0.9713	1.0000
T60.0	Toxic effect of organophosphate and carbamate insecticides	0.9628	0.9412

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T60.1	Toxic effect of halogenated insecticides	1.0000	1.0000
T60.2	Toxic effect of other insecticides	1.0000	1.0000
T60.3	Toxic effect of herbicides and fungicides	0.9857	0.8889
T60.4	Toxic effect of rodenticides	1.0000	1.0000
T60.8	Toxic effect of other pesticides	1.0000	1.0000
T60.9	Toxic effect of pesticide, unspecified	0.9589	1.0000
T61.0	Toxic effect of ciguatera fish poisoning	0.9783	1.0000
T61.1	Toxic effect of scombroid fish poisoning	1.0000	1.0000
T61.2	Toxic effect of other fish and shellfish poisoning	1.0000	1.0000
T61.8	Toxic effect of toxic effect of other seafoods	1.0000	1.0000
T61.9	Toxic effect of unspecified seafood	1.0000	1.0000
T62.0	Toxic effect of ingested mushrooms	1.0000	1.0000
T62.1	Toxic effect of ingested berries	1.0000	1.0000
T62.2	Toxic effect of other ingested (parts of) plant(s)	1.0000	1.0000
T62.8	Toxic effect of other specified noxious substances eaten as food	1.0000	1.0000
T62.9	Toxic effect of noxious substance eaten as food, unspecified	0.9975	1.0000
T63.0	Toxic effect of snake venom	0.9968	..
T63.1	Toxic effect of venom of other reptiles	1.0000	..
T63.2	Toxic effect of venom of scorpion	1.0000	..
T63.3	Toxic effect of venom of spider	1.0000	1.0000
T63.4	Toxic effect of venom of other arthropods	1.0000	1.0000
T63.5	Toxic effect of contact with fish	1.0000	..
T63.6	Toxic effect of contact with other marine animals	1.0000	1.0000
T63.8	Toxic effect of contact with other venomous animals	1.0000	1.0000
T63.9	Toxic effect of contact with unspecified venomous animal	1.0000	1.0000
T64	Toxic effect of aflatoxin and other mycotoxin food contaminants	1.0000	..
T65.0	Toxic effect of cyanides	1.0000	1.0000
T65.1	Toxic effect of strychnine and its salts	0.8750	..
T65.2	Toxic effect of tobacco and nicotine	1.0000	1.0000
T65.3	Toxic effect of nitroderivatives and aminoderivatives of benzene and its homologues	1.0000	1.0000
T65.4	Toxic effect of carbon disulfide	1.0000	..
T65.5	Toxic effect of nitroglycerin and other nitric acids and esters	..	..
T65.6	Toxic effect of paints and dyes, not elsewhere classified	1.0000	1.0000
T65.8	Toxic effect of other specified substances	0.9950	0.9783
T65.9	Toxic effect of unspecified substance	0.9669	1.0000
T66	Unspecified effects of radiation	0.9846	1.0000
T67.0	Heatstroke and sunstroke	0.9533	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T67.1	Heat syncope	1.0000	1.0000
T67.2	Heat cramp	1.0000	..
T67.3	Heat exhaustion, anhydrotic	1.0000	1.0000
T67.4	Heat exhaustion due to salt depletion	1.0000	..
T67.5	Heat exhaustion, unspecified	0.9925	1.0000
T67.6	Heat fatigue, transient	1.0000	..
T67.7	Heat oedema	..	..
T67.8	Other effects of heat and light	1.0000	..
T67.9	Effect of heat and light, unspecified	1.0000	1.0000
T68	Hypothermia	0.8293	0.8655
T69.0	Immersion hand and foot	1.0000	1.0000
T69.1	Chilblains	1.0000	1.0000
T69.8	Other specified effects of reduced temperature	1.0000	1.0000
T69.9	Effect of reduced temperature, unspecified	1.0000	1.0000
T70.0	Otitic barotrauma	1.0000	1.0000
T70.1	Sinus barotrauma	1.0000	..
T70.2	Other and unspecified effects of high altitude	1.0000	1.0000
T70.3	Caisson disease (decompression sickness)	1.0000	0.9911
T70.4	Effects of high-pressure fluids	1.0000	1.0000
T70.8	Other effects of air pressure and water pressure	1.0000	..
T70.9	Effect of air pressure and water pressure, unspecified	..	..
T71	Asphyxiation	0.7745	0.9141
T73.0	Effects of hunger	0.9688	1.0000
T73.1	Effects of thirst	1.0000	1.0000
T73.2	Exhaustion due to exposure	1.0000	1.0000
T73.3	Exhaustion due to excessive exertion	1.0000	1.0000
T73.8	Other effects of deprivation	1.0000	..
T73.9	Effect of deprivation, unspecified	1.0000	..
T74.0	Neglect or abandonment	0.9798	1.0000
T74.1	Physical abuse	0.9964	0.9583
T74.2	Sexual abuse	1.0000	1.0000
T74.3	Psychological abuse	1.0000	..
T74.8	Other maltreatment syndromes	0.9655	1.0000
T74.9	Maltreatment syndrome, unspecified	1.0000	0.9643
T75.0	Effects of lightning	1.0000	..
T75.1	Drowning and nonfatal submersion	0.8986	0.9565
T75.2	Effects of vibration	1.0000	..

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T75.3	Motion sickness	1.0000	1.0000
T75.4	Effects of electric current	0.9734	0.9880
T75.8	Other specified effects of external causes	1.0000	..
T78.0	Anaphylactic shock due to adverse food reaction	0.9950	0.9917
T78.1	Other adverse food reactions, not elsewhere classified	1.0000	1.0000
T78.2	Anaphylactic shock, unspecified	0.9977	1.0000
T78.3	Angioneurotic oedema	0.9959	1.0000
T78.4	Allergy, unspecified	1.0000	1.0000
T78.8	Other adverse effects, not elsewhere classified	1.0000	..
T78.9	Adverse effect, unspecified	1.0000	..
T79.0	Air embolism (traumatic)	0.9444	1.0000
T79.1	Fat embolism (traumatic)	0.8818	0.8857
T79.2	Traumatic secondary and recurrent haemorrhage	0.9759	1.0000
T79.3	Post-traumatic wound infection, not elsewhere classified	0.9877	0.9941
T79.4	Traumatic shock	0.6696	0.6623
T79.5	Traumatic anuria	0.7077	0.6190
T79.6	Traumatic ischaemia of muscle	0.9495	0.9895
T79.7	Traumatic subcutaneous emphysema	0.9318	0.9390
T79.8	Other early complications of trauma	0.9742	0.9419
T79.9	Unspecified early complication of trauma	0.9615	1.0000
T80.0	Air embolism following infusion, transfusion and therapeutic injection	1.0000	1.0000
T80.1	Vascular complications following infusion, transfusion and therapeutic injection	0.9952	1.0000
T80.2	Infections following infusion, transfusion and therapeutic injection	0.9647	0.9943
T80.3	ABO incompatibility reaction	0.6667	1.0000
T80.4	Rh incompatibility reaction	1.0000	..
T80.5	Anaphylactic shock due to serum	1.0000	1.0000
T80.6	Other serum reactions	0.9928	1.0000
T80.8	Other complications following infusion, transfusion and therapeutic injection	0.9503	0.9800
T80.9	Unspecified complication following infusion, transfusion and therapeutic injection	0.9815	0.8889
T81.0	Haemorrhage and haematoma complicating a procedure, not elsewhere classified	0.9850	0.9878
T81.1	Shock during or resulting from a procedure, not elsewhere classified	0.6759	0.7708
T81.2	Accidental puncture and laceration during a procedure, not elsewhere classified	0.9481	0.9752
T81.3	Disruption of operation wound, not elsewhere classified	0.9820	0.9754
T81.4	Infection following a procedure, not elsewhere classified	0.9850	0.9908

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T81.5	Foreign body accidentally left in body cavity or operation wound following a procedure	0.9958	1.0000
T81.6	Acute reaction to foreign substance accidentally left during a procedure	0.9583	1.0000
T81.7	Vascular complications following a procedure, not elsewhere classified	0.9760	0.9967
T81.8	Other complications of procedures, not elsewhere classified	0.9777	0.9754
T81.9	Unspecified complication of procedure	1.0000	1.0000
T82.0	Mechanical complication of heart valve prosthesis	0.9552	0.8966
T82.1	Mechanical complication of cardiac electronic device	0.9938	0.9937
T82.2	Mechanical complication of coronary artery bypass and valve grafts	0.7500	0.8000
T82.3	Mechanical complication of other vascular grafts	0.9595	0.9672
T82.4	Mechanical complication of vascular dialysis catheter	0.9756	0.9906
T82.5	Mechanical complication of other cardiac and vascular devices and implants	0.9799	0.9926
T82.6	Infection and inflammatory reaction due to cardiac valve prosthesis	0.8017	0.8750
T82.7	Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts	0.9661	0.9856
T82.8	Other complications of cardiac and vascular prosthetic devices, implants and grafts	0.9795	0.9817
T82.9	Unspecified complication of cardiac and vascular prosthetic device, implant and graft	0.9801	0.9783
T83.0	Mechanical complication of urinary (indwelling) catheter	0.9752	0.9783
T83.1	Mechanical complication of other urinary devices and implants	0.9900	0.9889
T83.2	Mechanical complication of graft of urinary organ	1.0000	0.7778
T83.3	Mechanical complication of intrauterine contraceptive device	1.0000	1.0000
T83.4	Mechanical complication of other prosthetic devices, implants and grafts in genital tract	1.0000	1.0000
T83.5	Infection and inflammatory reaction due to prosthetic device, implant and graft in urinary system	0.9700	0.9817
T83.6	Infection and inflammatory reaction due to prosthetic device, implant and graft in genital tract	0.9943	1.0000
T83.8	Other complications of genitourinary prosthetic devices, implants and grafts	0.9833	0.9943
T83.9	Unspecified complication of genitourinary prosthetic device, implant and graft	0.9802	0.9545
T84.0	Mechanical complication of internal joint prosthesis	0.9897	0.9902
T84.1	Mechanical complication of internal fixation device of bones of limb	0.9894	0.9786
T84.2	Mechanical complication of internal fixation device of other bones	0.9922	1.0000
T84.3	Mechanical complication of other bone devices, implants and grafts	1.0000	1.0000
T84.4	Mechanical complication of other internal orthopaedic devices, implants and grafts	0.9841	0.9866
T84.5	Infection and inflammatory reaction due to internal joint prosthesis	0.9722	0.9678

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T84.6	Infection and inflammatory reaction due to internal fixation device (any site)	0.9869	0.9850
T84.7	Infection and inflammatory reaction due to other internal orthopaedic prosthetic devices, implants and grafts	0.9847	1.0000
T84.8	Other complications of internal orthopaedic prosthetic devices, implants and grafts	0.9920	0.9923
T84.9	Unspecified complication of internal orthopaedic prosthetic device, implant and graft	0.9875	1.0000
T85.0	Mechanical complication of ventricular intracranial (communicating) shunt	0.9901	0.9943
T85.1	Mechanical complication of implanted electronic stimulator of nervous system	1.0000	1.0000
T85.2	Mechanical complication of intraocular lens	1.0000	1.0000
T85.3	Mechanical complication of other ocular prosthetic devices, implants and grafts	1.0000	1.0000
T85.4	Mechanical complication of breast prosthesis and implant	1.0000	1.0000
T85.5	Mechanical complication of gastrointestinal prosthetic devices, implants and grafts	0.9672	0.9795
T85.6	Mechanical complication of other specified internal prosthetic devices, implants and grafts	0.9868	0.9864
T85.71	Infection and inflammatory reaction due to peritoneal dialysis catheter	0.9521	0.9713
T85.78	Infection and inflammatory reaction due to other internal prosthetic devices, implants and grafts	0.9734	0.9798
T85.81	Other complications due to nervous system device, implant and graft	0.9891	0.9796
T85.88	Other complications of internal prosthetic, device, implant and graft, NEC	0.9912	0.9741
T85.9	Unspecified complication of internal prosthetic device, implant and graft	0.9910	1.0000
T86.0	Bone-marrow transplant rejection	0.8535	0.8182
T86.1	Kidney transplant failure and rejection	0.9916	0.9935
T86.2	Heart transplant failure and rejection	0.9737	1.0000
T86.3	Heart-lung transplant failure and rejection	0.8571	..
T86.4	Liver transplant failure and rejection	0.9521	0.9800
T86.81	Lung transplant failure and rejection	0.8983	1.0000
T86.82	Pancreas transplant failure and rejection	1.0000	1.0000
T86.88	Failure and rejection of other transplanted organs and tissues	0.9874	0.9915
T86.9	Failure and rejection of unspecified transplanted organ and tissue	0.6667	1.0000
T87.0	Complications of reattached (part of) upper extremity	1.0000	1.0000
T87.1	Complications of reattached (part of) lower extremity	1.0000	1.0000
T87.2	Complications of other reattached body part	1.0000	..
T87.3	Neuroma of amputation stump	1.0000	1.0000
T87.4	Infection of amputation stump	0.9557	0.9727
T87.5	Necrosis of amputation stump	0.9008	1.0000

continued

Table A1.1 (continued): ICD-10-AM (1st Edition) codes and corresponding Australian and New Zealand SRR's

ICD-10-AM Code	Description	Australian SRR	New Zealand SRR
T87.6	Other and unspecified complications of amputation stump	0.9803	1.0000
T88.0	Infection following immunisation	1.0000	1.0000
T88.1	Other complications following immunisation, not elsewhere classified	1.0000	1.0000
T88.2	Shock due to anaesthesia	0.9231	1.0000
T88.3	Malignant hyperthermia due to anaesthesia	0.9167	1.0000
T88.4	Failed or difficult intubation	0.9211	1.0000
T88.5	Other complications of anaesthesia	0.9805	0.9630
T88.6	Anaphylactic shock due to adverse effect of correct drug or medicament properly administered	0.9820	0.9956
T88.7	Unspecified adverse effect of drug or medicament	0.9798	0.9783
T88.8	Other specified complications of surgical and medical care, not elsewhere classified	0.9821	1.0000
T88.9	Complication of surgical and medical care, unspecified	0.9720	0.9796
T89.00	Complications of open wounds, unspecified	0.9836	0.9868
T89.01	Open wound with foreign body (with or without infection)	0.9967	0.9989
T89.02	Open wound with infection	0.9967	0.9946
T89.03	Other complications of open wounds	0.9929	0.9864

Appendix A2: Assessment of ICD-10 Chapter XIX classifications for ICISS

In this project, we have used diagnosis data coded to two versions of ICD-10 Chapter XIX as the basis for scaling probability of death, according to the ICISS approach. We have analysed two sets of data (from Australia and New Zealand) coded to the first edition of the Australian clinical modification, ICD-10-AM. We have also analysed the same data after mapping ICD-10-AM codes back to an approximation of the standard version of ICD-10. These two classifications are referred to here as ICD-10-AM and ICD-10.

As shown elsewhere in this report, ICD-10 and ICD-10-AM did not differ much in terms of performance for ICISS scaling. This appendix includes an analysis of why the difference was small, and proposes some steps towards improving Chapter XIX ICD-10-AM for this purpose.

The analysis is based on the Australian data used for this study. This set was used in preference to the New Zealand set because case numbers are larger and the number of unused ICD-10(-AM) categories is smaller.

ICD-10 and ICD-10-AM versions of Chapter XIX

Expansion of a diagnosis classification (e.g. Chapter XIX of ICD-10) into one with more categories (e.g. Chapter XIX of ICD-10-AM) has potential to enable better scaling of probability of death. However, this potential will be only realised under certain circumstances.

Chapter XIX of ICD-10, as used in this study¹, has 1,243 categories, and Chapter XIX of ICD-10-AM² has 1,738. The two versions have 1,031 categories in common (i.e. 'Same' in Figure A2.1). Another 155 Chapter XIX ICD-10 categories have been subdivided into 687 categories in ICD-10-AM ('Split'). The remaining 57 ICD-10 categories and 20 ICD-10-AM categories do not fit well into either of these groups³.

¹ For both versions of ICD-10, attention in this was restricted to codes in the three-character range S00–T89. This corresponds to the range used for this project. This range includes the whole of Chapter XIX except T90–T98, Sequelae. The two versions are the same at three-character level except that T32 is not in ICD-10-AM and T89 is only in ICD-10-AM. The category count for ICD-10 includes all standard 3-character and 4-character categories. It also includes categories implementing the optional extension to indicate 'open' or 'closed' wounds where these codes exist in ICD-10-AM and have the same meaning there.

² The category count for ICD-10-AM is based on the first edition. About half of the Australian records used for this study had been coded to the second edition of ICD-10-AM, and were mapped back to first edition categories prior to use.

³ Fifty-six ICD-10 categories for chemical burns (corrosion) are merged in ICD-10-AM with similar categories for thermal burns. Category S06.7 (Intracranial injury with prolonged coma) exists in ICD-10 but not in ICD-10-AM, in which similar conditions are codable to some subcategories of S06.0. ICD-10-AM provides 20 categories for use as additional codes to further specify certain conditions as 'open', but not available for use alone (e.g. S01.81).

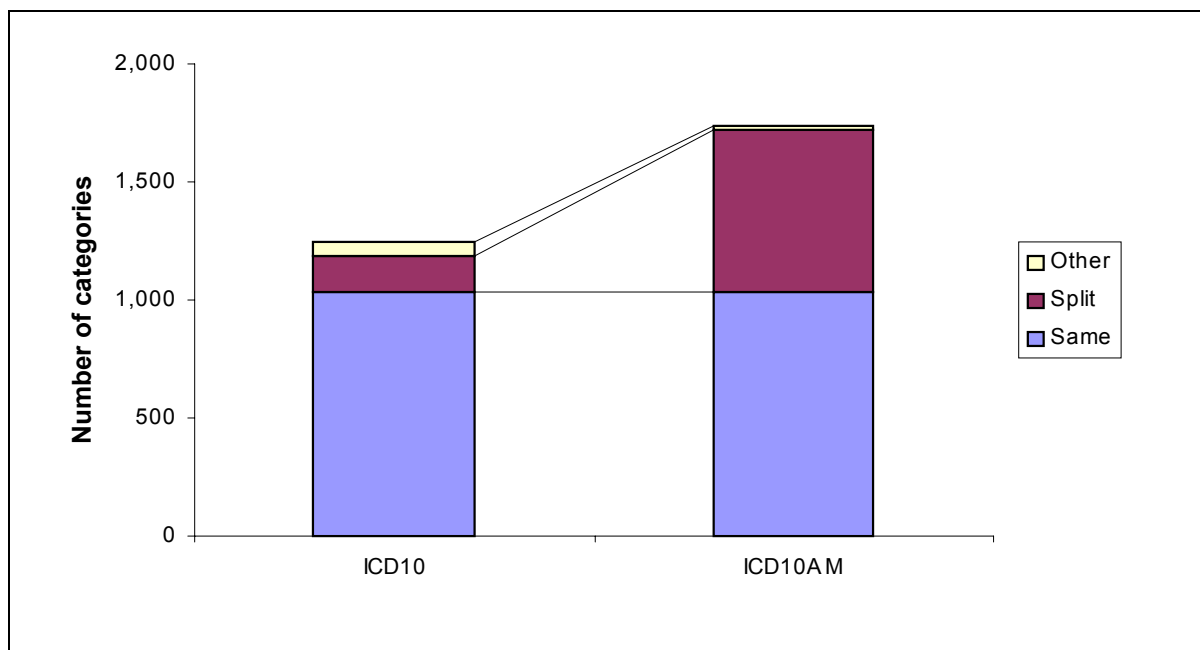


Figure A2.1. Categories in Chapter XIX of ICD-10 and ICD-10-AM, by whether they differ in the two versions

In all, 840,799 ICD-10-AM codes in the range S00–T89 were present in the 523,633 Australian separations (including 7,230 deaths). Table A2.1 summarises the usage of these codes among all separations and among separations recorded as deaths, according to whether the coded categories were the same in ICD-10 and ICD-10-AM. The proportion of separation codes that differed between ICD-10 and ICD-10-AM was similar to the proportion of categories that differed. The proportion of separation codes that differed was somewhat higher for separations ending in death, though still less than 50%.

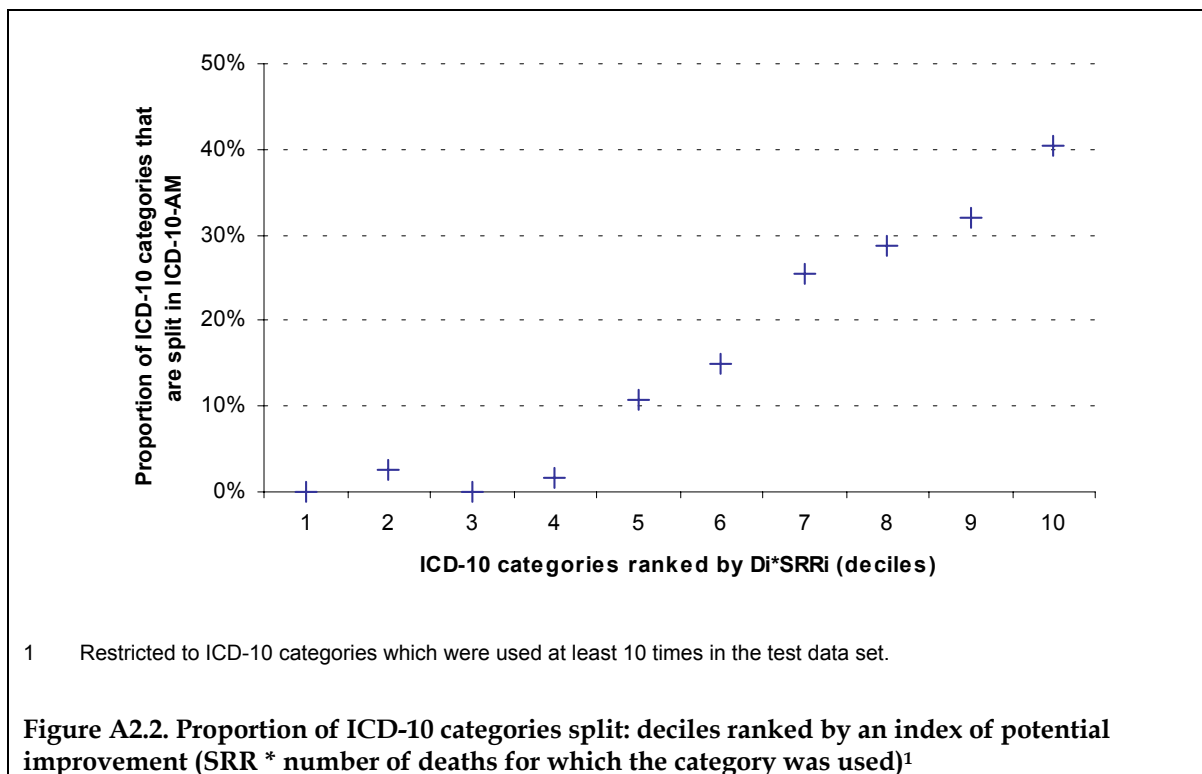
Table A2.1. ICD-10-AM categories and their use among all cases and among deaths, by whether the categories are the same in ICD-10 and ICD-10-AM

Type	Categories		Separation Codes		Separation Codes for Deaths	
	Count	Percentage	Count	Percentage	Count	Percentage
Same	1,031	59%	519,163	62%	9,932	54%
Split	687	40%	304,442	36%	8,131	44%
Other	20	1%	17,194	2%	455	2%
Total	1,738	100%	840,799	100%	18,518	100%

ICD-10 categories chosen for splitting into ICD-10-AM categories

The ICD-10 categories for which subdivision has the greatest potential to improve ICISS performance are those which are commonly used for deaths, and also for many other cases. An index of this potential is the frequency with which a category was used to code deaths, multiplied by its SRR value ($D_i \cdot SRR_i$).

Figure A2.2 shows the percentage of ICD-10 categories that were subdivided (i.e. 'split') into more specific ICD-10-AM categories for each decile of ICD-10 categories, ordered by the value of this index. Categories for which this index of potential improvement was high were more likely to have been subdivided into ICD-10-AM categories than those for which it was low. ICD-10 categories used rarely to code separations were excluded from this analysis, which is based on the 940 categories that appeared at least 10 times in the test data set.



Difference in SRRs between ICD-10-AM categories derived from each split ICD-10 category

If the SRRs for the set of ICD-10-AM categories derived by splitting an ICD-10 category are identical, or very similar to one another (and, implicitly, to the SRR of the parent category), then the split can contribute little or nothing to improved ICISS performance.

Table A2.2 summarises the size of the difference between the SRR value of each ICD-10-AM category and the SRR value of its parent ICD-10 category. This analysis is only meaningful for the 155 ICD-10 'split' categories and the 687 ICD-10-AM categories derived from them. In addition, ICD-10-AM categories which were used rarely to code separations were excluded from this analysis, which is based on the 562 categories that appeared at least 10 times in the test data set.

Table A2.2. Size of difference between ICD-10-AM SRR and ICD-10 SRR: distribution by categories, and usage of these categories for all cases and for cases recorded as ending with death*

Difference in SRR	Categories		Separation Codes		Separation Codes for Deaths	
	n	%	n	%	n	%
Zero	37	7%	18,011	6%	280	3%
>0–0.01	298	53%	226,811	75%	4,405	54%
>0.01–0.1	203	36%	56,719	19%	2,454	30%
>0.1–1.0	24	4%	2,482	1%	949	12%
Total	562	100%	304,023	100%	8,088	100%

* Restricted to ICD-10-AM categories which were used at least 10 times in the test data set.

The difference in SRR was zero, or small (up to 0.01) for 60% of categories, 81% of codes applied to all cases and 57% of codes applied to deaths.

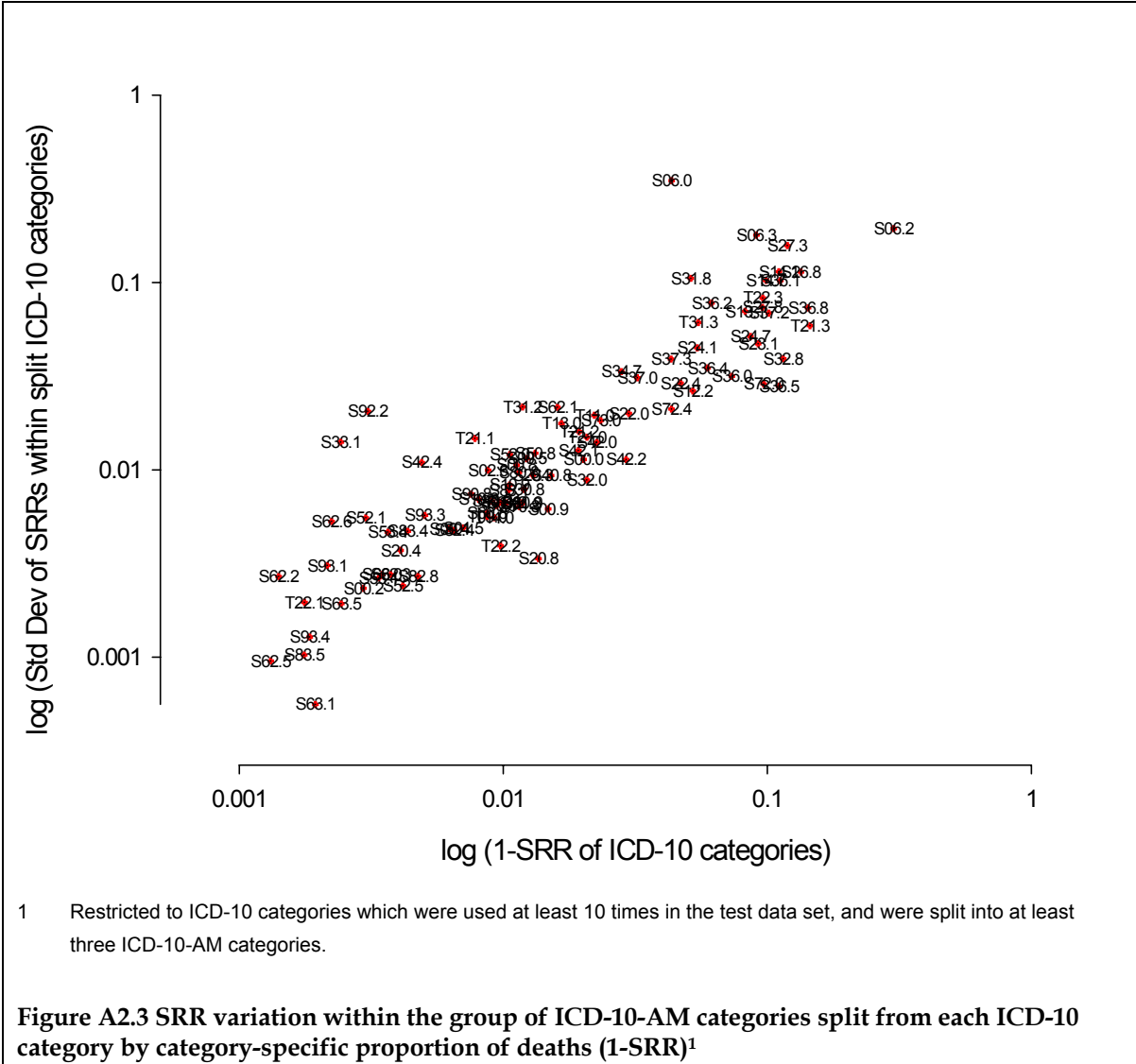
Large differences in SRR (more than 0.1) were seen for 4% of potentially differing ICD-10-AM categories. These 24 categories accounted for 1% of all usage of potentially differing categories, and 12% of the usage of such codes among cases ending in death.

Excluding categories used for very few cases, the three categories with the largest SRR differences were all in the S06 range (intracranial injury): S06.05 (0.87), S06.38 (0.55), and S06.20 (0.38).

Improvement gained by splitting ICD-10 categories

The degree of variation in the group of ICD-10-AM SRRs derived from each split ICD-10 category can be summarised in various ways. Figure A2.3 plots the proportion of deaths among the separation codes for which each ICD-10 category was used (i.e. 1-SRR) against the standard deviation of the SRRs of the ICD-10-AM categories derived from it.

Categories with few subcategories (<3), or which were used few times in the test data set (<10), were excluded from this assessment of variation.



The degree of variation in sub-category SRR groups tends to rise with the proportion of deaths in ICD-10 categories of the parent group.

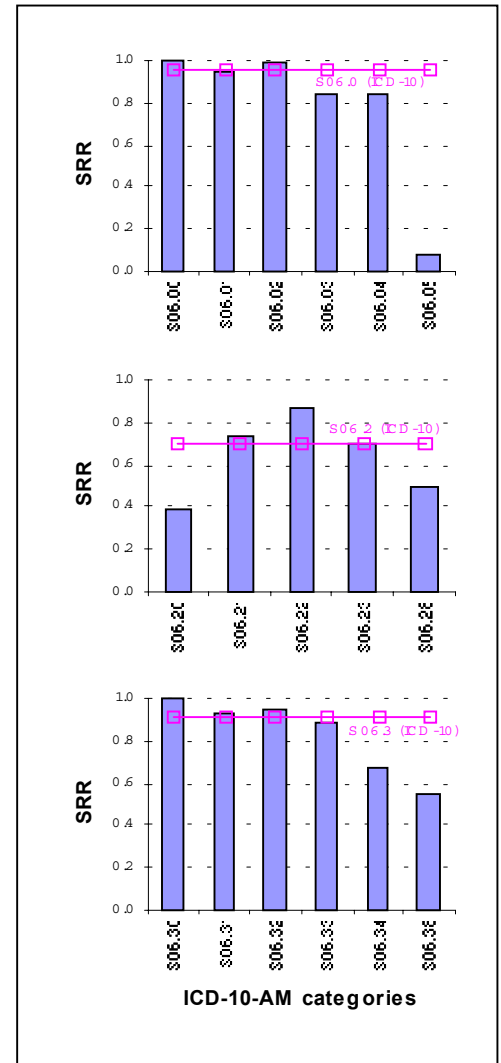
Some ICD-10 categories have substantially more variation in the SRR of their sub-categories than is typical, given the SRR of the ICD-10 category. An example is S06.0. Table A2.3 shows case numbers, deaths and SRRs for this category, and for two other categories with high variation, S06.2 and S06.3. Figure A2.4 charts SRR values for these categories.

Table A2.3 and Figure A2.4 Examples of ICD-10 categories whose ICD-10-AM sub-categories have diverse SRR values

	Code	Deaths	Cases	SRR
ICD-10-AM	S06.00	15	5,979	0.997
	S06.01	219	4,139	0.947
	S06.02	87	8,851	0.990
	S06.03	75	494	0.848
	S06.04	16	103	0.845
	S06.05	460	503	0.085
ICD-10	S06.0	872	20,069	0.957

	Code	Deaths	Cases	SRR
ICD-10-AM	S06.20	26	42	0.381
	S06.21	89	336	0.735
	S06.22	24	179	0.866
	S06.23	232	762	0.696
	S06.28	66	131	0.496
ICD-10	S06.2	437	1,450	0.699

	Code	Deaths	Cases	SRR
ICD-10-AM	S06.30	0	17	1.000
	S06.31	70	980	0.929
	S06.32	4	73	0.945
	S06.33	41	353	0.884
	S06.34	10	30	0.667
	S06.38	9	20	0.550
ICD-10	S06.3	134	1,473	0.909



ICD-10-AM categories offering greatest potential for ICISS improvement if they are split

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.

Table A2.4 lists the codes for the 50 ICD-10-AM categories with the highest values of an index of this potential, SRR multiplied by the number of deaths for which a category was used ($D_i \cdot SRR_i$). These 50 categories (3% of all categories) were 50% of all codes used for deaths ($n=9253$) and 25% of all codes used for all the Australian separations ($n=212,809$). Thirty-two of these 50 categories are among those that remained the same in ICD-10-AM as in ICD-10, and 18 were ICD-10-AM categories that have been split from an ICD-10 category. Head injuries, fractures of the femur (S72), thoracic injuries and certain complications of medical and surgical care are prominent in this list.

Table A2.4. The 50 ICD-10-AM categories with the highest value of Deaths * SRR

Code	Deaths	SRR	Code	Deaths	SRR	Code	Deaths	SRR
Head			Thorax			Poisoning		
S01.0	239	0.9783	S22.32	107	0.9741	T40.1	83	0.9573
S01.80	161	0.9837	S22.40	163	0.9067	T42.4	73	0.9944
S01.83	129	0.7749	S22.44	128	0.9406	Other effects of external causes		
S02.0	174	0.9049	S22.5	83	0.8787	T71	92	0.7745
S02.1	433	0.8858	S27.0	128	0.9533	T75.1	85	0.8986
S02.4	103	0.9806	S27.1	106	0.8840	Complications		
S06.01	219	0.9471	S27.2	138	0.8939	T81.0	257	0.9850
S06.02	87	0.9902	S27.31	203	0.8934	T81.3	70	0.9820
S06.1	308	0.5530	Abdomen, etc			T81.4	385	0.9850
S06.23	232	0.6955	S32.4	93	0.9350	T81.8	123	0.9777
S06.5	678	0.7436	S32.5	349	0.9395	T82.7	148	0.9661
S06.6	444	0.6269	Upper limb			T82.8	118	0.9795
S06.8	118	0.8027	S42.00	88	0.9682	T84.0	75	0.9897
S09.9	87	0.9898	S42.22	138	0.9611	T84.5	78	0.9722
Neck			S42.3	100	0.9599			
S12.1	95	0.8443	S51.0	74	0.9740			
			Lower limb					
			S72.00	327	0.8759			
			S72.03	615	0.9109			
			S72.04	76	0.8943			
			S72.10	287	0.8989			
			S72.11	569	0.8980			
			S72.2	90	0.8986			
			S72.3	130	0.9599			
			S81.81	89	0.9687			
			S82.21	78	0.9790			

Note: Unshaded categories are the same in ICD-10 and ICD-10-AM.

Limitations of method

Two aspects of this study might have affected the validity of the comparison of severity scores based on ICD-10-AM and based on ICD-10.

Synthetic ICD-10

The source data for the project were coded to ICD-10-AM. We mapped codes in this set in a manner designed to replicate ICD-10 coding. However, certain differences between the ICD-10 and ICD-10-AM versions of Chapter XIX complicated mapping. Consequently, the mapped ICD-10 codes might differ in some respects from codes that would be obtained by direct coding to ICD-10.

Compound categories in ICD-10-AM treated as discrete

Certain categories in ICD-10-AM are designed to modify other categories. This approach has been used in place of the optional extension provided in ICD-10 to identify certain injuries as 'closed' (0) or 'open' (1). Instead, supplementary ICD-10-AM categories have been added to the various sections of codes for 'Open wound of ...' (e.g. S01.81). In the multiple coding setting for which ICD-10-AM is designed, these additional codes are added to a record when needed to qualify a diagnosis as being 'open'. For example, the pair of ICD-10-AM codes S02.1 S01.81 is equivalent to ICD-10 code S02.01, both coding an open fracture of the base of the skull. In the analysis described in this report, these supplementary categories have been treated in the same way as any other diagnosis code (i.e. as discrete values). An alternative approach would be to treat such meaningful pairs of codes together (i.e. if S02.1 is present in a record with S01.81, then these would be treated as a single code).

Summary

As shown elsewhere in this report, Chapter XIX of ICD-10-AM performed only a little better than Chapter XIX of ICD-10 for ICISS severity scaling.

All of the small improvement observed stems from the splitting of 155 ICD-10 categories (12% of all ICD-10 categories) into 687 ICD-10-AM categories.

The ICD-10 categories that were split tended to be those with more potential to improve performance. However, the SRR values of the new subcategories were mostly very similar to the SRR values for their parent ICD-10 categories. Hence, most of the expansion of categories had little or no effect on performance.

These observations go some way towards explaining the small size of the observed difference in performance of Chapter XIX of ICD-10-AM and ICD-10 for purposes of ICISS.

Despite the small differences in SRRs between most of the ICD-10 categories that have been split in ICD-10-AM, a few were larger. For example subdivision of S06.0 according to duration of unconsciousness enabled a group to be distinguished which includes over half of the deaths in the parent category and has a survival fraction of under 10% (S06.05). The presence of such instances suggests that greater gains might be achievable by appropriate subdivision of categories.

Diagnosis categories used for large numbers of deaths and also for many other cases offer potential to produce improvements in ICISS performance, if they are split appropriately. This potential should be taken into consideration when designing future revisions of ICD-10-AM. Review of literature concerning the conditions codable to these categories might provide evidence to guide sub-division of categories in ways likely to produce worthwhile improvements. Given sufficient time and access to records, the effect of proposed changes could be tested by applying standard and proposed categories to a set of relevant cases.

INJURY RESEARCH & STATISTICS

This report provides an evaluation of the applicability of an ICD-based Injury Severity Scale (ICISS) to ICD-10 and ICD-10-AM using Australian and New Zealand hospital separations data. Use of ICD-10-AM resulted in better ICISS performance than was seen for ICD-10 although the difference was relatively small. ICISS also performed marginally better when applied to the Australian separations than the New Zealand separations.

In conclusion, ICISS is a reasonable method for estimating severity in databases using ICD-10 or ICD-10-AM and is likely to work well for other variants of ICD-10. This report will be relevant to those interested in measures of injury severity, particularly those involved in health and policy planning and injury researchers.