Bi-National Trauma Minimum Dataset (BNTMDS) for Australia and New Zealand

Core Data Items

Data Dictionary

Version 1.31

August 2013

Approved by the Steering Committee, Australian Trauma Quality Improvement Program, August 2013

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Abbreviations

ACHI	Australian Classification of Health Interventions (ACHI) 7th edition
ACSQH	Australian Commission on Safety and Quality in Healthcare
AIHW	Australian Institute of Health and Welfare
AIS	Abbreviated Injury Scale
ASA	American Society of Anaesthetists
ATR	Australian Trauma Registry
ATS	Australasian Trauma Society
AusTQIP	Australian Trauma Quality Improvement Program
BNTMDS	Bi-National Trauma Minimum Dataset of Australia and New Zealand
CPR	Cardiopulmonary Resuscitation
CT	Computed Tomography
ED	Emergency Department
GCS	Glasgow Coma Score
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
ICU	Intensive Care Unit
INR	International Normalised Ratio
ISS	Injury Severity Score
METeOR	Metadata Online Registry
NISS	New Injury Severity Score
NTDB	National Trauma Data Bank
NTR	National Trauma Registry
NTRC	National Trauma Registry Consortium
OR	Operating Room
RACS	Royal Australasian College of Surgeons
RTS	Revised Trauma Score
TDWG	AusTQIP Trauma Data Working Group
TRISS	Trauma and Injury Severity Score
Utstein	The Utstein Trauma Template for Uniform Reporting of Data following Major Trauma Data Dictionary, Version 1.1.1, May 19 2009.

Foreword

This data dictionary was originally created by Cameron Palmer on behalf of the Trauma Quality Improvement Sub-Committee of the Royal Australasian College of Surgeons Trauma Committee. The dataset was derived from the work performed by the National Minimum Dataset Working Party of the National Trauma Registry Consortium (2005-2008). Membership of the named committees, without whose work this dataset and data dictionary would not have been realised, are listed below.

RACS Trauma Quality Improvement Sub-Committee (formerly the RACS Systems Performance Improvement and Registries Committee), 2008-2011

Cliff Pollard *(Chair to 2009)*

Russell Gruen *(Chair, 2009-2011)*

Robert Atkinson	Patrick Bade	Daniel Cass
Rangi Dansey	Peter Danne	Arthas Flabouris
James Hamill	Anthony Joseph	Leslie Lambert
Mary Langcake	Rod McClure	Len Notaras
Cameron Palmer	Sudhakar Rao	Michael Schuetz
Ron Somers	Daryl Wall	Stephen Wilkinson

National Trauma Registry Consortium (Australia & New Zealand) Executive and Steering Committees, 2003-2008

Cliff Pollard *(Chair)*

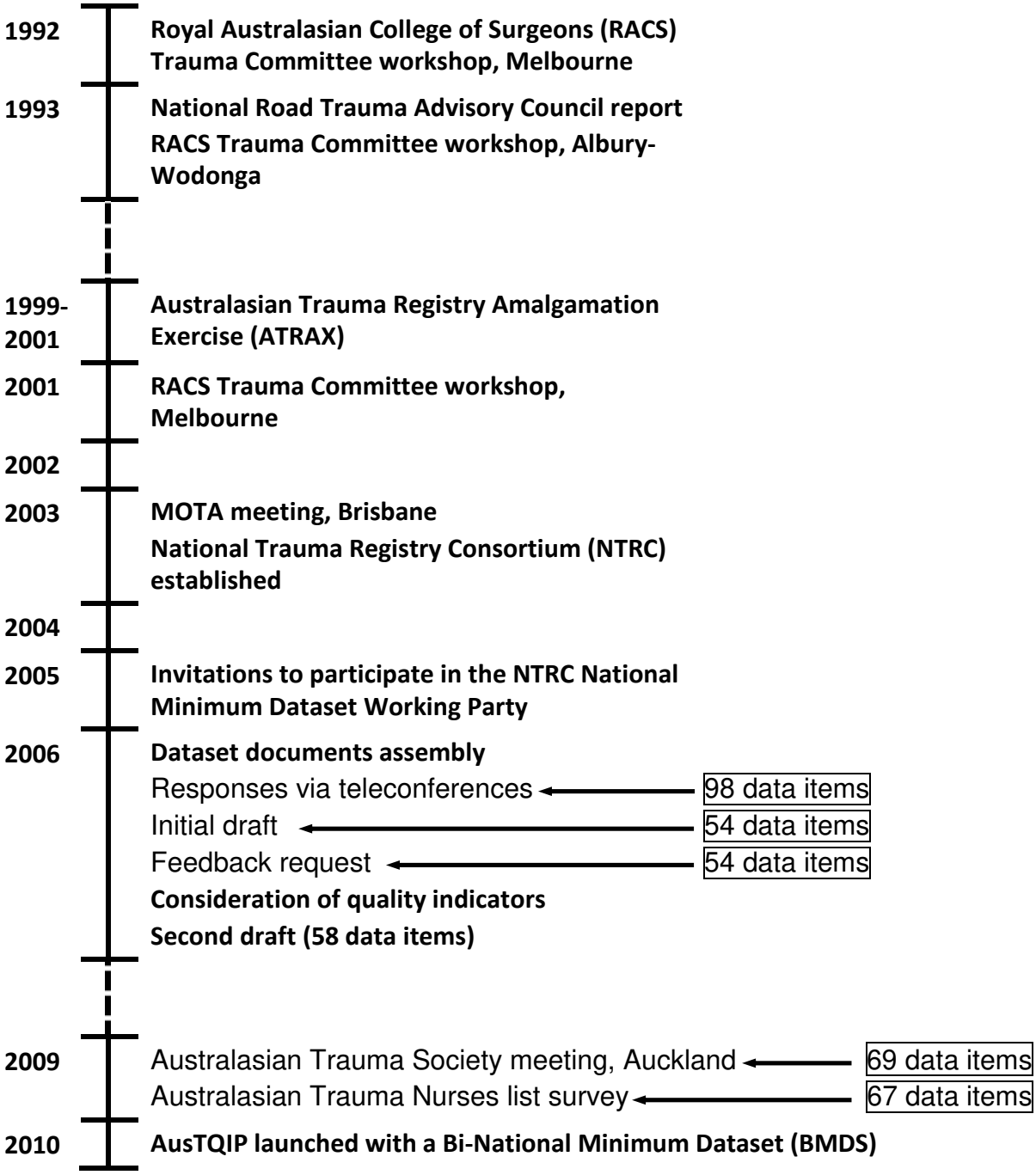
Leanne Aitken	Robert Atkinson	Patrick Bade
Nicholas Bellamy	Peter Cameron	Daniel Cass
Peter Danne	Tamzyn Davey	Mark Fitzgerald
William Griggs	James Hamill	James Harrison
Leslie Lambert	Patricia McDougall	Christine O'Connor
Frank Plani	Sudhakar Rao	Drew Richardson
Ron Somers		

National Trauma Registry Consortium National Minimum Dataset Working Party, 2005-2007

Cameron Palmer *(Chair)*

Christine Allsopp	Lynn Ashton	Maxine Burrell
Erica Caldwell	Rangi Dansey	Tamzyn Davey
Rachael Henson	Carolyn James	Jennifer Leslie
David Martens	Deirdre McDonagh	Susan McLellan
Helen Naylor	Ian Rowbottom	Rebecca Weir

Bi-National Trauma Minimum Dataset (BNTMDS) - A Brief History



It is now nearly 20 years since the concept of national-level or Australasian data collection was first discussed. In July 1993, the National Road Trauma Advisory Council released a report which recommended national standardisation of trauma registry datasets, to enable "a national program for quality assurance activities". Only a month later, and building on the results of a trauma systems seminar held the previous year, the Royal Australasian College of Surgeons (RACS) convened a workshop to develop a minimum dataset for Australia and New Zealand.

Whether due to lack of funding, centralised leadership or 'buy-in' from necessary stakeholders, there were a number of re-iterations of this process over the next decade, from both operational and clinical perspectives. Significant work was undertaken between 2003 and 2006 by the National Trauma Registry Consortium (NTRC), under the chair of Cliff Pollard, which attracted sponsorship across three states as well as from RACS. In particular, the work of the NTRC included the formation of the National Minimum Dataset Working Party in 2005. Working essentially 'from scratch', the Working Party evaluated datasets used in other countries as well as clinical, quality and data collector input from across Australasia, to produce a draft Bi-National Minimum Dataset (BMDS) by late 2006.

Following the cessation of NTRC funding in 2006, oversight of the dataset passed to the RACS Trauma Quality Improvement Sub-Committee, which recommenced discussions around the BMDS in early 2009. In November 2010, the dataset was introduced as the Bi-National Minimum Dataset (BMDS) by Cameron Palmer, who had chaired the NTRC National Minimum Dataset Working Party, at the Trauma 2010 conference in Melbourne. At the same time, the first version of the BMDS Data Dictionary was made public.

The BMDS has now been adopted and recommended by the Australian Trauma Quality Improvement Program (AusTQIP) and the Australian Trauma Registry (ATR) as the minimum standard for the collection of trauma data for national reporting to be aligned with national trauma quality improvement strategies. As such, it has now been renamed the Bi-National Trauma Minimum Dataset (BNTMDS) for Australia and New Zealand.

Comment on registry purposes

The Australian Commission on Safety and Quality in Healthcare released their Operating Principles and Technical Standards for Australian Clinical Quality Registries (ACQR)[1] in late 2008. While this may not provide the template ultimately used in the development of national trauma registries in Australia or New Zealand, it at least provides substantial food for thought regarding the design and implementation both of a national trauma registry, and the minimum dataset and data dictionary it uses.

In order to qualify as an ACQR, a future national trauma registry should use routinely collected electronic data where possible. While this lowers cost, the use of an Injury Severity Score (ISS) threshold (derived from assigned Abbreviated Injury Scale [AIS] codes) requires at least a proportion of data to be collected manually (ie. from written hospital records). An ACQR is felt to be practical only in situations where "differences in quality can have major impacts on quality of life or cost" (ACQR, p20); as a result, the estimated benefit of a national trauma registry (based on current evidence of differences in outcome across different regions in Australia and New Zealand, or between these countries and the rest of the world) should be carefully assessed. Alternatively, the potential utility of alternate data sources should be assessed. An example is ICD coding, which can in theory be mapped to AIS equivalents instead of using expensive manual AIS coding. However, the limitations of such data 'shortcuts' should be recognised. Current ICD maps offer outdated severity estimates compared to the current (2008) AIS; in addition, while similar patient numbers may be identified by this method there will be substantial differences in the actual group of patients identified.

While the elements of a minimum dataset can be to some extent developed independently (based on considerations such as completeness and ease of collection), they must also be governed by the population to be assessed by a future national trauma registry (ie., inclusion and exclusion thresholds) as well as the outcomes which are felt to be of relevance to that population. For severe injury, death has historically been regarded as a standard outcome measure; secondary outcomes may include the length of hospital treatment, and the discharge destination (other than death). It is compelling, though, that the ACQR principles and standards document specifically mentions trauma in this context. Based on the results of the Victorian State Trauma Registry, the document states that "in the case of severe trauma a six month follow-up is needed for clinical stability to be measured"(ACQR, p20). The cost associated with collection of medium- to long-term follow-up data could render a national trauma registry unfeasible. A case could be made that as overseas standards at national level comprise discharge destination, discharge Glasgow Outcome Score or 30-day mortality that these represent acceptable international standards; equally, though, this could be seen as indicative of the generally poor quality of trauma outcomes evaluation worldwide.

[1] Australian Commission on Safety and Quality in Healthcare. Operating Principles and Technical Standards for Australian Clinical Quality Registries. 2008.

Inclusion and exclusion criteria

Consideration should be given to the inclusion criteria which would be employed by an ATR employing the BNTMDS, as to some extent these will determine the particular relevance of fields within the BNTMDS (and hence their inclusion in the BNTMDS). While registries from a sole hospital, and to a lesser extent regional or state registries benefit from broad patient capture, at a national or international level only patients with injuries which are deemed significant (by some definition) should be included. The comparatively small proportion of patients which will meet assigned inclusion criteria should fit within the funding and time constraints which are imposed, particularly on smaller hospitals or regions without local data collection previously in place. It is therefore reasonable to limit inclusion in an ATR to patients meeting specified criteria for major trauma.

Although the threshold of an ISS >15 has been a widely accepted major trauma definition since the mid-1980s[2], it has not been validated in over 20 years. During this time substantial changes have taken place in injury diagnosis and treatment which would be expected to produce differences in outcomes across a population. With the adoption of more contemporary (2005 and 2008) versions of the AIS in the majority of Australasian registries, it has been established that the number of patients classified as major trauma will decrease by between 15% and 25% when compared with populations coded using earlier (1990 and 1998) AIS versions.

Preliminary work conducted within the Victorian and Queensland trauma systems has identified that the use of a lower ISS threshold in conjunction with the 2005 and 2008 AIS versions is able to satisfactorily compensate for the lower ISS scores within a population. More specifically, an ISS >12 threshold appears to both maintain overall major trauma numbers, as well as closely adhering to the 10% mortality level which formed part of the original rationale behind the use of ISS >15.[2] With this in mind, major trauma (and the inclusion criterion for the ATR) is currently best defined at a national level as:

INCLUSIONS

All patients of any age admitted to hospital with either:

- Injury Severity Score (ISS) >12 (based on AIS 2005 Update 2008)

or

- Death following injury

Even where all patients meet the inclusion criteria, the following patients will be excluded:

EXCLUSIONS

- Patients with delayed admissions greater than 7 days after injury
- Poisoning or drug ingestion that do not cause injury

[2] Boyd CR, Tolson MA, Copes WS. Evaluating trauma care: the TRISS method. Trauma Score and the Injury Severity Score. J Trauma 1987;27(4):370–8.

- Foreign bodies that do not cause injury
- Injuries secondary to medical procedures
- Isolated neck of femur fracture
- Pathology directly resulting in isolated injury
- Elderly (≥65 years of age) patients who die with superficial injury only (contusions, abrasions, or lacerations) and/or have co-existing disease that precipitates injury or is precipitant to death (e.g. Stroke, Renal Failure, Heart Failure, Malignancy).

Dataset definition sources

Dataset fields should offer substantial levels of international comparability while still providing usefulness for the specific local requirements of the registry. At the same time, ease of collection (in terms of time required or cost) is essential, particularly in order to obtain data from centres which do not currently have trauma data collection (and hence are more likely to be resource-poor).

Where possible, BNTMDS fields should be based on standard definitions created by authoritative Australian or New Zealand bodies, or (in the absence of such definitions) pre-existing comparable or contributing datasets.

The default standard sought for each field is a definition from the Australian Institute of Health and Welfare's Australian National Health Data Dictionary (METeOR). A number of METeOR standards are in turn based on, derived from or compatible with routinely collected International Classification of Diseases (ICD) codes. In order to maximise international dataset comparability, definitions used in established registries or agreed templates (the European Utstein template, American National Trauma Data Bank [NTDB] or Canadian National Trauma Registry [NTR]) have also been considered. Reporting guidelines may also be taken from or based on these sources, as well as the data dictionaries of existing Australian state trauma registries.

Where no METeOR standard is felt to apply to a field as conventionally defined in existing trauma datasets, best matches are provided, and note made that METeOR fields may require future development.

Within the data dictionary, reference is made to the use of a particular field, or a field providing similar information to all or part of the relevant field in one or more of the Utstein template, NTDB or Canadian NTR. Additional fields contained within one or more of these datasets which provide different types of information are also listed at the end of each phase of care.

An estimate of current field collectability amongst Australian and New Zealand trauma registries is also provided in this Appendix. The data was collated from a 2009 sample of 21 hospitals, regional and statewide registries across the two countries. Data fields are felt to be readily available ('Ready') if more than 80% of respondent registries currently collect the field; 'Near ready' if more than 70% of registries collect or could collect the field with current resources; and 'Not ready' if less than 70% of registries are currently capable of collecting the field.

Guide to using this data dictionary

Development of the BTNMDS data dictionary is based on existing national health data standards where available. The national health metadata standards is overseen by the Australian Institute of Health and Welfare (AIHW) and is hosted online at the Metadata Online Registry (METeOR) website. For more information about METeOR, please go to:

http://meteor.aihw.gov.au/content/index.phtml/itemId/181162

The format of the following data dictionary is based on the ISO/IEC International Standard 11179-3:2003 (Information Technology - Metadata Registries - Part 3: Registry metamodel and basic attributes), as interpreted by AIHW. The following guide provides an overview of the types of data attributes and their definitions used for each of the BTNMDS data items.

Dates and times are in accordance to the recommendations of ISO 8601:2004 (Data elements and interchange formats - Information interchange - Representation of dates and times)

Guide to meaning of categories and headings

DATA ELEMENT NAME

Identifying and definitional attributes

Definition	A concise statement that expresses the essential nature of a data item and its differentiation from all other data items.
Rationale	The reason for collecting this data items.

Obligation

An indicator of whether the data element is mandatory or optional for the data collection or transmission. Derived values need not be collected but indicates how values are to be calculated or obtained.

Representational attributes

Data domain	The set of possible values for the data item. This may take the form of a code set, or a description of the possible values. Domain values are only specified where size of the code set is small enough to be reasonably reproduced in the document. In other instances the domain may be indicated by reference to a source document.
Guide for use	These are comments designed to assist in further defining aspects of the data domain.
Validation rules	These are included to assist in reducing input error. Where validation rules are known to exist, they have been included.
Related data element	Other data items in this data dictionary that have some direct relationship with the data element being described.

Data type	The type of symbol or character, or other designation used to represent the data element, for example, alphanumeric values is a String, Number, Date/Time.
Representation class	Describes whether the valid values for the data item take the form of a code set or free text. If the form is described as 'Code' the relevant code set or sets will be specified in the Data Domain section.
Maximum field size	The maximum number of characters allowable to represent the data item values.
Format	A generic example of what the data element should look like in the unit record. It is a template for the presentation of values, including specification and layout of permitted characters. For example, dates should be represented in the format of DDMMYYYY where DD represents the day, MM represents the month, and YYYY represents the four-digit numeric for the year.

Additional information

References	Documents listed here have been used as references when designing the specified item. Also listed are names of the organisations that developed the source document or provided advice on the data item.
Related metadata	Relationship between other metadata items.

Format values and their associated meanings

Value	Valid character range
A	Alphabetic character set: contains the letters a-z and A-Z and may contain special characters*, but not numeric characters.
N	Numeric character set: contains whole and decimal numbers and may contain special characters, but not alphabetic characters.
X	Alphanumeric character set: contains alphabetic and numeric characters, and may contain blank characters.
D	A numeric character representing a number of days
M	A numeric character representing a number of months
Y	A numeric character representing a number of years
[ ]	The string within the square brackets is optional in any ordered combination (eg. [XXX] indicates 0, 1, 2 or 3 alphanumeric characters (i.e. blank, X, XX or XXX)).
( )	The character preceding the round brackets (parentheses) is repeated the number of times specified (eg. X(9) indicates 9 alphanumeric characters).

* A special character is a character which has a visual representation and is neither a letter, number, ideogram, or blank. For example, punctuation marks and mathematical symbols.

Approval and Limitations

This version of the data dictionary has been approved by the AusTQIP Trauma Data Working Group (TDWG). Work on the dataset and data dictionary is an on-going iterative process. There are, however, limitations and refinement to the current version that the Working Group is aware of and has flagged for continuing work. Readers will need to be aware of certain limitations in the current version but do not affect the intended purpose or definitions for each of the data items:

Blank categories or headings – a few categories or headings are yet to be completed.

Data domains – list of specific data values will need further refinement and clarification.

Benchmarking – the availability or consensus agreement for data items to be used for benchmarking is yet to be determined.

Glossary of Terms

Certain terms referred to throughout this dictionary are commonly used in the clinical vernacular for trauma care. However, for the purposes of this data dictionary and also to help standardise definitions and data collection, the following definitions are used.

Definitive Care Hospital

The hospital at the highest service level within the tiered trauma system structure where the patient was treated. This is usually a tertiary hospital that is able to provide leadership and total care for all aspects of the injury from prevention through to rehabilitation.

Referring Hospital

The acute care hospital from which the patient has been transferred from following separation and usually occurs in an effort to move the injured patient to a higher level of care where necessary resources optimise recovery.

Pre-hospital

Refers to any event that occurred prior to a patient arriving at the definitive care hospital. These include scene, transfer and any referring hospital/hospitals.

Data Definitions

1.01 Institution

Identifying and definitional attributes

Definition	The identifier for the establishment in which the episode of definitive (final) care occurred. Each separately administered health care establishment to have a unique identifier at the national level.
Justification	Collected for administrative purposes, to assist in service provider identification.

Obligation

Mandatory

Representational attributes

Guide for use	Concatenation of: • Australian state/territory identifier (character position 1); • Sector (character position 2); • Region identifier (character positions 3-4); and • Organisation identifier (state/territory), (character positions 5-9).
Validation rules	
Related data element	
Data type	String
Representational class	Identifier
Field size maximum	9
Format	NNX[X]NNNNN
Data domain	Valid identifier

Administrative information

References	
Related metadata	METeOR ID: 269973

1.02 Trauma Number

Identifying and definitional attributes

Definition	A person identifier unique to the establishment or agency where the person received definitive (final) care.
Justification	Collected for administrative purposes, to assist in service provider identification.

Obligation

Mandatory

Representational attributes

Guide for use	Individual agencies, establishments or collection authorities may use their own alphabetic, numeric or alphanumeric coding systems. This field may be a hospital medical record (UR) number, or a local trauma registry case number.
Validation rules	Field cannot be blank.
Related data element	
Data type	String
Representational class	Identifier
Field size maximum	20
Format	XXXXXX[X(14)]
Data domain	Valid identifier

Administrative information

References	
Related metadata	METeOR ID: 290046

1.03 Incident number

Identifying and definitional attributes

Definition	An identifier which is unique to a specific trauma event for a specific person.
Justification	Collected for administrative purposes, to assist in the identification of the same episode of care for a trauma incident.

Obligation

Mandatory

Representational attributes

Guide for use	Individual agencies, establishments or collection authorities may use their own alphabetic, numeric or alphanumeric coding systems. This field may be a hospital medical record (UR) number, or a local trauma registry case number. This field may be dependent (derived from) or independent of date of incident, region or submitting institution.
Validation rules	Field cannot be blank.
Related data element	
Data type	String
Representational class	Identifier
Field size maximum	10
Format	XXXXXX[X(4)]
Data domain	Valid identifier

Administrative information

References	
Related metadata	METeOR ID: 290046

2.01 Date of birth

Identifying and definitional attributes

Definition	The date of birth of the person.
Justification	Collected for administrative purposes, to assist in individual identification and for derivation of age in demographic analyses.

Obligation

Optional

Representational attributes

Guide for use	If date of birth is not known or cannot be obtained, provision should be made to collect or estimate age. An estimated date flag or a date accuracy indicator should be reported in conjunction with all estimated dates of birth. If year of birth is known (but date of birth is not) use the date, 0101YYYY of the birth year to estimate age (where YYYY is the year of birth). If person is aged under 2 years, date of birth should be estimated to the nearest three month period, ie 0101, 0104, 0107 or 0110 of the estimated year of birth.
Validation rules	Less than all other dates
Related data element	
Data type	Date/Time
Representational class	Date
Field size maximum	8
Format	DDMMYYYY
Data domain	Valid date

Administrative information

References	
Related metadata	METeOR ID: 287007

2.02 Age

Identifying and definitional attributes

Definition	The age of the patient on the date of the injury event, measured as a number of years (with fractional component expressed as a decimal).
Justification	Age is a core data element as a predictive measure of trauma treatment and outcomes.

Obligation

Derived

Representational attributes

Guide for use	Age in single years (if aged under one year, record as zero). Can be derived from: • Date of Birth; and • Date & Time of Injury If both data items are available, this should be derived as a calculated field. If age cannot be calculated, is not stated and cannot be estimated, value 999 should be used.	
Validation rules	Permissible values 0 - 130	
Related data element	Date of Birth Date & Time of Injury	
Data type	Number	
Representational class	Total	
Field size maximum	3	
Format	N[NN]	
Data domain	**Value**	**Description**
	0-130	Valid Age
	999	Unknown/not stated

Administrative information

References

Related metadata METeOR ID: 303794

2.03 Sex

Identifying and definitional attributes

Definition	The biological distinction between male and female.
Justification	Collected to determine sex specific treatment. It is also a core element in a wide range of social, labour and demographic statistics.

Obligation

Mandatory

Representational attributes

Guide for use	Diagnosis and procedure codes should be checked against the national ICD-10-AM sex edits, unless the person is undergoing, or has undergone a sex change or has a genetic condition resulting in a conflict between sex and ICD-10-AM code. Intersex or indeterminate, refers to a person, who because of a genetic condition, was born with reproductive organs or sex chromosomes that are not exclusively male or female or whose sex has not yet been determined for whatever reason. Intersex or indeterminate, should be confirmed if reported for people aged 90 days or greater.
Validation rules	
Related data element	
Data type	Number
Representational class	Code
Field size maximum	1
Format	N

Data domain	**Code**	**Description**
	1	Male
	2	Female
	3	Intersex or indeterminate
	9	Not stated/inadequately described

Administrative information

References	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification 7th edition.
Related metadata	METeOR ID: 287316

2.04 Pre-injury Co-morbidities

Identifying and definitional attributes

Definition	Significant condition, conditions or complaint which pre-existed the injury incident, and which affect management of the injuries.
Justification	Co-morbidities may affect patient treatment and outcome.

Obligation

Optional

Representational attributes

Guide for use	Record all diagnosis codes relevant to that injury existing prior to the episode of care for that injury incident accordance with the ICD-10-AM Australian Coding Standards. Generally, external cause, place of occurrence and activity codes will be included in the string of additional diagnosis codes. External cause codes, although not diagnosis of condition codes, should be sequenced together with diagnosis codes so that meaning is given to the data for use in injury surveillance and other monitoring activities. The diagnosis can include a disease, condition, injury, poisoning, sign, symptom, abnormal finding, complaint, or other factor influencing health status. ICD-10 AM Australian Coding Standards diagnosis codes can be used to map to specified co-morbidity groups such as the American Society of Anesthesiologists' scale.
Validation rules	
Related data element	
Data type	String
Representational class	Code
Field size maximum	6
Format	ANN{.N[N]}
Data domain	ICD-10-AM International Statistical Classification of Diseases and Related data element Health Problems, Australian Modification

Administrative information

References	
References	National Trauma Registry Comprehensive Data Set (NTR CDS) Data Element List, December 2001

3.01 Date & Time of Injury

Identifying and definitional attributes

Definition The date and time the person received the injuries requiring hospitalisation.

Justification To identify the episode of injury by the date and time. Date is used to calculate the age at date of injury. Time is used to calculate the time to treatment and also report on the most common time of injury.

Obligation

Mandatory

Representational attributes

Guide for use

If time is not accurately known, the best estimate should be used.

An estimated date/time flag or a date/time accuracy indicator should be reported in conjunction with all estimated dates & times of injury if available.

Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001.

Where the date and time is unknown, enter as:

- 01011900T0000

Where date in known but time is unknown, enter actual date:

- DDMMYYYYT0000

Where the time is known but date is unknown, enter actual time as:

- 01011900Thhmm

Validation rules

Must be less than or equal to:

- Time of Ambulance Arrival at Patient;
- Time of Arrival at Referring Hospital;
- Time of Departure from Referring Hospital; and
- Date & Time of Arrival at Definitive Care Hospital

Related data element

Data type Date/Time

Representational class Date/Time

Field size maximum 13

Format	DDMMYYYYThhmm
Data domain	Valid Date and Time

Administrative information

References

Related metadata

3.02 Injury Cause

Identifying and definitional attributes

Definition	The single environmental event, circumstance or condition (external factor) which was the primary circumstance or cause of the trauma event.
Justification	Enables categorisation of injury cause and identify trends in defining and monitoring cause of injuries.

Obligation

Mandatory

Representational attributes

Guide for use	This code must be used in conjunction with an injury or poisoning code and can be used with other disease codes. The external cause should be coded to the complete ICD-10-AM classification. If two or more cause categories are judged to be equally important, select the one that comes first in the code list. This field may be expressed in a number of ways. Existing numerical codesets used for similar fields may be mapped to or from this field. An external cause code should be sequenced following the related injury or poisoning code, or following the group of codes, if more than one injury or condition has resulted from this external cause. Provision should be made to record more than one external cause if appropriate. External cause codes in the range V00 to Y89 must be accompanied by a place of occurrence code. External cause codes V00 to Y34 must be accompanied by an activity code.
Validation rules	
Related data element	
Data type	String
Representational class	Code
Field size maximum	6
Format	ANN{.N[N]}
Data domain	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification 7th edition

Administrative information

References	
Related metadata	METeOR ID: 391330

3.03 Dominant Injury Type

Identifying and definitional attributes

Definition The dominant type of injury produced by the trauma event.

Justification Collected to determine trends and calculation of TRISS (blunt and penetrating only).

Obligation

Optional

Representational attributes

Guide for use In most instances, determination of the dominant injury type will be based on the mechanism of injury, and relate directly to:

- Injury Cause

Blunt injuries generally occur from mechanisms such as motor vehicle collisions, pedestrian impacts, falls and sports injuries.

Penetrating injuries, require skin penetration by an external force as the principal component of injury. Examples include stab and gunshot wounds, glass-related injuries and impalements. Examples include stab and gunshot wounds, bomb fragments, glass-related injuries and impalements. This excludes compound fractures where the bone breaks the skin, but includes compound fractures where an external object travels through the skin and into the bone.

Burn injuries are caused by exposure to electrical, thermal or corrosive agents such as flames, hot substances, chemicals or radiation. Examples include situations where electricity has primarily damaged soft tissues (electrical burns).

Other trauma includes hangings, near drowning and electrocution injuries. Examples include cases where electricity has resulted in more diffuse injuries involving other body systems (ie. electrocution) such as cardiac arrest, neurological injuries, fractures and compartment syndrome.

Not stated/inadequately described - type of injury cannot be determined.

***In some cases, the dominant injury type will not be readily apparent*.** For example, a patient injured in a severe motor vehicle collision (which generally result in blunt injuries) may have additional penetrating injuries. When compared with blunt injuries sustained in such an injury event, such penetrating injuries may be minor (as in superficially embedded glass from a broken window) or major (as in impalement on an object within the vehicle). In such cases, the dominant injury type may be established by additional review of:

- Injury event description; and

- AIS Injury Codes

Where an injury event results in both blunt and non-blunt trauma of equal AIS severity, the non-blunt injury type should be used. Where an electrocution event causes burn and internal ('Other trauma') injuries, the injury with the higher AIS severity should be used.

Validation rules

Related data element	Injury Cause	
	Injury event description	
	AIS Injury Codes	
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Blunt
	2	Penetrating
	3	Burn
	8	Other trauma
	9	Not stated/inadequately described

Administrative information

Related metadata

3.04 Postcode of Injury

Identifying and definitional attributes

Definition	The postcode where the trauma event occurred.
Justification	Used in the analysis of injury incident on a geographical basis. Where individual street addresses are available, postcodes can be mapped to more accurate Australian Standard Geographical Classification codes (ASGC) codes (e.g. SLAs).

Obligation

Optional

Representational attributes

Guide for use	Leave Postcode - Australian blank for: • Any overseas address; • Unknown address; • No fixed address.
Validation rules	
Related data element	
Data type	Number
Representational class	Code
Field size maximum	4
Format	{NNNN}
Data domain	Valid postcode

Administrative information

References	
Related metadata	METeOR ID: 287316

3.05 Injury Intent

Identifying and definitional attributes

Definition	The most likely role of human intent in the occurrence of the trauma event as determined by a clinician's assessment.
Justification	Used for injury surveillance.

Obligation

Optional

Representational attributes

Guide for use	Select the code which best characterises the role of intent in the occurrence of the injury, on the basis of the information available at the time it is recorded. If two or more categories are judged to be equally appropriate, select the one that comes first in the code list. This metadata item must always be accompanied by an Injury event - external cause based on ICD-10 AM
Validation rules	
Related data element	
Data type	String
Representational class	Code
Field size maximum	2
Format	N[N]

Data domain	**Value**	**Meaning**
	1	Accidental or unintentional - injury not intended
	2	Intentional self-harm
	3	Sexual assault
	4	Maltreatment by parent (including neglect)
	5	Maltreatment by spouse or partner (including domestic violence)
	6	Other and unspecified assault
	7	Event of undetermined intent
	8	Legal intervention (including police), operations of war or acts of terrorism
	9	Adverse effect or complications of medical and surgical care
	10	Other specified intent

11	Intent not specified

Administrative information

References

Related metadata METeOR ID: 268944

3.06 Place of Injury Occurrence

Identifying and definitional attributes

Definition	The type of location where the trauma event occurred.
Justification	To identify trends of injury and for injury prevention and control.

Obligation

Optional

Representational attributes

Guide for use	If two or more categories are judged to be equally appropriate, select the one that comes first in the code list. External cause codes in the range V00 to Y89 must be accompanied by a place of occurrence code. This field may be expressed in a number of ways. Existing numerical codesets used for similar fields may be mapped to or from this field.
Validation rules	
Related data element	
Data type	String
Representational class	Code
Field size maximum	6
Format	{ANN[.N[N]}
Data domain	**Valid code**

Administrative information

References	ICD-10-AM International Statistical Classification of Diseases and Related data element Health Problems, Australian Modification
Related metadata	METeOR ID: 391334

3.07 Activity Engaged in when Injured

Identifying and definitional attributes

Definition	The type of activity the person was engaged in at the time of the trauma event.
Justification	To identify trends of injury and for injury prevention and control. The basis for identifying work-related and sport-related injuries.

Obligation

Optional

Representational attributes

Guide for use	If two or more categories are judged to be equally appropriate, select the one that comes first in the code list. External cause codes V00 to Y34 must be accompanied by an activity code. This field may be expressed in a number of ways. Existing numerical codesets used for similar fields may be mapped to or from this field.
Validation rules	
Related data element	
Data type	String
Representational class	Code
Field size maximum	5
Format	ANNNN
Data domain	Valid code

Administrative information

References	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification 7th edition
Related metadata	METeOR ID: 391320

3.08 Injury Event Description

Identifying and definitional attributes

Definition A textual description of the environmental event, circumstance or condition as the cause of injury.

Justification The narrative of the injury event is very important as it identifies features of the event not revealed by coded data.

Obligation

Optional

Representational attributes

Guide for use Text description should include information relating to the circumstances prior to and surrounding the trauma event (including place of injury and activity), and what 'went wrong' to cause the trauma event.

Write a brief description of how the injury occurred. It should indicate:

- What went wrong (the breakdown event)
- The mechanism by which this event led to injury
- The object(s) or substance(s) most important in the event
- The type of place at which the event occurred
- The activity of the person who was injured

Validation rules

Related data element

Data type String

Representational class Text

Field size maximum 1000

Format [X(1000)]

Data domain

Administrative information

References

Related metadata METeOR ID: 268946

3.09 Safety Devices Used

Identifying and definitional attributes

Definition The use (or lack of use) of safety equipment relevant to the injury cause.

Justification

Obligation

Optional

Representational attributes

Guide for use *Seatbelt* include lap, shoulder and sash seatbelts.

Child car restraint examples include booster seat, child car seat, infant capsule.

Safety Protection examples include protective clothing (such as padded leather pants, industrial clothing), protective non-clothing (such as shin guard, knee or elbow pads) and eye protection (such as goggles, safety glasses).

Helmet examples include bicycle, skiing, motorcycle, rock climbing.

Code 10 – Not worn or used, if safety devises for codes 2- 7 available but not used or worn.

Code 11 – Not deployed, if code 8 available but has not deployed.

Validation rules

Related data element

Data type Number

Representational class Code

Field size maximum 2

Format N[N]

Data domain

Code	Description
1	No safety device
2	Seatbelt
3	Child car restraint
4	Safety protection
5	Helmet
6	Personal Floatation Device
7	Safety harness
8	Airbag deployed

9	Other
10	Not worn or used
11	Not deployed
99	Not stated/inadequately described

Administrative information

References

Related metadata METeOR ID: 268946

4.01 Mode of Transport from Scene

Identifying and definitional attributes

Definition	The type of transport by which the person left the scene of the trauma event to the Definitive Care Hospital.
Justification	To monitor patterns of transfer and mode of transportation used.

Obligation

Mandatory

Representational attributes

Guide for use		
Validation rules		
Related data element		
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Road Ambulance
	2	Helicopter Ambulance
	3	Fixed-wing Ambulance
	4	Private/Public Vehicle/Taxi/Walk-in
	5	Interstate Ambulance
	6	Private Ambulance
	7	Police/Prison Vehicle
	8	Other
	9	Not stated/inadequately described

Administrative information

References

Related metadata

4.02 Date & Time of Ambulance Arrival at Patient

Identifying and definitional attributes

Definition	The date and time the first ambulance service reached the person at the scene of injury.
Justification	To monitor patterns of transfer and mode of transportation used.

Obligation

Optional

Representational attributes

Guide for use	If a person was transported by ambulance service from the scene, the date and time the first ambulance service reached the person. Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001. Where the date and time is unknown, enter as: • 01011900T0000 Where date in known but time is unknown, enter actual date: • DDMMYYYYT0000 Where the time is known but date is unknown, enter actual time as: • 01011900Thhmm
Validation rules	Must be greater than or equal to: • Date & Time of Injury Must be less than or equal to: • Time of Arrival at Referring Hospital (if used) • Time of Departure from Referring Hospital (if used) • Date & Time of Arrival at Definitive Care Hospital
Related data element	Mode of Transport from Scene
Data type	Date/Time
Representational class	Date/Time
Field size maximum	13
Format	DDMMYYYYThhmm
Data domain	Valid Date and Time

Administrative information

References

Related metadata

4.03 Transfer from Other Hospital?

Identifying and definitional attributes

Definition	Whether the person was treated at another acute-care hospital prior to arrival at the definitive care hospital.
Justification	To identify the treatment pathway and outcomes.

Obligation

Mandatory

Representational attributes

Guide for use		
Validation rules		
Related data element		
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Yes
	2	No
	9	Not stated/inadequately described

Administrative information

References

Related metadata

4.04 Referring Hospital

Identifying and definitional attributes

Definition	The identifier for the establishment from which the person was transferred from.
Justification	To identify the referring health service provider for patient tracking.

Obligation

Mandatory

Representational attributes

Guide for use	Concatenation of: • Australian state/territory identifier (character position 1) • Sector (character position 2) • Region identifier (character positions 3-4) • Organisation identifier (state/territory), (character positions 5-9) If the person attended multiple hospitals prior to arriving at the hospital of definitive care, record the last transferring hospital.
Validation rules	Has to be completed if the following collected: • Transfer from Other Hospital?
Related data element	Transfer from Other Hospital?
Data type	String
Representational class	Identifier
Field size maximum	9
Format	NNX[X]NNNNN
Data domain	Valid identifier

Administrative information

References

Related metadata METeOR ID: 269973

4.05 Date & Time of Arrival at Referring Hospital

Identifying and definitional attributes

Definition	The date and time patient was first registered, triaged or assessed (whichever comes first), by clerical officer, nurse or doctor at the hospital from which they were transferred to the definitive care hospital.
Justification	Enables calculation of transfer time from referring hospital to definitive care hospital.

Obligation

Optional

Representational attributes

Guide for use	Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001. Where the date and time is unknown, enter as: • 01011900T0000 Where date in known but time is unknown, enter actual date: • DDMMYYYYT0000 Where the time is known but date is unknown, enter actual time as: • 01011900Thhmm If not collected, can be concatenated if the following data is collected at the referring hospital: • Health service event - presentation date (METeOR ID: 270393) • Health service event - presentation time (METeOR ID: 270080)
Validation rules	Has to be completed if the following collected: • Transfer from Other Hospital? Must be greater than or equal to: • Date & Time of Injury • Time of Ambulance Arrival at Patient (if used) Must be less than or equal to: • Time of Departure from Referring Hospital (if used) • Date & Time of Arrival at Definitive Care Hospital
Related data element	Transfer from Other Hospital?
Data type	Date/Time

Representational class	Date/Time
Field size maximum	13
Format	DDMMYYYYThhmm
Data domain	Valid Date and Time

Administrative information

References

Related metadata	METeOR ID: 270393
	METeOR ID: 270080

4.06 Date & Time of Departure from Referring Hospital

Identifying and definitional attributes

Definition	The date and time patient departed from the hospital from which they were transferred to the definitive care hospital.
Justification	Enables length of stay at referring hospital to be calculated.

Obligation

Optional

Representational attributes

Guide for use	Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001. Where the date and time is unknown, enter as: • 01011900T0000 Where date in known but time is unknown, enter actual date: • DDMMYYYYT0000 Where the time is known but date is unknown, enter actual time as: • 01011900Thhmm If the patient is transferred by ambulance service, the time the patient is loaded into the transferring ambulance may be used.
Validation rules	Has to be completed if the following collected: • Transfer from Other Hospital? Must be greater than or equal to: • Date & Time of Injury • Time of Ambulance Arrival at Patient (if used) • Time of Arrival at Referring Hospital (if used) Must be less than or equal to: • Date & Time of Arrival at Definitive Care Hospital
Related data element	Transfer from Other Hospital?
Data type	Date/Time
Representational class	Date/Time
Field size maximum	13
Format	DDMMYYYYThhmm
Data domain	Valid Date and Time

Administrative information

References

Related metadata

4.07 Mode of Transport from Referring Hospital to Definitive Care Hospital

Identifying and definitional attributes

Definition	The type of transport by which the person was transferred from another hospital to the definitive care hospital.
Justification	To monitor patterns of transfer and mode of transportation used.

Obligation

Optional

Representational attributes

Guide for use	In the event that a patient is flown by Royal Flying Doctor Service from Mt Isa to Townsville and lands at the airstrip in Townsville, is then loaded into an ambulance and taken to The Townsville Hospital, the mode of transport here is 'Fixed Wing', not 'Road'. This applies to most fixed wing transfers, where transport to the hospital will be by road car from the airport but mode of transport should be recorded as 'Fixed Wing'.
Validation rules	Has to be completed if the following collected: • Transfer from Other Hospital?
Related data element	Transfer from Other Hospital?
Data type	Number
Representational class	Code
Field size maximum	1
Format	N

Data domain

Code	Description
1	Ground Ambulance
2	Helicopter Ambulance
3	Fixed-wing Ambulance
4	Private/Public Vehicle/Taxi/Walk-in
5	Interstate Ambulance
6	Private Ambulance
7	Police
8	Other
9	Not stated/inadequately described

Administrative information

References

Related metadata

4.08 Pre-hospital Blood Transfusion?

Identifying and definitional attributes

Definition	Whether the person was administered any blood products prior to arrival at the definitive care hospital.
Justification	Administration of blood is an indication of the hypovolaemic status of a patient and may be used in the evaluation of quality of care.

Obligation

Optional

Representational attributes

Guide for use		
Validation rules		
Related data element		
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Yes
	2	No
	9	Not stated/inadequately described

Administrative information

References

Related metadata

4.09 Pre-hospital CPR?

Identifying and definitional attributes

Definition	Whether the person received cardiopulmonary resuscitation at any stage prior to arrival at the definitive care hospital.
Justification	CPR is a determinant of Cardiac arrest. Cardiac arrest is a predictor of adverse outcome and survival.

Obligation

Optional

Representational attributes

Guide for use		
Validation rules		
Related data element	Pre-Hospital Cardiac Arrest?	
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Yes
	2	No
	9	Not stated/inadequately described

Administrative information

References

Related metadata

4.10 Pre-hospital Cardiac Arrest?

Identifying and definitional attributes

Definition	Whether the person suffered a cardiac arrest at any stage prior to arrival at the definitive care hospital.
Justification	Cardiac arrest is a predictor of adverse outcome and survival.

Obligation

Optional

Representational attributes

Guide for use	Cardiac arrest requires the absence of a detectable pulse, unresponsiveness and apnoea.	
Validation rules		
Related data element	Pre-Hospital CPR?	
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Yes
	2	No
	9	Not stated/inadequately described

Administrative information

References

Related metadata

4.11 First Pulse

Identifying and definitional attributes

Definition	The first recorded heart rate measured at the scene of trauma, or (if unavailable or presented directly to referring hospital), the first recorded pulse measured at a referring hospital, before definitive care hospital, measured in beats per minute.
Justification	Used as a proxy to assess injury severity.

Obligation

Optional

Representational attributes

Guide for use	First measurement taken by any of ambulance, retrieval team or other hospital prior to definitive care hospital. Where the person's first presentation is at a definitive care hospital, code 996 – Not applicable If the person is in cardiac arrest at the time of first measurement, value 997 should be used. If the person's heart rate cannot be measured, code 999 - Not stated/inadequately described.
Validation rules	Permissible values 0 - 300
Related data element	
Data type	Number
Representational class	Total
Field size maximum	3
Format	N[NN]
Unit of measure	Heart beats per minute

Data domain

Value	Description
0-300	Heart beats per minute
996	Not applicable
997	Cardiac arrest
998	Not recorded
999	Not stated/inadequately described

Administrative information

References	
Related metadata	METeor ID: 285123

4.12 First Systolic BP

Identifying and definitional attributes

Definition	The first recorded systolic blood pressure measured at the scene of trauma, or (if unavailable or presented directly to referring hospital), the first recorded systolic blood pressure measured at a referring hospital, before definitive care hospital.
Justification	Used in several scoring systems including TRISS and is one assessment of patient acuity.

Obligation

Optional

Representational attributes

Guide for use	First measurement taken by any of ambulance, retrieval team or other hospital prior to definitive care hospital. Must be in millimetres of mercury (mmHg). Where the person's first presentation is at a definitive care hospital, code 996 – Not applicable If the systolic blood pressure is not or cannot be measured, value 999 should be used. Measurement protocol for resting blood pressure: The systolic blood pressure is one component of a routine blood pressure measurement (i.e. systolic/diastolic) and reflects the maximum pressure to which the arteries are exposed.
Validation rules	Permissible values 0 - 300
Related data element	
Data type	Number
Representational class	Total
Field size maximum	3
Format	N[NN]
Unit of measure	Millimetre of mercury (mmHg)

Data domain	**Value**	**Description**
	0-300	Millimetre of mercury (mmHg)
	996	Not applicable
	999	Not stated/inadequately described

Administrative information

References

Related metadata METeor ID: 270073

4.13 First Spontaneous Respiratory Rate

Identifying and definitional attributes

Definition	The first recorded unassisted rate of respiration measured at the scene of trauma, or (if unavailable or presented directly to referring hospital), the first recorded unassisted rate of respiration measured at a referring hospital, before definitive care hospital.
Justification	Used in several scoring systems including TRISS and is one assessment of patient acuity.

Obligation

Optional

Representational attributes

Guide for use	First measurement taken by any of ambulance, retrieval team or other hospital prior to definitive care hospital. Where the person's first presentation is at a definitive care hospital, code 996 – Not applicable If the person is in respiratory arrest at the time of first measurement, value 997 should be used. If the person has been intubated at the time of first measurement, value 998 should be used. If the respiratory rate is not or cannot be measured, value 999 should be used.
Validation rules	Permissible values 0 - 100
Related data element	
Data type	Number
Representational class	Total
Field size maximum	3
Format	N[NN]
Unit of measure	Number per minute

Data domain	**Value**	**Description**
	0-100	Number per minute
	996	Not applicable
	997	Respiratory arrest
	998	Intubated
	999	Not stated/inadequately described

Administrative information

References

Related metadata

4.14 First Temperature

Identifying and definitional attributes

Definition	The first recorded body temperature measured at the scene of trauma, or (if unavailable or presented directly to referring hospital), the first recorded body temperature measured at a referring hospital, before definitive care hospital.
Justification	Useful in the measurement of a patient vital status. Very high and low temperatures can be an indication of organ decomposition for an injured patient. Hypothermia can present a significant management problem.

Obligation

Optional

Representational attributes

Guide for use	First measurement taken by any of ambulance, retrieval team or other hospital prior to definitive care hospital. Must be in degrees Celsius. Where the person's first presentation is at a definitive care hospital, code 99.6 – Not applicable If the temperature is not or cannot be measured, value 99.9 should be used.	
Validation rules	Permissible value 20.0 – 50.0	
Related data element		
Data type	Number	
Representational class	Total	
Field size maximum	4	
Format	NN[.N]	
Unit of measure	Celsius	
Data domain	**Value**	**Description**
	20.0 – 50.0	Temperature in Celsius
	99.6	Not applicable
	99.9	Not stated/inadequately described

Administrative information

References

Related metadata

4.15 First GCS Eye

Identifying and definitional attributes

Definition	The first recorded Indication of the responsiveness to stimuli by eye opening at the scene of trauma, or (if unavailable or presented directly to referring hospital), the first recorded Indication of the responsiveness to stimuli by eye opening measured at a referring hospital, before definitive care hospital.
Justification	GCS components are combined and used as an important component in a number of outcome prediction models, and provide an indication of the patient's initial neurological status prior to arrival at definitive care. Required for RTS and TRISS.

Obligation

Optional

Representational attributes

Guide for use	First measurement taken by any of ambulance, retrieval team or other hospital prior to definitive care hospital. Where the person's first presentation is at a definitive care hospital, code 8 – Not applicable	
Validation rules	Permissible values 1 - 4	
Related data element	First Total GCS	
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Unit of measure	Valid code	
Data domain	**Code**	**Description (Adult-Child-Infant)**
	1	None-No Response-No Response
	2	Pain-Pain-Pain
	3	Voice-Verbal Stimuli-Verbal Stimuli
	4	Spontaneous-Spontaneous-Spontaneous
	8	Not applicable
	9	Not stated/inadequately described

Administrative information

References

Related metadata

4.16 First GCS Voice

Identifying and definitional attributes

Definition	The first recorded Indication of the level of verbal response at the scene of trauma, or (if unavailable or presented directly to referring hospital), the first recorded Indication of the level of verbal response measured at a referring hospital, before definitive care hospital.
Justification	GCS components are combined and used as an important component in a number of outcome prediction models, and provide an indication of the patient's initial neurological status prior to arrival at definitive care. Required for RTS and TRISS.

Obligation

Optional

Representational attributes

Guide for use	First measurement taken by any of ambulance, retrieval team or other hospital prior to definitive care hospital. Where the person's first presentation is at a definitive care hospital, code 8 – Not applicable	
Validation rules	Permissible values 1 - 5	
Related data element	First Total GCS	
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Unit of measure	Valid code	
Data domain	**Code**	**Description (Adult-Child-Infant)**
	1	None-No Response-No Response
	2	Incomprehensible words- Incomprehensible words, cries- Moans to pain
	3	Inappropriate words- Inappropriate words- Cries to pain
	4	Confused- Confused –Irritable, cries
	5	Oriented- Oriented –Coos, babbles
	8	Not applicable
	9	Not stated/inadequately described

Administrative information

References

Related metadata

4.17 First GCS Motor

Identifying and definitional attributes

Definition	The first recorded Indication of the level of motor response at the scene of trauma, or (if unavailable or presented directly to referring hospital), the first recorded Indication of the level of motor response measured at a referring hospital, before definitive care hospital.
Justification	GCS components are combined and used as an important component in a number of outcome prediction models, and provide an indication of the patient's initial neurological status prior to arrival at definitive care. The GCS motor component alone may be useful as an independent predictor of outcome. Required for RTS/TRISS.

Obligation

Optional

Representational attributes

Guide for use	First measurement taken by any of ambulance, retrieval team or other hospital prior to definitive care hospital. Where the person's first presentation is at a definitive care hospital, code 8 – Not applicable	
Validation rules	Permissible values 1 - 6	
Related data element	First Total GCS	
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Unit of measure	Valid code	
Data domain	**Code**	**Description (Adult-Child-Infant)**
	1	None-No Response-No Response
	2	Extension to pain- Extension to pain- Decerebrate posturing to pain
	3	Flexion to pain- Flexion to pain- Decorticate posturing to pain
	4	Withdraws to pain- Withdraws to pain– Withdraws to pain
	5	Localises pain- Localises painful stimulus– Withdraws to touch

6	Obeys commands- Obeys commands– Moves spontaneously
8	Not applicable
9	Not stated/inadequately described

Administrative information

References

Related metadata

4.18 First Total GCS

Identifying and definitional attributes

Definition	The first recorded total Glasgow Coma Scale score at the scene of trauma, or (if unavailable or presented directly to referring hospital), the first recorded total Glasgow Coma Scale score measured at a referring hospital, before definitive care hospital.
Justification	Used in several scoring systems including TRISS and required for the assessment of coma and impaired consciousness.

Obligation

Optional

Representational attributes

Guide for use	First measurement taken by any of ambulance, retrieval team or other hospital prior to definitive care hospital. If the person has been intubated at the time of first measurement, or is otherwise sedated or paralysed due to drug administration, value 96 should be used. Where the person's first presentation is at a definitive care hospital, code 98 – Not applicable If the total GCS is not or cannot be measured, value 99 should be used.
Validation rules	Permissible values 3 - 15.
Related data element	First GCS Eye First GCS Voice First GCS Motor
Data type	Number
Representational class	Total
Field size maximum	2
Format	N[N]
Unit of measure	

Data domain	**Code**	**Description**
	3- 15	Total GCS
	96	Intubated / sedated or paralysed due to drugs
	98	Not applicable
	99	Invalid / cannot be measured

Administrative information

References

Related metadata

5.01 Date & Time of Arrival at Definitive Care Hospital

Identifying and definitional attributes

Definition

The date and time patient was first registered, triaged or assessed (whichever comes first), by clerical officer, nurse or doctor at the definitive care hospital.

Justification

Enables calculation of transfer time from referring hospital to definitive care hospital (if applicable), time spent in ED, time to CT scan and time to operations and procedures. This field is also required for length of stay calculation.

Obligation

Mandatory

Representational attributes

Guide for use

Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001.

Where the date and time is unknown, enter as:

- 01011900T0000

Where date in known but time is unknown, enter actual date:

- DDMMYYYYT0000

Where the time is known but date is unknown, enter actual time as:

- 01011900Thhmm

If not collected, can be concatenated if the following data is collected at the definitive care hospital:

- Health service event - presentation date (METeOR ID: 270393)
- Health service event - presentation time (METeOR ID: 270080)

Validation rules

Has to be completed if the following collected:

- Transfer from Other Hospital?

Must be greater than or equal to:

- Date & Time of Injury
- Time of Ambulance Arrival at Patient (if used)
- Time of Arrival at Referring Hospital (if used)
- Time of Departure from Referring Hospital (if used)

Must be less than or equal to:

- ED Discharge Date & Time
- Date & Time of Discharge

Related data element	
Data type	Date/Time
Representational class	Date/Time
Field size maximum	13
Format	DDMMYYYYThhmm
Data domain	Valid Date and Time

Administrative information

References	
Related metadata	METeOR ID: 270393
	METeOR ID: 270080

5.02 Pulse on Arrival

Identifying and definitional attributes

Definition	The first recorded heart rate measured following arrival at the definitive care hospital.
Justification	Used as a proxy to assess injury severity.

Obligation

Mandatory

Representational attributes

Guide for use	If the person is in cardiac arrest at the time of first measurement, value 997 should be used. If the person's heart rate cannot be measured, code 999 - Not stated/inadequately described.
Validation rules	Permissible values 0 - 300
Related data element	
Data type	Number
Representational class	Total
Field size maximum	3
Format	N[NN]
Unit of measure	Heart beats per minute

Data domain	**Value**	**Description**
	0-300	Heart beats per minute
	997	Cardiac arrest
	998	Not recorded
	999	Not stated/inadequately described

Administrative information

References	
Related metadata	METeor ID: 285123

5.03 Systolic BP on Arrival

Identifying and definitional attributes

Definition	The first recorded systolic blood pressure measured following arrival at the definitive care hospital.
Justification	Used in several scoring systems including TRISS and is one assessment of patient acuity.

Obligation

Mandatory

Representational attributes

Guide for use	Must be in millimetres of mercury (mmHg). If the systolic blood pressure is not or cannot be measured, value 999 should be used. Measurement protocol for resting blood pressure: The systolic blood pressure is one component of a routine blood pressure measurement (i.e. systolic/diastolic) and reflects the maximum pressure to which the arteries are exposed.	
Validation rules	Permissible values 0 - 250	
Related data element		
Data type	Number	
Representational class	Total	
Field size maximum	3	
Format	N[NN]	
Unit of measure	Millimetre of mercury (mmHg)	
Data domain	**Value**	**Description**
	0-250	Millimetre of mercury (mmHg)
	999	Not stated/inadequately described

Administrative information

References	
Related metadata	METeor ID: 270073

5.04 First Spontaneous Respiratory Rate

Identifying and definitional attributes

Definition	The first recorded unassisted rate of respiration measured following arrival at the definitive care hospital.
Justification	Used in several scoring systems including TRISS and is one assessment of patient acuity.

Obligation

Mandatory

Representational attributes

Guide for use	If the person is in respiratory arrest at the time of first measurement, value 997 should be used. If the person has been intubated at the time of first measurement, value 998 should be used. If the respiratory rate is not or cannot be measured, value 999 should be used.	
Validation rules	Permissible values 0 - 100	
Related data element		
Data type	Number	
Representational class	Total	
Field size maximum	3	
Format	N[NN]	
Unit of measure	Number per minute	
Data domain	**Value**	**Description**
	0-100	Number per minute
	997	Respiratory arrest
	998	Intubated
	999	Not stated/inadequately described

Administrative information

References

Related metadata

5.05 Temperature on Arrival

Identifying and definitional attributes

Definition	The first recorded body temperature measured following arrival at the definitive care hospital.
Justification	Useful in the measurement of a patient vital status. Very high and low temperatures can be an indication of organ decomposition for an injured patient. Hypothermia can present a significant management problem.

Obligation

Optional

Representational attributes

Guide for use	Must be in degrees Celsius. If the temperature is not or cannot be measured, value 99.9 should be used.	
Validation rules	Permissible value 20.0 – 50.0	
Related data element		
Data type	Number	
Representational class	Total	
Field size maximum	4	
Format	NN[.N]	
Unit of measure	Celsius	
Data domain	**Value**	**Description**
	20.0 – 50.0	Temperature in Celsius
	99.9	Not stated/inadequately described

Administrative information

References

Related metadata

5.06 GCS Eye on Arrival

Identifying and definitional attributes

Definition	The first recorded Indication of the responsiveness to stimuli by eye opening following arrival at the definitive care hospital.
Justification	GCS components are combined and used as an important component in a number of outcome prediction models, and provide an indication of the patient's neurological status on arrival at the definitive care hospital. Required for RTS/TRISS.

Obligation

Optional

Representational attributes

Guide for use		
Validation rules	Permissible values 1 - 4	
Related data element	Total GCS on Arrival	
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Unit of measure	Valid code	
Data domain	**Code**	**Description (Adult-Child-Infant)**
	1	None-No Response-No Response
	2	Pain-Pain-Pain
	3	Voice-Verbal Stimuli-Verbal Stimuli
	4	Spontaneous-Spontaneous-Spontaneous
	9	Not stated/inadequately described

Administrative information

References

Related metadata

5.07 GCS Voice on Arrival

Identifying and definitional attributes

Definition	The first recorded Indication of the level of verbal response following arrival at the definitive care hospital.
Justification	GCS components are combined and used as an important component in a number of outcome prediction models, and provide an indication of the patient's neurological status on arrival at the definitive care hospital. Required for RTS/TRISS.

Obligation

Optional

Representational attributes

Guide for use		
Validation rules	Permissible values 1 - 5	
Related data element	Total GCS on Arrival	
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Unit of measure	Valid code	
Data domain	**Code**	**Description (Adult-Child-Infant)**
	1	None-No Response-No Response
	2	Incomprehensible words- Incomprehensible words, cries- Moans to pain
	3	Inappropriate words- Inappropriate words- Cries to pain
	4	Confused- Confused –Irritable, cries
	5	Oriented- Oriented –Coos, babbles
	9	Not stated/inadequately described

Administrative information

References

Related metadata

5.08 GCS Motor on Arrival

Identifying and definitional attributes

Definition	The first recorded Indication of the level of motor response following arrival at the definitive care hospital.
Justification	GCS components are combined and used as an important component in a number of outcome prediction models, and provide an indication of the patient's neurological status on arrival at the definitive care hospital. The GCS motor component alone may be useful as an independent predictor of outcome. Required for RTS/TRISS.

Obligation

Optional

Representational attributes

Guide for use		
Validation rules	Permissible values 1 - 6	
Related data element	First Total GCS	
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Unit of measure	Valid code	
Data domain	**Code**	**Description (Adult-Child-Infant)**
	1	None-No Response-No Response
	2	Extension to pain- Extension to pain- Decerebrate posturing to pain
	3	Flexion to pain- Flexion to pain- Decorticate posturing to pain
	4	Withdraws to pain- Withdraws to pain– Withdraws to pain
	5	Localises pain- Localises painful stimulus– Withdraws to touch
	6	Obeys commands- Obeys commands– Moves spontaneously
	9	Not stated/inadequately described

Administrative information

References

Related metadata

5.09 Total GCS on Arrival

Identifying and definitional attributes

Definition	The first recorded total Glasgow Coma Scale score following arrival at the definitive care hospital.
Justification	Used in several scoring systems including TRISS and required for the assessment of coma and impaired consciousness.

Obligation

Mandatory

Representational attributes

Guide for use	If the person has been intubated at the time of first measurement, or is otherwise sedated or paralysed due to drug administration, value 98 should be used. If the total GCS is not or cannot be measured, value 99 should be used.	
Validation rules	Permissible values 3 - 15.	
Related data element	GCS Eye on Arrival GCS Voice on Arrival GCS Motor on Arrival	
Data type	Number	
Representational class	Total	
Field size maximum	2	
Format	N[N]	
Unit of measure		
Data domain	**Code**	**Description**
	3- 15	Total GCS
	98	Intubated / sedated or paralysed due to drugs
	99	Invalid / cannot be measured

Administrative information

References

Related metadata

5.10 CPR on arrival?

Identifying and definitional attributes

Definition	Whether the person received cardiopulmonary resuscitation at any stage within 24 hours of arrival at the definitive care hospital.
Justification	CPR is a determinant of Cardiac arrest. Cardiac arrest is a predictor of adverse outcome / survival.

Obligation

Optional

Representational attributes

Guide for use		
Validation rules		
Related data element		
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Yes
	2	No
	9	Not stated/inadequately described

Administrative information

References

Related metadata

5.11 Blood Transfusion on Arrival?

Identifying and definitional attributes

Definition	Whether the person was administered any blood products at any stage within 24 hours of arrival at the definitive care hospital.
Justification	Administration of blood is an indication of the hypovolaemic status of a patient and may be used in the evaluation of quality of care.

Obligation

Optional

Representational attributes

Guide for use

Validation rules

Related data element

Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Yes
	2	No
	9	Not stated/inadequately described

Administrative information

References

Related metadata

5.12 Patient Intubated?

Identifying and definitional attributes

Definition	Whether the person was intubated at any stage of their care, whether prior to or at the definitive care hospital.
Justification	Identifies patients requiring definitive airway management and may be used in the evaluation of quality of care.

Obligation

Mandatory

Representational attributes

Guide for use

Validation rules

Related data element

Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Yes
	2	No
	9	Not stated/inadequately described

Administrative information

References

Related metadata

5.13 Date & Time Patient Intubated

Identifying and definitional attributes

Definition	The date and time patient was first intubated - at any stage of their care, whether prior to or at the definitive care hospital.
Justification	To calculate time to intubation.

Obligation

Optional

Representational attributes

Guide for use	Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001. Where the date and time is unknown, enter as: • 01011900T0000 Where date in known but time is unknown, enter actual date: • DDMMYYYYT0000 Where the time is known but date is unknown, enter actual time as: • 01011900Thhmm
Validation rules	Has to be completed if the following collected: • Patient intubated? Must be greater than or equal to: • Date & Time of Injury Must be less than or equal to: • Date & Time of Discharge
Related data element	
Data type	Date/Time
Representational class	Date/Time
Field size maximum	13
Format	DDMMYYYYThhmm
Data domain	Valid Date and Time

Administrative information

References

Related metadata

5.14 Respiratory Qualifier on Arrival

Identifying and definitional attributes

Definition	Whether respiratory assistance was required at the time the respiratory rate was recorded on arrival at the definitive care hospital.
Justification	Provides documentation of assessment and care. Used in quality management for the evaluation of care.

Obligation

Mandatory

Representational attributes

Guide for use

Validation rules Has to be completed if any of the following collected:

- First Spontaneous Respiratory Rate
- Patient Intubated?
- Date & Time Patient Intubated

Related data element First Spontaneous Respiratory Rate

Patient Intubated?

Date & Time Patient Intubated

Representational class Code

Field size maximum 1

Format N

Data domain

Code	Description
1	Unassisted respiratory rate or no intervention – respiration rate is not assisted by any mechanical or assisted ventilation.
2	Assisted respiratory rate – includes Mechanical Ventilation (patient is intubated and receiving mechanical ventilation by ventilator and Bag Mask Ventilation (BMV) (patient is receiving assisted ventilation by bag/mask device eg. face mask, bag and mask, guedel or naso, laryngeal mask, endotracheal tube, prior ETT (i.e. intubated pre arrival to definitive care hospital) and surgical airway)
8	Other
9	Not stated/inadequately described

Administrative information

References

Related metadata

5.15 Blood Alcohol Concentration on Arrival

Identifying and definitional attributes

Definition	The first blood alcohol concentration result recorded on arrival at the definitive care hospital.
Justification	Alcohol affects the Glasgow Coma Scale.

Obligation

Optional

Representational attributes

Guide for use	Must be in gm% - convert from ethanol mmol/L by dividing by 217.1. If alcohol is recorded in mg/dl, divide result by 1000. Must be taken within the first 24 hours following arrival at the definitive care hospital. If the blood alcohol concentration is not or cannot be measured, value 9 should be used.	
Validation rules	Permissible values 0 - 1	
Related data element		
Data type	Number	
Representational class	Total	
Field size maximum	5	
Format	N.NNN	
Unit of measure	gm%	
Data domain	**Value**	**Description**
	0.000-1.000	Blood alcohol concentration (gm%)
	9.999	Not stated/inadequately described

Administrative information

References

Related metadata

5.16 First Measured Arterial Base Excess

Identifying and definitional attributes

Definition	The first recorded arterial base excess result following arrival at the definitive care hospital.
Justification	Clinical assessment of patient's condition on arrival at definitive care hospital which may indicate the need for additional treatment. Identify complication of trauma.

Obligation

Optional

Representational attributes

Guide for use	Unit of measurement is mmol/L. Must be taken within the first 24 hours following arrival at the definitive care hospital. If more than one value has been measured within the first 24 hours after arrival at the definitive care hospital, report the first measured value, not the worst value. If the arterial base excess is not or cannot be measured, value 99 should be used.	
Validation rules	Permissible values -3 - 3	
Related data element		
Data type	Number	
Representational class	Total	
Field size maximum	2	
Format	[A]N	
Unit of measure	mmol/L	
Data domain	**Value**	**Description**
	-3 - 3	Arterial base excess value (mmol/L)
	99	Not stated/inadequately described

Administrative information

References

Related metadata

5.17 First Measured INR

Identifying and definitional attributes

Definition	The first recorded prothrombin time INR result following arrival at the definitive care hospital.
Justification	Clinical assessment of patient's condition on arrival at definitive care hospital which may indicate the need for additional treatment. Identify complication or comorbidity.

Obligation

Optional

Representational attributes

Guide for use	Unit of measurement is mmol/L.	
	Must be taken within the first 24 hours following arrival at the definitive care hospital.	
	If the INR is not or cannot be measured, value 99.9 should be used.	
Validation rules	Permissible values 2.0 – 3.0	
Related data element		
Data type	Number	
Representational class	Total	
Field size maximum	3	
Format	N.N	
Unit of measure	mmol/L	
Data domain	**Value**	**Description**
	2.0 – 3.0	INR value (mmol/L)
	99.9	Not stated/inadequately described

Administrative information

References

Related metadata

5.18 ED Discharge Date & Time

Identifying and definitional attributes

Definition The date and time patient left the emergency department at the definitive care hospital, or (if dying in the emergency department) the time of death.

Justification Calculation of total length of ED stay.

Obligation

Mandatory

Representational attributes

Guide for use Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001.

Where date and time is unknown, enter as:

- 01011900T0000

Where date in known but time is unknown, enter actual date:

- DDMMYYYYT0000

Where the time is known but date is unknown, enter actual time as:

- 01011900Thhmm

If a patient is a direct admission and goes directly to another area in the hospital on hospital arrival (such as ICU or OR), this should be the same as:

- Date & Time of Arrival at Definitive care Hospital

If not collected, can be concatenated if the following data is collected at the definitive care hospital:

- Emergency department stay - physical departure date (METeOR ID: 322597)
- Emergency department stay - physical departure time (METeOR ID: 322610)

Validation rules Must be greater than or equal to:

- Date & Time of Arrival at Definitive Care Hospital

Must be less than or equal to:

- Date & Time of Discharge

Related data element Transfer from Other Hospital?

Data type Date/Time

Representational class Date/Time

Field size maximum	13
Format	DDMMYYYYThhmm
Data domain	Valid Date and Time

Administrative information

References

Related metadata	METeOR ID: 322597
	METeOR ID: 322610

5.19 Disposition After ED

Identifying and definitional attributes

Definition	The first location for which the patient departed on leaving the emergency department at the definitive care hospital.
Justification	To monitor the status and location of patients on departure from the ED.

Obligation

Optional

Representational attributes

Guide for use	If a patient is a direct admission and goes directly to another area in the hospital on hospital arrival (such as ICU or OR), code the unit or department where the patient was admitted to.
Validation rules	If a patient is a direct admission and goes directly to another area in the hospital on hospital arrival (such as ICU or OR), ED Discharge Date & Time should be coded as: • Date & Time of Arrival at Definitive Care Hospital.
Related data element	ED Discharge Date & Time
Data type	Number
Representational class	Code
Field size maximum	1
Format	N[N]

Data domain

Code	Description
1	Ward
2	Intensive Care Unit (ICU)
3	High Dependency Unit (HDU)
4	Operating Room (OR)
5	OR to Ward
6	OR to ICU
7	OR to HDU
8	OR then transfer to another hospital for acute care
9	Transfer to another hospital for acute care
10	Home
11	Death
12	Death in ED

13	Other (eg. jail, institutional care, mental health, etc.)
96	Not Applicable
99	Not stated/inadequately described

Administrative information

References

Related metadata

6.01 Diagnosis made >24 hours after arrival?

Identifying and definitional attributes

Definition	Whether the specified injury was diagnosed more than 24 hours after arrival at the definitive care hospital.
Justification	Represents the time required to initiate key in-hospital diagnostic tests, and may be seen as a measure of the efficiency of the trauma system.

Obligation

Optional

Representational attributes

Guide for use		
Validation rules		
Related data element		
Data type	Number	
Representational class	Code	
Field size maximum	1	
Format	N	
Data domain	**Code**	**Description**
	1	Yes
	2	No
	9	Not stated/inadequately described

Administrative information

References

Related metadata

6.02 Date & Time CT Performed

Identifying and definitional attributes

Definition	The date and time patient received a CT scan - at any stage of their care, whether prior to or at the definitive care hospital.
Justification	Represents the time required to initiate key diagnostic tests, and may be seen as a measure of the efficiency of the trauma system.

Obligation

Optional

Representational attributes

Guide for use	Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001. Where the date and time is unknown, enter as: • 01011900T0000 Where date in known but time is unknown, enter actual date: • DDMMYYYYT0000 Where the time is known but date is unknown, enter actual time as: • 01011900Thhmm May be limited to CT performed at the definitive care hospital. May be limited to CT performed within 24 hours of arrival at the definitive care hospital.
Validation rules	Must be greater than or equal to: • Date & Time of Injury Must be less than or equal to: • Date & Time of Discharge
Related data element	
Data type	Date/Time
Representational class	Date/Time
Field size maximum	13
Format	DDMMYYYYThhmm
Data domain	Valid Date and Time

Administrative information

References

Related metadata

6.03 CT type

Identifying and definitional attributes

Definition	The body region on which the specified CT scan was performed.
Justification	Diagnostic tool to evaluate the nature and extent of injuries and provides an indication for treatment.

Obligation

Optional

Representational attributes

Guide for use	May be limited to CT performed at the definitive care hospital. May be limited to CT performed within 24 hours of arrival at the definitive care hospital.
Validation rules	
Related data element	
Data type	Number
Representational class	Code
Field size maximum	2
Format	N[N]

Data domain	**Code**	**Description**
	1	Brain
	2	Head/Face
	3	Orbits
	4	Neck
	5	Chest
	6	Spine - Cervical
	7	Spine - Thoracic
	8	Spine - Lumbar
	9	Limbs
	10	Abdomen
	11	Pelvis
	12	Angiogram
	13	Other
	99	Not stated/inadequately described

Administrative information

References

Related metadata

6.04 Operative Procedures in OR

Identifying and definitional attributes

Definition	Operative intervention undertaken - at any stage of their care, whether prior to or at the definitive care hospital.
Justification	Used to characterise procedures used to treat specific injury types to enable analysis of triage and treatment.

Obligation

Optional

Representational attributes

Guide for use	Operative and/or essential procedures is defined as procedures performed in the Operating Room. Do not include procedures done in other departments such as ED, ICU, etc. Limited to interventions for severe or potentially severe injuries only. May be limited to interventions performed at the definitive care hospital. May be limited to interventions performed within 24 hours of arrival at the definitive care hospital.
Validation rules	
Related data element	
Data type	String
Representational class	Code
Field size maximum	8
Format	NNNNN-NN
Data domain	Australian Classification of Health Interventions (ACHI) 7th edition

Administrative information

References	
Related metadata	METeOR ID: 391349 - Episode of admitted patient care - procedure, code (ACHI 7th edn)

6.05 Operation Date & Time

Identifying and definitional attributes

Definition	The date and time operative intervention was undertaken - at any stage of their care, whether prior to or at the definitive care hospital.
Justification	Allows time to operation to be calculated.

Obligation

Optional

Representational attributes

Guide for use	Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001. Where the date and time is unknown, enter as: • 01011900T0000 Where date in known but time is unknown, enter actual date: • DDMMYYYYT0000 Where the time is known but date is unknown, enter actual time as: • 01011900Thhmm Limited to interventions for severe or potentially severe injuries only. May be limited to interventions performed at the definitive care hospital. May be limited to interventions performed within 24 hours of arrival at the definitive care hospital. Start time is the time anaesthesia is administered.
Validation rules	Must be greater than or equal to: • Date & Time of Injury Must be less than or equal to: • Date & Time of Discharge
Related data element	Transfer from Other Hospital?
Data type	Date/Time
Representational class	Date/Time
Field size maximum	13
Format	DDMMYYYYThhmm
Data domain	Valid Date and Time

Administrative information

References

Related metadata METeOR ID: 270298 – Episode of admitted patient care (procedure) - procedure commencement date

6.06 Number of days on ventilator

Identifying and definitional attributes

Definition	The total number of days (whole or partial) on which mechanical ventilation was used.
Justification	Ventilation increases risk of complications, such as Ventilator Association Pneumonia, and may lead to potentially poorer outcomes.

Obligation

Optional

Representational attributes

Guide for use	Field allows for multiple “start” and “stop” dates and calculates total days spent (in part or in whole) on a mechanical ventilator (excluding during an Operating Room procedure). If mechanical ventilation was used at the definitive care hospital, value must be 1 or more. Exception is when the only mechanical ventilation used occurs during an Operating Room procedure. Include days on CPAP/BiPAP ventilation, both on a modern ventilator and on external devices.	
Validation rules		
Related data element		
Data type	Number	
Representational class	Total	
Field size maximum	3	
Format	N[NN]	
Unit of measure	Days (Integer value, with partial days rounded up.)	
Data domain	**Value**	**Description**
	1-400	Valid days
	999	Not stated/inadequately described

Administrative information

References

Related metadata

7.01 AIS Injury Codes

Identifying and definitional attributes

Definition	The assigned Abbreviated Injury Scale anatomical scoring codes for each injury sustained by the patient.
Justification	The main purpose is to calculate the overall injury severity of the patient which can be used for TRISS and outcome analysis.

Obligation

Mandatory

Representational attributes

Guide for use	Abbreviated Injury Scale codes AIS 2005 Update 2008. If earlier AIS versions are used, these codes will need to be mapped to the comparable 2008 AIS estimates. If AIS coding is not used, it will be necessary to map from International Classification of Diseases (ICD) injury codes to obtain comparable AIS estimates.
Validation rules	
Related data element	Injury Severity Score New Injury Severity Score
Data type	String
Representational class	Code
Field size maximum	8
Format	NNNNNN.N
Data domain	AIS 2005 Update 2008 codes

Administrative information

References	Gennarelli TA, Wodzin E. , (Eds) The Abbreviated Injury Scale 2005 - Update 2008. Barrington, IL: Association for the Advancement of Automotive Medicine; 2008
Related metadata	

7.02 Date & Time of Discharge from Definitive Care

Identifying and definitional attributes

Definition The date and time patient was discharged from the definitive care hospital, or (if dying in hospital) the time of death.

Justification To calculate length of stay at the definitive care hospital.

Obligation

Mandatory

Representational attributes

Guide for use Midnight should be entered as 00:01 of the following date (00:00 and 24:00 are not accepted). Example, midnight 25th November 2011 should be reported as 25112011T0001.

Where the date and time is unknown, enter as:

- 01011900T0000

Where date in known but time is unknown, enter actual date:

- DDMMYYYYT0000

Where the time is known but date is unknown, enter actual time as:

- 01011900Thhmm

It is the date of separation from the definitive care hospital.

If not collected, can be concatenated if the following data is collected at the definitive care hospital:

- Episode of admitted patient care - separation date (METeOR ID: 270025)
- Episode of admitted patient care - separation time (METeOR ID: 270026)

Validation rules Must be greater than or equal to:

- Date & Time of Arrival at Definitive Care Hospital
- ED Discharge Date & Time

Related data element

Data type Date/Time

Representational class Date/Time

Field size maximum 13

Format DDMMYYYYThhmm

Data domain Valid Date and Time

Administrative information

References

Related metadata METeOR ID: 270025

METeOR ID: 270026

7.03 Discharge Destination from Acute Care

Identifying and definitional attributes

Definition	The location to which the patient was discharged from acute care in the definitive care hospital.
Justification	To determine the outcome status of patients.

Obligation

Mandatory

Representational attributes

Guide for use	If the patient is discharged back to the usual or original place of residence such as a nursing home, aged care facility or special accommodation, code 1 – Home
Validation rules	
Related data element	
Data type	Number
Representational class	Code
Field size maximum	2
Format	N[N]

Data domain	**Code**	**Description**
	1	Home
	2	Rehabilitation
	3	Residential aged care service or nursing home not the usual place of residence
	4	Special accommodation (includes prisons, hostels and group homes providing primarily welfare services) that is not the usual place of residence
	5	Hospital for convalescence
	6	Left against medical advice/discharge at own risk
	7	Death
	8	Other
	99	Not stated/inadequately described

Administrative information

References	
Related metadata	METeOR ID: 270094

7.04 Injury Severity Score

Identifying and definitional attributes

Definition	The calculated Injury Severity Score based on the entered Abbreviated Injury Scale codes at discharge. ISS is an anatomical scoring system that provides an overall score for patients with multiple injuries.
Justification	To determine severity of injury for multiple trauma patients. Used to characterise patients and hospital outcomes based upon the presence, severity and type of injury.

Obligation

Mandatory

Derived

Representational attributes

Guide for use	A non-zero integer number calculated based on AIS codes. If AIS codes are available, this should be derived as a calculated field. If an injury is assigned an AIS severity of 6 (unsurvivable injury), the ISS score is automatically assigned 75.
Validation rules	Permissible values 1 - 75
Related data element	AIS Injury Codes
Data type	Number
Representational class	Code
Field size maximum	2
Format	N[N]

Data domain	**Code**	**Description**
	1 - 75	ISS codes
	99	Not stated/inadequately described

Administrative information

References	Baker SP, O'Neill B, Haddon W, Jr., Long WB. The injury severity score: a method for describing patients with multiple injuries and evaluating emergency care. *J Trauma* 1974;14:187-96
Related metadata	

7.05 New Injury Severity Score

Identifying and definitional attributes

Definition	The calculated New Injury Severity Score based on the entered Abbreviated Injury Scale codes at discharge.
Justification	To determine severity of injury for multiple trauma patients. Used to characterise patients and hospital outcomes based upon the presence, severity and type of injury.

Obligation

Mandatory

Derived

Representational attributes

Guide for use	A non-zero integer number calculated based on AIS codes. If AIS codes are available, this should be derived as a calculated field. If an injury is assigned an AIS severity of 6 (unsurvivable injury), the NISS score is automatically assigned 75.	
Validation rules	Permissible values 1 - 75	
Related data element	AIS Injury Codes	
Data type	Number	
Representational class	Code	
Field size maximum	2	
Format	N[N]	
Data domain	**Code**	**Description**
	1 - 75	NISS codes
	99	Not stated/inadequately described

Administrative information

References	Osler T, Baker SP, Long W: A modification of the injury severity score that both improves accuracy and simplifies scoring. *J Trauma* 1997;43:922–925. Baker SP. Advances and adventures in injury prevention. *J Trauma: Injury Infect Crit Care* 42:369-73, 1997.
Related metadata	

7.06 Length of Stay

Identifying and definitional attributes

Definition	The total number of hospital days spent in the definitive care hospital from date of admission to date of discharge or death.
Justification	Length of stay can be associated with increased risk of complications and poorer outcomes. Length of stay also reflects the use of hospital resources.

Obligation

Mandatory

Derived

Representational attributes

Guide for use	Calculated length of stay in the definitive care hospital, measured as a (with fractional component expressed as a decimal), rather than bed days. A non-zero number expressed in days. If patient dies within (and inclusive of) the first 7 minutes of care, enter value of 0.01. (example, if calculated value less than 0.005 days, enter as 0.01 days). Bed days or whole days are commonly used (cf METeOR: 329889 – Episode of admitted patient care—length of stay (including leave days)), but this gives rise to data inaccuracies; data from this field can be aggregated if required. Can be calculated from: • Date & Time of Discharge • Date & Time of Arrival at Definitive Care Hospital If both data items are available, this should be derived as a calculated field.
Validation rules	Has to be completed if the following collected: • Date & Time of Discharge • Date & Time of Arrival at Definitive care Hospital
Related data element	Date & Time of Discharge Date & Time of Arrival at Definitive Care Hospital
Data type	Number
Representational class	Total
Field size maximum	6
Format	[NN]N.NN

Unit of measure	Days (with partial days expressed to two decimal points)	
Data domain	**Value**	**Description**
	0.01-400.00	Valid days
	999.99	Not stated/inadequately described

Administrative information

References

Related metadata METeOR ID: 329889 – Episode of admitted patient care - length of stay (including leave days)

7.07 Length of ICU Stay

Identifying and definitional attributes

Definition	The total number of hospital days spent in the Intensive Care Unit (ICU) at the definitive care hospital.
Justification	An important measure of the patient care process.

Obligation

Mandatory

Representational attributes

Guide for use	Calculated length of stay in the intensive care unit at the definitive care hospital, measured as a (with fractional component expressed as a decimal), rather than bed days. A non-zero number expressed in days. If patient dies within the first 7 minutes of care (ie. Less than 7 minutes), enter value of 0.01. (example, if calculated value less than 0.005 days, enter as 0.01 days). If a patient was not admitted to ICU, code 0. Bed days or whole days are commonly used but this gives rise to data inaccuracies; data from this field can be aggregated if required.
Validation rules	
Related data element	
Data type	Number
Representational class	Total
Field size maximum	6
Format	[NN]N.NN
Unit of measure	Days (with partial days expressed to two decimal points)

Data domain	**Value**	**Description**
	0.00-400.00	Valid days
	999.99	Not stated/inadequately described

Administrative information

References

Related metadata

7.08 Severe Complications?

Identifying and definitional attributes

Definition	Whether a condition arising following the injury event had a substantial effect on the management, progress or eventual outcome of the patient. Complication refers to condition/s that develops after the injury, affecting the progress or outcome of the patient that requires management and/or treatment.
Justification	Significant complications are associated with poorer outcomes and may potentially lead to an increased length of hospital stay.

Obligation

Optional

Representational attributes

Guide for use	ICD-10 AM Australian Coding Standards diagnosis codes can be used to map to specified severe complications groups.
Validation rules	
Related data element	
Data type	String
Representational class	Code
Field size maximum	6
Format	ANN{.N[N]}
Data domain	ICD-10-AM International Statistical Classification of Diseases and Related data element Health Problems, Australian Modification

Administrative information

References

Related metadata

Appendix

The BNTMDS have been compared to other international trauma datasets to ensure high compatibility and alignment where possible, but modified to suit an Australian and New Zealand context.

These resources are:

1. European Utstein template (Utstein)

   Reference: The Utstein Trauma Template for Uniform Reporting of Data following Major Trauma Data Dictionary, Version 1.1.1, May 19 2009.

2. American National Trauma Data Bank (NTDB)

   Reference: National Trauma Data Standard, Data Dictionary 2011 Admissions, February 2011.

3. Canadian National Trauma Registry (NTR)

   Reference: National Trauma Registry Comprehensive Data Set (NTR CDS) Data Element List, December 2001.

The following table provides data item references and comparisons to each of these three international datasets where available. Where applicable, data items are defined as:

(1) Comparable, together with the corresponding data item name for each dataset, or

(2) Partially comparable, noting the exceptions.

BNTMDS Data Item Name	Utstein	NTDB	NTR
Institution	None	None	Comparable: • Institution
Trauma Number	None	None	Comparable: • Trauma Number
Incident Number	None	None	Comparable: • Unique personal identifier
Date of birth	None	Comparable: • Date of birth	None
Age	Partially comparable: (Exception: less specific; decimal part used for age <1 year only)	Partially comparable: (Exception: less specific; unit of measure changes with age <1 year)	Partially comparable: (Exception: less specific; whole years used only)
Sex	Comparable: • Sex	Comparable: • Gender	Comparable: • Sex

Pre-injury Comorbidities	Comparable: • Pre-injury ASA Physical Status Classification	Comparable: • Co-morbid conditions	None
Date & Time of Injury	None	Comparable: Formed using – • Injury Incident Date • Injury Incident Time	Partially comparable: • Date of injury
Injury Cause (Mechanism)	Comparable: • Mechanism of Injury	Comparable: • Primary E-Code	• Comparable: Injury etiology (E-code)
Dominant Injury Type	Comparable: • Dominating type of injury	Comparable: • Trauma type	Partially comparable: • Injury type Exception: related primarily to anatomical injury.
Postcode of Injury	None	Comparable: • Injury Location Zip Code	Comparable: • Regional identifier of incident location (GEOCODE)
Injury Intent	Comparable: • Intention of Injury	Comparable: • Injury Intentionality	None
Place of Injury Occurrence	None	Comparable: • Location E-Code	Comparable: • Place of incident
Activity Engaged in when Injured	None	Partially comparable: • Work-related (Exception: fields are specific to particular activities only)	Partially comparable: • Sports/Recreational Activity Code • Work-Related Code (Exception: fields are specific to particular activities only)
Injury Description	None	None	None
Safety Devices Used	None	Comparable: • Protective devices • Child specific restraint (partially comparable) • Airbag deployment(partially comparable)	Comparable: • Protective Devices

Mode of Transport from Scene	Partially comparable: • Type of transportation (Exception: not specific enough; dependent on whether patient was transferred from another hospital)	Partially comparable: • Transport mode (Exception: not specific enough; dependent on whether patient was transferred from another hospital)	Comparable: • Mode of transport from scene
Time of Ambulance Arrival at Patient	None	Partially comparable; formed using: • EMS unit arrival time at scene or transferring facility • EMS unit arrival time at scene or transferring facility (Exception: not specific enough; dependent on whether patient was transferred from another hospital)	None
Transfer from Other Hospital?	Comparable: • Inter-Hospital Transfer	Comparable: • Inter-facility transfer	Comparable: • Direct admission
Referring Hospital Name	None	None	None
Time of Arrival at Referring Hospital	None	None	None
Time of Departure from Referring Hospital	None	None	None
Mode of Transport from Referring Hospital to Definitive care Hospital	Comparable: • Type of Transportation	Comparable: • Transport mode	None
Pre-hospital Blood Transfusion?	None	None	None
Pre-hospital CPR?	None	None	None
Prehospital Cardiac Arrest?	Comparable: • Pre-hospital Cardiac Arrest	None	None
First Pulse	None	Partially comparable: • Initial field pulse rate (Exception: more specific; requires measurement at scene)	None

First Systolic BP	Partially comparable: • Systolic Blood Pressure upon arrival of EMS personnel at scene (Exception: more specific; requires measurement at scene)	Partially comparable: • Initial field systolic blood pressure (Exception: more specific; requires measurement at scene)	None
First Spontaneous Respiratory Rate	Partially comparable: • Respiratory Rate upon arrival of EMS personnel at scene (Exception: more specific; requires measurement at scene)	Partially comparable: • Initial field respiratory rate (Exception: more specific; requires measurement at scene)	None
First Temperature	None	None	None
First GCS Eye	None	Partially comparable: • Initial field GCS - eye (Exception: more specific; requires measurement at scene)	None
First GCS Voice	None	Partially comparable: • Initial field GCS - verbal (Exception: more specific; requires measurement at scene)	None
First GCS Motor	Partially comparable: • Glasgow Coma Scale Motor Component upon arrival of EMS personnel at scene (Exception: more specific; requires measurement at scene)	Partially comparable: • Initial field GCS - motor (Exception: more specific; requires measurement at scene)	None
First Total GCS	Partially comparable: • Glasgow Coma Scale Score upon arrival of EMS personnel at scene (Exception: more specific; requires measurement at scene)	Partially comparable: • Initial field GCS - total (Exception: more specific; requires measurement at scene)	None

Date & Time of Arrival at Definitive care Hospital	None	Comparable; Formed using – • ED/Hospital Arrival Date • ED/Hospital Arrival Time	Partially comparable: • Date of arrival at trauma centre (Exception: incomplete; time component is missing)
Pulse on Arrival	None	Comparable: • Initial ED/hospital pulse rate	None
Systolic BP on Arrival	Comparable: • Systolic Blood Pressure upon arrival in ED/hospital	Comparable: • Initial ED/hospital systolic blood pressure	Comparable: • Systolic blood pressure on arrival at trauma centre
First Spontaneous Respiratory Rate	Comparable: • Respiratory rate upon arrival in ED / hospital	Comparable: • Initial ED/hospital respiratory rate	Comparable: • Unassisted respiratory rate on arrival at trauma centre
Temperature on Arrival	None	Comparable: • Initial ED/hospital temperature	None
GCS Eye on Arrival	None	Comparable: • Initial ED/hospital GCS - eye	Comparable: • GCS - Eye opening on arrival at trauma centre
GCS Voice on Arrival	None	Comparable: • Initial ED/hospital GCS - verbal	Comparable: • GCS - Verbal response on arrival at trauma centre
GCS Motor on Arrival	Comparable: • Glasgow Coma Scale Motor Component upon arrival in ED/hospital	Comparable: • Initial ED/hospital GCS - motor	Comparable: • GCS - Motor response on arrival at trauma centre
Total GCS on Arrival	Comparable: • Glasgow Coma Scale Score upon arrival in ED /hospital	Comparable: • Initial ED/hospital GCS - total	Comparable: • Total GCS on arrival at trauma centre
CPR on Arrival?	None	None	None
Blood Transfusion on Arrival?	None	None	None

Patient Intubated?	Partially comparable: • Type of Pre-Hospital Airway Management (Exception: more specific; pre-hospital only)	None	Partially comparable: • Intubation code on arrival at trauma centre (Exception: more specific; definitive care hospital arrival only)
Date & time Patient Intubated	None	None	None
Respiratory Qualifier on Arrival	None	Comparable: • Initial ED/hospital respiratory assistance	Partially comparable: • Intubation code on arrival at trauma centre (Exception: imputed value; must be inferred from status of other field)
Blood Alcohol Concentration on Arrival	None	Partially comparable: • Alcohol use indicator (Exception: less specific; categorical field (none/trace/ high).)	Comparable: • Blood alcohol concentration
First Measured Arterial Base Excess	Comparable: • Arterial Base Excess	None	None
First Measured INR	Comparable: • Coagulation: INR	None	None
ED Discharge Date & Time	None	Comparable; Formed using – • ED discharge date • ED discharge time	None
Disposition after ED	None	Comparable: • ED discharge disposition	None
Diagnosis Made >24 hours after Arrival?	None	None	None
Date & Time CT Performed	Partially comparable: • Time until First CT Scan (Exception: more specific; definitive care hospital only)	None	None
CT type	None	None	None

Operative Procedures in OR or ED	Partially comparable: • Type of First Key Emergency Intervention (Exception: more specific; first procedure only)	Comparable: • Hospital procedures	Comparable: • Operative procedures
Operation Date & Time	Partially comparable: • Time until First Key Emergency Intervention (Exception: more specific; valid for first procedure only; imputed value; must be inferred from other fields)	Comparable; Formed using – • Hospital procedure start date • Hospital procedure start time	None
Number of Days on Ventilator	Comparable: • Number of Days on Ventilator	Partially comparable: • Total Ventilator Days (Exception: specifically excludes OR-associated ventilation time)	Partially comparable: • Number of days ventilated (Exception: specifically excludes BIPAP and CPAP)
AIS Injury Codes	Comparable: • Abbreviated Injury Scale	Comparable: • AIS predot code • AIS severity	Comparable: • Severity Codes
Date & Time of Discharge	None	Comparable; Formed using – • Hospital discharge date • Hospital discharge time	Partially comparable: • Date of discharge (Exception: less specific; date only)
Discharge Destination from Acute Care	Comparable: • Discharge Destination	Comparable: • Hospital discharge disposition	Comparable: • Discharge disposition
Injury Severity Score	None Could be derived using – • Abbreviated Injury Scale	Comparable: • Injury Severity Score or • Locally calculated ISS	Comparable: • Injury Severity Score (ISS)
New Injury Severity Score	None Could be imputed using – • Abbreviated Injury Scale	None Could be derived using combination of – • AIS predot code • AIS severity	None Could be imputed using – • Severity Codes

Length of Stay	Partially comparable: • Length of Stay in Reporting Hospital (Exception: less specific; measured in whole days)	Partially comparable: • Total Length of Hospital Stay (Exception: less specific; stay < 1 day rounded up to 1 day)	Partially comparable: • Length of stay (LOS) (Exception: less specific; measured in whole bed days)
Length of ICU Stay	None	Partially comparable: • Total ICU length of Stay (Exception: less specific; stay < 1 day rounded up to 1 day)	None
Severe Complications?	None	Partially comparable: • Hospital complications (Exception: less specific; all complications listed)	Partially comparable: • Complications (Exception: less specific; multiple complications listed)

Change Log

Date	Author	Version	Change Reference
01/07/2010	Cameron Palmer	1.1	Original document
06/06/2011	Meng Tuck Mok	1.11	Addition Table of Contents; addition of Version and Change Reference table; Title changed to Australasian Trauma Minimum Dataset (ATMDS); registry name changed to Australian Trauma Registry (ATR).
07/07/2011	Meng Tuck Mok	1.11	Title changed to Bi-National Trauma Minimum Dataset (BNTMDS)
07/07/2011	Meng Tuck Mok	1.12	Revised - Inclusion & Exclusion criteria; definition for 'Sex';
08/07/2011	Cameron Palmer	1.12	Amendments to introductory sections.
12/07/2011	Meng Tuck Mok	1.12	Revised – Dominant Injury Type; First Pulse.
13/07/2011	Meng Tuck Mok	1.13	Revised format and layout for some Data Items.
14/07/2011	Meng Tuck Mok	1.13	Accepted track changes.
27/07/2011	Meng Tuck Mok	1.14	Revised format changes to data items 1.01 – 5.09, 7.08; revisions to data items 2.04, 3.03, 7.08; Title change to data items 3.08, 4.05, 4.06; additions to definition, justification, data domain and data format to Inclusion/exclusion criteria and data items 1.01 – 5.09, 7.08
06/10/2011	Meng Tuck Mok	1.15	Added glossary table; revised format, added Appendix; Renamed 'definitive care' to 'primary care';
28/10/2011	Sarah Lensen	1.16	Renames "primary care" to "definitive care"
07/11/0211	Meng Tuck Mok	1.16	Edits to 'Dominant Injury Type'; Added Glossary of Terms; Changed glossary table to Abbreviations;
14/11/2011	Meng Tuck Mok	1.17	Edits to data items 5.19-7.08;
15/11/2011	Meng Tuck Mok	1.17	Addition of Approval and Limitations; Addition of Future Work table in Appendix; Addition of 'Pelvis' to data item 6.03;
17/11/2011	Meng Tuck Mok	1.17	Updated NCTRC Executive and Steering Committee and Working Party membership; AusTQIP Steering Committee endorsement of data dictionary
20/12/2011	Meng Tuck Mok	1.17	Updated 'Justification' sections.
14/02/2012	Meng Tuck Mok	1.20	Changed '7.03 Discharge Destination from Acute Care' obligation from Optional to Mandatory.
23/11/2012	Meng Tuck Mok	1.30	Changed 'Inclusion and exclusion criteria'.

Date	Author	Version	Change Reference
22/07/2013	Meng Tuck Mok	1.31	Changed '3.02 Injury Cause' external cause codes range to Y89; Changed '4.02 Time of Ambulance Arrival at Patient' to include Date and Time; removed validation ED Discharge Date & Time for '5.13 Date & Time Patient Intubated'; changed field size, format and data domains for '5.15 Blood Alcohol Concentration'; Revised '6.04 Operative Procedures in OR' abbreviations to reference Australian Classification of Health Interventions (ACHI) 7th edition; revised Data Domain for '7.06 Length of stay'; changed Guide For Use and Data Domain for '7.07 Length of ICU stay' ;

Future Work

The following list indicates data items that the AusTQIP TDWG has flagged requiring continuing attention and work.

Data Item	Version	Identified Issue Categories
3.02	1.17	Data domain
3.09	1.17	Data domain
4.08-4.18	1.17	Justification, data domains
5.18	1.17	Guide for use
5.19	1.17	Guide for use
6.03	1.17	Data domain
6.04	1.17	Guide for use, data domain