INSTRUCTIONS FOR CODERS
AND
DATA DICTIONARY

Regional Trauma Registry South Western Sydney Area Health Service

Developed by Trauma Department
Liverpool Hospital

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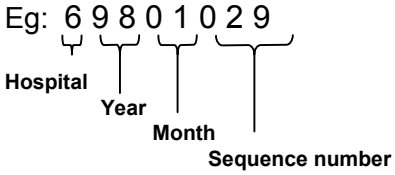
INSTRUCTIONS FOR CODERS
AND
DATA DICTIONARY
DEMOGRAPHICS

UNIQUE ID: This eight digit number will uniquely identify each patient episode. It is possible that a patient may be admitted more than once into the registry if he/she is injured on more than one occasion. The unique identification number utilizes the hospital, year and month of admission. The first number in the string will represent the hospital and is coded as follows:

- 1 - D227 - Bankstown 1
- 2 - N219 - Bowral 2
- 3 - D205 - Camden 3
- 4 - D215 - Campbelltown 4
- 5 - D206 - Fairfield 5
- 6 - D209 - Liverpool 6

The second and third numbers will be the year of admission (e.g. 1998 will be 98.)
The fourth and fifth numbers will be the month of admission (e.g. January will be 01.)
The final three numbers represent the sequential entry onto the database for the month.



HOSPITAL: One digit number to identify each hospital as listed above

MRN/Hospital Unit No: This will be the patient's hospital medical record number

> After entering MRN it is possible to query the HOSPAS system to confirm demographic details in hospital Patient Master Index

SURNAME:

GIVEN NAME:

SEX:

DATE OF BIRTH:

ADDRESS:

POSTCODE: Where the patient lives.

INJURY DETAILS

DATE: Date of injury (NB not necessarily date of arrival to hospital.)

POSTCODE: Where injury occurred (leave blank if unknown)

MECHANISM: Mechanism of injury
 1 - MVA Driver
 2 - MVA front passenger
 3 - MVA back passenger
 4 - MBA Rider
 5 - MBA Pillion
 6 - Pedestrian
 7 - Pedal cyclist
 8 - Personal assault
 9 - Stabbing
10 - Gunshot
11 - Industrial
12 - Fall <5 metres (between 0 to 5 metres ie 0 to 499cm)
13 - Fall ≥5 metres (ie 500cm and above)
14 - Recreation
15 - Burns
16 - Other
17 - Not applicable
18 - Not documented
19 - Fall 1 metre to 5m (more than 1 metre but less than 5 metres ie 100cm to 499cm)

PLACE: Place of injury
 1 - Street or Highway
 2 - Home
 3 - Residential Institution
 4 - Industrial premises
 5 - Facility including railway stations
 6 - Hotel or club
 7 - Recreation or unorganized sport
 8 - Organized sport
 9 - School/Preschool
10 - Farm
11 - Other
12 – Not Documented
13 - Not applicable

TRAUMA TYPE: Type of trauma
 1 - Blunt
 2 - Penetrating *(must be the dominant injury)*
 3 - Unknown

It may occur that a blunt mechanism of injury causes a penetrating injury. For example the driver of a car may sustain a penetrating injury when crashing into a picket fence if part of the picket fence penetrated the driver's body.

RESTRAINT: This refers to use of restraints by occupants in motor vehicle accidents.
 1 - None
 2 - Seatbelt Lap/sash (most seat belts are this type)
 3 - Seatbelt Lap only (lap only belts are generally in centre of bench seats)
 4 - Child restraint
 5 - Not documented
 6 - Not applicable

SAFETY EQUIPMENT
 1 - None
 2 - Helmet
 3 - Airbag
 4 - Other
 5 - Not documented
 6 - Unknown
 7 - Not applicable

INTENT
 0 - Accidental
 1 - Self harm intended
 2 - Assault by another with intent to harm
 3 - Assault by partner
 4 - Child neglect/abuse
 5 - Undetermined Intent
 6 - Legal intervention

SUBSTANCE (Drugs or Alcohol)
 1 - Drug or alcohol use *documented*
 2 - NIL *documented*
 3 - Undetermined
 4 - Drugs only *documented*
 5 - Alcohol only *documented*

Text field for description of drug/alcohol. The use of drugs or alcohol may not be found documented in laboratory results. Hospital notes may be used to determine drug and/or alcohol use. Entries such as “patient smells strongly of alcohol”, “patient admits to drinking large quantity of alcohol”, or “patient states he/she is on methadone” may assist the decision to code. In cases where there is no documentation to drug or alcohol use, code “undetermined”.

PRE-HOSPITAL INFORMATION

PRE-HOSPITAL: Brought in by ambulance

□ 1 – Yes Enter information below □ 2 - NoGo to section "Referring Hospital Information"

Information is obtained from Ambulance cases slip for patients brought into hospital by ambulance.

****NOTE** This information is to be obtained from the initial transport of the patient to hospital. If the patient was taken to a hospital by ambulance following traumatic injury, then discharged, and consequently represents to either the same or a different hospital later for the same injury, the data used are those from the **original** presentation. Eg: patient taken to Bankstown Hospital by ambulance following MVA then discharged from ED after assessment. Patient later represents to Bankstown Hospital with abdominal pain (either by ambulance or private transport) and is admitted this time with abdominal injury following MVA. The data recorded are taken from the original ambulance transport to hospital. If this patient did not represent to Bankstown, but rather had gone to another SWS hospital and was admitted, the data recorded for prehospital would still be taken from the original presentation to Bankstown Hospital. If this patient represented to Bankstown, then was transferred via ambulance to another hospital for whatever reason, the data recorded would be taken from the original presentation to Bankstown Hospital, not from the subsequent ambulance transfer sheet.

ENTRAPMENT: Includes entrapment by compression or confinement.
□ 1 - Yes (record length of time in minutes)
□ 2 - No
□ 3 - Not applicable (eg, patient fell)

TIMES (24 hr clock): **REQUEST TIME**: time ambulance control contacted
DISPATCH TIME: time ambulance dispatched
ARRIVAL TIME: time ambulance arrived at the scene
SCENE DEPART: time ambulance departs scene en route to hospital
ARRIVAL IN HOSPITAL: time patient arrives at hospital

AMBULANCE LEVEL: Level of training and experience of the attending ambulance officer.
□ 1 - Probationer 1st year
□ 2 - Basic (Year 1-3)
□ 3 - Basic Life Support
□ 4 - Advanced Life Support
□ 5 - Paramedics
□ 6 - Retrieval Team by air
□ 7 - Retrieval Team by road
□ 8 - No form
□ 9 - Not documented

TRANSPORT DECISION: This refers to the ambulance criteria (as defined by the Department of Health) by which the ambulance officers have made the transport decision.
□ 1 - Minor (Nearest hospital is an Urban Trauma Service)
□ 2 - Minor (Nearest hospital is a Major Trauma Service)
□ 3 - Minor (Bypass MT service to Urban Trauma Service)
□ 4 - Serious (Bypass to Major Trauma Service)
□ 5 - Serious (Major Trauma Service is nearest)
□ 6 - Serious (Major Trauma Service restricted service)
□ 7 - Dying (To nearest hospita)
□ 8 - Rural (Early Notification of Trauma (RP4))
□ 9 - No form / not documented

PULSE___ RESPIRATORY RATE ___ BLOOD PRESSURE ___/__
Record the initial values, from the ambulance sheet, if none are available leave blank.
If the patient is intubated before RR is recorded leave blank

GLASGOW COMA SCALE
NB: ambulance sheets code verbal and motor in different order.

EYE:
- 4 - spontaneous
- 3 - to voice
- 2 - to pain
- 1 - nil

VERBAL:
- 5 -oriented
- 4 -confused
- 3 -inappropriate words
- 2 -incomprehensible
- 1- nil

MOTOR:
- 6 - obeys commands
- 5 - localizes pain
- 4 - normal flexion (withdrawal)
- 3 - abnormal flexion (decorticate)
- 2 - extension (decerebrate)
- 1 - nil (flaccid)

CPR: Cardio-pulmonary resuscitation instituted
- 1 -Yes
- 2 - No
- 3 - Not applicable

AIR: Airway Intervention
- 1 - Oxygen
- 2 - Guedel or Nasopharyngeal airway
- 3 - Bag and Mask
- 4 - Endotracheal tube (time)
- 5 - Nasotracheal Tube (time)
- 6 - Needle Cricothyroidotomy (time)
- 7 - Surgical Cricothyroidotomy (time)
- 8 - Tracheostomy (time)
- 9 - No airway intervention
- 10 - Not documented

Record the time the procedure commences ie time first paralysing drug administered if given, if no paralysing or sedating agents administered, record time intubation etc occurred as documented. If no time documented leave blank.

MAST SUIT:
- 1 - Not Used
- 2 - Used but not inflated (< 500ml) ie as in the splinting of a single limb
- 3 - Inflated (all compartments)

FLUID TYPE:
- 1 - crystalloid
- 2 - colloid
- 3 - blood
- 4 - crystalloid and blood
- 5 - colloid and blood
- 6 - crystalloid and colloid
- 7 - crystalloid/ colloid/blood
- 8 - none
- 9 - not documented

VOLUME
Volume administered by the Paramedics for resuscitation prior to arrival at the ED. 5 – 20 ml saline used to flush a cannula or flush medicine is documented as “8” – none.

DRUGS : Any drugs administered pre-hospital by ambulance officers.
□ 1 - Not applicable
□ 2 - Nil given
□ 3 - Morphine
□ 4 - Entonox
□ 5 - Maxolon
□ 6 - Other
□ 7 - Morphine / entonox
□ 8 - Methoxyflurane

ICC : Pre-hospital insertion of an intercostal catheter or chest drain.
□ 1 -Yes
□ 2 - No
□ 3 - Bilateral
□ 4 - Not documented

REFERRING HOSPITAL INFORMATION

TRANSFER
□ 1 - Yes (enter information below)
□ 2 - No (go to section "Medical Retrieval Team"

NAME OF HOSPITAL: Referring hospital name
□ 1 - D227 - Bankstown 1
□ 2 - N219 - Bowral 2
□ 3 - D205 - Camden 3
□ 4 - D215 - Campbelltown 4
□ 5 - D206 - Fairfield 5
□ 6 - D209 - Liverpool 6
□ 7 - OTH - Other (use text field to specify name of referring hospital)

Arrival date: date of patient arrival at referral hospital
Time: time of patient arrival at referral hospital
Transfer date: date of patient transfer from referral hospital
Time: time of patient transfer from referral hospital

TEMP____PULSE_____ RESP___BLOOD PRESSURE ____/___
Refers to initial observations documented at referring hospital.
If the patient is intubated before RR is recorded leave blank.

GLASGOW COMA SCALE

EYE:
□ 4 - spontaneous
□ 3 - to voice
□ 2 - to pain
□ 1 - nil

VERBAL:
□ 5 -oriented
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□ 2 - extension (decerebrate)
□ 1 - nil (flaccid)

CPR: Cardio-pulmonary resuscitation instituted
□ 1 Yes
□ 2 No
□ 3 Not recorded

AIR: Airway Intervention
 1 - Oxygen
 2 - Guedel or Nasopharyngeal airway
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 6 - Needle Cricothyroidotomy (time)
 7 - Surgical Cricothyroidotomy (time)
 8 - Tracheostomy (time)
 9 - No airway intervention
 10 - Not documented
Record the time the procedure commences ie time first paralysing drug administered if given, if no paralysing or sedating agents administered, record time intubation etc occurred as documented. If no time documented leave blank.

MAST SUIT:
 1 - Not Used
 2 - Used but not inflated (< 500ml) ie as in the splinting of a single limb
 3 - Inflated (all compartments)

FLUID TYPE:
 1 - crystalloid
 2 - colloid
 3 - blood
 4 - crystalloid and blood
 5 - colloid and blood
 6 - crystalloid and colloid
 7 - crystalloid/ colloid/blood
 8 - none
 9 - not documented

VOLUME
Volume administered in the referring ED. Refers to resuscitative fluids only, do not include maintenance fluid (ie fluid administered over greater than 4 hours).

ICC: Use of an intercostal catheter or chest drain in referring hospital
 1- Yes (single ICC inserted)
 2 - No (no ICC required, no ICC inserted)
 3 - Bilateral (bilateral ICC's inserted)

MEDICAL RETRIEVAL TEAM

The Medical Retrieval Team consists of a doctor and a SCAT paramedic. Air retrieval teams also include a pilot. They are dispatched by the Medical Retrieval Unit, and use teams from either NRMA Careflight or Westpac Lifesaver Rescue Helicopter services. May either attend a scene of an accident then transfer the patient to hospital, or transfer seriously injured patients from one hospital to another.
 1 - Yes (patient transported to hospital by MRT) 2 - No MRT not used (Go to next section)
 3 - Out (patient transferred out to another facility by MRT)

NB – Times required if options 1 or 3 are used

REQUEST TIME: Time Medical Retrieval Unit contacted
DESPATCH: Time Medical Retrieval Team dispatched
AT SCENE: Time Team arrive at the scene / referral hospital
DEPART: Time Team depart scene / referral hospital:
AT HOSPITAL: Time Team arrive at destination

If times not available ring N.R.M.A Careflight 9891 6144 or Westpac Lifesaver Rescue Helicopter Service 9311 3499.

EMERGENCY DEPARTMENT

TRANSPORT: How the patient arrived at this hospital.
□ 1 - Private transport
□ 2 - General duties ambulance (levels 1 – 4)
□ 3 - Paramedic ambulance (level 5)
□ 4 - Helicopter or fixed wing retrieval (Medical Retrieval Team by air)
□ 5 - Other (eg police transport)
□ 6 - Unrecorded (not documented)
□ 7 - Road Retrieval (Medical Retrieval Team by road)

Date ~~/~~/~~ **Time** ~~:~~ of presentation to the Emergency Department (nursing documentation).

TRAUMA TEAM ACTIVATION: Was the trauma team activated?
□ 1 - Yes (trauma team activation criteria were met, and trauma team was activated)
□ 2 - No (trauma team activation criteria were met, but the trauma team was not called)
□ 3 - Not applicable (no criteria for activation of trauma team – use this code also for all hospitals in SWS other than Liverpool.)
NB – options 1 and 2 relate to Liverpool Hospital only.

CRITERIA: (for activation of trauma team response)
If trauma team was activated, specify for what criterion. In the event of multiple criteria being met, select the most life threatening. Criteria may be based on history, vital signs or injuries.

HISTORY:
□ 1 - MVA ejected from vehicle
□ 2 - Pedal cyclist, motor cyclist or pedestrian hit by car or truck
□ 3 - Fall> 5 metres
□ 4 - Fall from horse
□ 5 - Interhospital transfer

VITAL SIGNS:
□ 6 - Airway obstruction
□ 7 - Shallow or retractive breathing
□ 8 - Cyanosis
□ 9 - Skin pallor or slow capillary refill > 2 sec
□ 10 - Systolic blood pressure < 90 mmHg
□ 11 - Pulse >130 <50/minute
□ 12 - Depressed level of conscious or fitting
□ 13 - Pupils dilated or unreactive
□ 14 - Trauma score 12 or less
□ 15 - Deterioration n the Emergency Department

INJURIES:
□ 16 - Injury to two or more body regions
□ 17 - Fracture to 2 or more long bones
□ 18 - Spinal cord Injury
□ 19 - Crush injury or amputation of a limb
□ 20 - Penetrating injury to head, neck chest abdomen, pelvis groin or back
□ 21 - Burns to airway or smoke inhalation (>15% in adults, 10%children)
□ 22 - Blood loss >500ml
□ 23 - MVA with deceased
□ 24 - Not documented

TEMP____PULSE_____ RESP___BLOOD PRESSURE ____/___
Refers to initial observations documented at referring hospital.
If the patient is intubated before RR is recorded leave blank.

GLASGOW COMA SCALE

EYE:
- □ 4 - spontaneous
- □ 3 - to voice
- □ 2 - to pain
- □ 1 - nil

VERBAL:
- □ 5 -oriented
- □ 4 -confused
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- □ 1 - nil (flaccid)

CPR: Cardio-pulmonary resuscitation instituted
- □ 1 - Yes
- □ 2 - No
- □ 3 - Not applicable

AIR: Airway Intervention
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- □ 7 - Surgical Cricothyroidotomy (time)
- □ 8 - Tracheostomy (time)
- □ 9 - No airway intervention
- □ 10 - Not documented

Record the time the procedure commences ie time first paralysing drug administered if given, if no paralysing or sedating agents administered, record time intubation etc occurred as documented. If no time documented leave blank.

MAST SUIT:
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FLUID TYPE:
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- □ 3 - blood
- □ 4 - crystalloid and blood
- □ 5 - colloid and blood
- □ 6 - crystalloid and colloid
- □ 7 - crystalloid/ colloid/blood
- □ 8 - none
- □ 9 - not documented

VOLUME

Volume administered in the referring ED. Refers to resuscitative fluids only, do not include maintenance fluid (ie fluid administered over greater than 4 hours.) Only include fluids given in the first 4 hours, unless the patient's condition deteriorated in ED and resuscitation has to be recommenced.

ICC: Use of an intercostal catheter or chest drain in referring hospital
- □ 1- Yes (single ICC inserted)
- □ 2 - No (no ICC required, no ICC inserted)
- □ 3 - Bilateral (bilateral ICC's inserted)

DIAGNOSTIC INTERVENTIONS

HEAD CT

□ 1 - not done
□ 2 - extra-dural
□ 3 - subdural
□ 4 - cerebral oedema
□ 5 - sub-arachnoid blood
□ 6 - normal
□ 7 - not recorded
□ 8 - intra cerebral bleed
□ 9 - other
□ 10 -Cerebral contusion

More than one abnormality may be present, eg the patient may have an extra-dural haematoma, a sub-dural haematoma and cerebral oedema. In this case code the abnormality which is most severe or most urgently requires intervention. It will not be acceptable to utilize code 7 if CT report is not available; doctor's notes will suffice.

Time in ~~:~~ Use scribe's notes (otherwise time printed on the first CT Image)
Time Out ~~:~~ Use scribe's notes (or add five minutes to time on the last CT image)

DPL: Diagnostic Peritoneal Lavage

□ 1 - not done
□ 2 – positive
□ 3 - negative
□ 4 - delayed positive (DPL performed after patient left ED eg in theatre or ICU, result was positive)
□ 5 - delayed negative (DPL performed after patient left ED eg in theatre or ICU, result was negative)

Procedure involving introduction of one litre of warmed normal saline into the peritoneal cavity via a silicon catheter and syphoning the fluid. Laboratory analysis of levels of amylase, alkaline phosphatase, and the number of red and white blood cells in the sample of fluid provides valuable clues to the presence of blood or hollow visceral organ injury. Laboratory results are definitive for positive or negative result **not** the medical officer's interpretation of macroscopic inspection.

Element	Positive result	Negative result
Alkaline phosphatase	> 3 u/L	< 3u/L
Amylase	>20 u/L	< 20 u/L
Red blood cells	> 10^{12}/L	< 10^{12}/L
White blood cells	> 10^{9}/L	< 10^{9}/L

ABDOMINAL CT

□ 1 - not done
□ 2 - positive
□ 3 - negative
□ 4 - not documented

Abdominal CT is performed to determine the presence of intra-abdominal organ injury. A positive finding is where an injury to an organ or the presence of free fluid in the abdomen can be detected on the CT scan. Free fluid in the abdomen following a DPL will not be regarded as a positive finding.

CONTRAST (contrast relating only to abdominal CT)

□ 1 - None given
□ 2 - Orally
□ 3 - IV
□ 4 - Rectally
□ 5 - Orally and IV
□ 6 - Orally and Rectal
□ 7 - IV and Rectal
□ 8 - Not documented

AORTOGRAM: (angiogram)
 1 - not done
 2 - positive
 3 - negative
 4 - not-recorded
Aortogram is used to determine the presence of abnormality (leak or rupture) of the aorta in a patient where there is suspicion of injury. A positive result is one where an abnormality **requiring intervention** is detected and documented.

ULTRASOUND: only applies at Liverpool Hospital.
Refers to Focussed Abdominal Sonography in Trauma (FAST)
 1 - No FAST
 2 - FAST done
 3 - FAST and CT chest
 4 - CT chest

DISPOSAL: (from Emergency)
 1 - DOA (Dead On Arrival)
 2 - Died in ED
 3 - OR/ward (theatre then ward)
 4 - OR/ITU (theatre then ITU)
 5 - OR/HDU (theatre then HDU)
 6 - Trauma ward (this option only applies to Liverpool Hospital)
 7 - Ward
 8 - Transfer (use text field to specify hospital or facility patient transferred to)
 9 - Other (use text field to specify hospital / facility patient transferred to)
 10 - OR/transfer (use text field to specify hospital / facility patient transferred to)
 11 - Died in OR
 12 - ITU
 13 - HDU

FOLLOW UP HEAD CT:
 1 - not done
 2 - extra-dural
 3 - subdural
 4 - cerebral oedema
 5 - sub-arachnoid blood
 6 - normal
 7 - not recorded
 8 - intra cerebral bleed
 9 - other
 10 - Cerebral contusion

Date: Date CT scan performed after disposal from ED. This is to capture CT scans performed after the resuscitative phase of care. Where several CTs are performed, write the date of the first one after disposal from ED.

FOLLOW UP ABDOMINAL CT
 1 - not done
 2 - positive
 3 - negative
Date: Date CT scan performed after disposal from ED. This is to capture CT scans performed after the resuscitative phase of care. Where several CTs are performed, write the date of the first one after disposal from ED.

FOLLOW UP AORTOGRAM: (or angiogram)
 1 - not done
 2 - positive
 3 - negative
Date: Date CT scan performed after disposal from ED. This is to capture CT scans performed after the resuscitative phase of care. Where several CTs are performed, write the date of the first one after disposal from ED.

PERFORMANCE INDICATORS

PRE-HOSPITAL MANAGEMENT PHASE:

BYPASS CORRECT:
 1 - Yes (appropriately bypassed any urban hospital and taken to Major Trauma Service)
 2 - No (patient should have bypassed urban hospital but did not)
 3 - Not available (location of injury not available)
 4 - Not applicable (did not require bypass, or bypass not applicable eg Rural Trauma Service)
 5 - Other
This refers to the Pre-hospital Trauma Triage system. This indicator is used to monitor whether patients were delivered to the appropriate trauma service according to ambulance pre-hospital triage decision (protocol 4).

GCS < 9 ETT: Pre-hospital intubation of patients with GCS less than 9
 1 -Yes (patient had GCS 8 or less was intubated pre-hospital)
 2 - No (patient had GCS 8 or less was NOT intubated pre-hospital)
 3 - Not available (GCS not documented, or no details of intubation recorded)
 4 - Not applicable (patient's GCS was greater than 8 ie 9 and above)
 5 - Other
Intubation may not be possible because of the level of training of the ambulance officers, or the presence of trismus. This indicator refers to intubation of the patient with Glasgow Coma Scale of 8 or less. Intubation must be performed within 10 minutes of the documentation of GCS<8. If the intubation occurs later than 10 minutes the performance indicator has not been met, and a "2" is coded. If the patient had a GCS of 8 or less **and** was intubated but no time of intubation was recorded, code "1" (yes.)

KEPT IN SWSAHS
 1 - Yes (patient was kept at a SWS hospital)
 2 - No (transferred to another Area Health Service from any hospital in SWS)
 3 - From SWS (patient transferred into Liverpool Hospital from within SWS)
 4 - From other AHS (transferred into Liverpool Hospital from another Area Health Service)

SCENE TIMES ≤ 20 MINUTES:
 1 - Yes (ambulance at scene 1 to 20 minutes)
 2 - No (ambulance at scene 21 minutes or more)
 3 - Not available (scene time not documented on ambulance sheet)
 4 - Not applicable (patient not transported by ambulance)
 5 - Other
If times are not documented, efforts should be made to obtain specific times – ring the station officer, speak to the ambulance officers who transferred the patient, or ring Medical Records at Rozelle (NSW State Ambulance Headquarters) for the completed sheet. If using the last option, there may be a delay of approximately 8 months if data are not collected from Rozelle within one month of event. This is the time period taken to transfer the data from hardcopy to microfilm.

RESUSCITATIVE MANAGEMENT PHASE

RETRIEVAL TEAM (MRT) ≤ 30 mins
 1 - Yes (MRT turnaround time ≤30 minutes)
 2 - No (MRT turnaround time 31 minutes or more)
 3 - Not available (MRT times not documented or sheet not available)
 4 - Not applicable (MRT not used)
 5 – Other

<3 HOURS AT REFERRING HOSPITAL
Refers to patients transferred from one hospital to another, relating to length of time at referring hospital. If the data are being collected from the referring hospital, then code:
 1 -Yes (patient at referring hospital ≤ 3 hours ie 180mins)
 2 - No (patient at referring hospital > 3 hours ie 181 minutes or more)
 3 - Not available (time spent at referring hospital not known)
 4 - Not applicable (patient not transferred from another hospital)
 5 - Other
This refers to patients transferred into the facility in which data are being collected. Eg – a patient transferred from Camden Hospital to Campbelltown Hospital. When collecting data at Camden Hospital, this indicator will not be applicable – code "4". When collecting data at Campbelltown, the code will be either "1", "2" or "3".

EXCEED 2000mls WITHOUT BLOOD:
 1- Yes (> 2000mls given before blood commenced; OR >2000mls fluids without blood)
 2 - No (blood given before 2000 ml exceeded)
 3 - Not available
 4 - Not applicable (2000mls fluid not exceeded AND no blood given)
 5 - Other
This indicator measures the number of patients who are administered intravenous fluids in excess of 2000mls and/or who receive blood. It refers ONLY to the administration of colloid or crystalloid without blood transfusion during the resuscitation period in ED (maintenance fluid, i.e. 1 litre > 4 hours is not considered.) Pre-hospital fluids are excluded. For children ">40ml/kg without blood" is the formula to use.

EXPLORE PENETRATING TRAUMA:
 1 - Yes (explored within 1 hour)
 2 - No (explored later than 1 hour)
 3 - Not available
 4 - Not applicable (no penetrating injury, or exploration inappropriate i.e. chest)
Refers to the formal exploration of a penetrating injury in the Operating Theatre or in ED. This requires a sterile procedure under local anaesthetic whereby the wound is formally explored. The procedure must be performed within one hour of arrival to ED. This applies where the initial injury is predominantly penetrating trauma.

PATIENT in CT >1 HOUR:
 1 – Yes (in CT scanning department more than 1 hour)
 2 - No (in scanner ≤ 1 hour)
 3 - Not available (not times for CT available, and times not able to be obtained from CT films)
 4 - Not applicable (did not have a scan)
 5 - Other
This performance indicator flags those patients who are in the CT scanner for more than 1 hour, be it for head, abdominal, cervical or thoracic CT, (this is the time from commencement of the CT scan to the time of completion as printed on the actual CT film.)

GCS <13 NO CT SCAN:
 1 - Yes (GCS <13 but no head CT performed within 4 hours ie before 241 minutes)
 2 - No (GCS <13 and had head CT performed within 4 hours ie within 240 minutes)
 3 - Not available (GCS not available)
 4 - Not applicable (GCS 13 or more)
 5 - Other
It refers to patients with decreased level of consciousness upon arrival in ED, or patients whose level of consciousness decreases below 13 whilst in ED, and indicates those patients who undergo head CT scanning within four hours.

GCS <9 INTUBATION (Emergency Department only):
 1 - Yes (GCS 8 or less and patient intubated within 10 minutes of recorded GCS)
 2 - No (GCS 8 or less and failure to intubate patient within 10 minutes of recorded GCS)
 3 - Not available (details of GCS not recorded)
 4 - Not applicable (GCS 9 or more therefore intubation not required)
 5 - Other (patient intubated prior to arrival in ED)
This indicator refers to intubation in the ED of the patient with Glasgow Coma Scale ≤ 8. This intubation must be performed within 10 minutes of the documentation of GCS ≤ 8.

DEFINITIVE MANAGEMENT PHASE:

REPRESENT TO ED <72 HOURS
□ 1 - Yes (represented within 72 hours for same injury and was admitted)
□ 2 - No (did not represent within 72 hours for same injury)
□ 3 - Not available
□ 4 - Not applicable
□ 5 - Other
Patient discharged following assessment and treatment, who re-presents to ED within 72 hours of discharge for the same injury and is consequently admitted. (This does not include planned dressings or other reviews in which the patient is not consequently admitted.) If the patient presents at one hospital ED and is discharged, then represents for the same injury within 72 hours and is consequently admitted, then code "1" (yes).

THROMBO-EMBOLIC PROPHYLAXIS:
□ 1 - Yes (any one of three regimes commenced within 24 hours for immobilised patient)
□ 2 - No (no TEP prophylaxis commenced within 24 hours for immobilized patient)
□ 3 - Not available
□ 4 - Not applicable (patient aged 16 years and under; OR patient not immobilised)
□ 5 - Other
Appropriate embolic prophylaxis is indicated for a patient who is going to be immobilized in bed for more than 24 hours. Use of any one of these three regimes: anti-embolic stockings, subcutaneous/ intravenous heparin or sequential calf compression device will get a yes response if commenced within 24 hours of presentation or immobilization. It also includes patients who become immobilised at any time during their admission eg – if patients are ambulant immediately following a trauma admission, but are then immobilised post-op or for any reason, then anti-thromboembolic therapy would be appropriate. Exclude children aged 16 and under from this group.

MISSED FRACTURES:
□ 1 - Yes (fracture diagnosed after 24 hours following admission to hospital)
□ 2 - No (all fractures diagnosed within 24 hours from admission to hospital)
□ 3 - Not available
□ 4 - Not applicable (patient had no fractures)
□ 5 - Other
If a patient has a fracture that is not diagnosed during the first 24 hours but is a later finding, then this constitutes a missed fracture and is coded a "1" (yes.)

HYPOTHERMIA:
□ 1 - Yes (temperature ≤35^{o} C at any time during admission)
□ 2 - No (temperature >35^{o} C at all times during admission ie at least 35.1 ^{o} C)
□ 3 - Not available (temperature not recorded)
□ 4 - Not applicable
□ 5 - Other
Used to flag any patient whose temperature is less than or equal 35^{o} C at any time during admission. Admission includes any referring hospital. Ensure theatre and recovery charts are reviewed.

FRACTURE FIXATION WITHIN 24 HOURS:
□ 1 - Yes (long bone fractures fixed or reduced within 24 hours of arrival in ED)
□ 2 - No (long bone fractures fixed or reduced later than 24 hours of arrival in ED)
□ 3 - Not available
□ 4 - Not applicable (no long bone fractures)
□ 5 - Other
Refers only to long bone fractures (i.e. femoral shaft, tibial shaft, fibular shaft, radius, ulna and humerus). In patients with multiple long bone fractures if one is fixed but another remains unfixed then the indicator is not met. A planned delay in fixation or reduction (eg due to swelling etc), will be coded a "2" (no).

COMPOUND FRACTURES < 6 HOURS:
□ 1 - Yes (fixation of compound fracture within six hours of injury)
□ 2 - No (failure to fixate compound fracture within six hours of injury)
□ 3 - Not available
□ 4 - Not applicable (no compound fracture)

NON-THERAPEUTIC LAPAROTOMY:
□ 1 - Yes (patient had non-therapeutic laparotomy)
□ 2 - No (laparotomy was performed which **was** therapeutic)
□ 3 - Not available
□ 4 - Not applicable (no laparotomy performed)
□ 5 - Other
Non-therapeutic laparotomy is one where no surgical intervention takes place at time of surgery. This indicator flags those patients undergoing a laparotomy that is deemed to be "non-therapeutic". It may be possible that a laparotomy reveals positive findings yet no surgical intervention is required, e.g. a liver laceration that has stopped bleeding requiring no therapy is a non-therapeutic laparotomy.

INJURY TO CRANIOTOMY TIME
□ 1 - Within 2 hours (craniotomy performed within 2 hours of injury ie within 120minutes)
□ 2 - Within 4 hours (craniotomy performed between 2 and 4 hours of injury)
□ 3 - More than 4 hours (craniotomy performed more than 4 hours after injury)
□ 4 - Not applicable (no craniotomy performed)
□ 5 - Not documented (no documentation of pre-hospital time)
□ 6 - Other (non-acute or chronic; OR late developing EDH/SDH)
Amount of time from injury to commencement of craniotomy for drainage of an acute operable space-occupying lesion e.g. extradural or subdural. Does not include ICP monitor insertion or elevation of depressed skull fracture.

ARRIVAL MTS TO CRANIOTOMY TIME (refers to Liverpool Hospital only)
□ 1 - Within 1 hour (craniotomy performed within 1 hours of arrival in ED)
□ 2 - Within 4 hours (craniotomy performed between 1 hour and 4 hours of arrival in ED)
□ 3 - More than 4 hours (craniotomy performed more than 4 hours after arrival in ED)
□ 4 - Not applicable (no craniotomy performed – use this code for all other SWS hospitals)
□ 5 - Other (non-acute or chronic; OR late developing EDH/SDH)
Refers only to Liverpool Hospital in a patient with subdural or extradural haematoma. Amount of time from arrival in ED at Liverpool Hospital to commencement of craniotomy for drainage of either EDH or SDH. Do not include ICP monitor insertion or elevation of depressed skull fracture – these would be coded "4" (not applicable.)

TRANSFER FROM MTS: (Liverpool Hospital is Major Trauma Service)
□ 1 - Yes (transferred out of Liverpool Hospital – Liverpool Hospital code only)
□ 2 - No (kept at Liverpool Hospital – Liverpool Hospital code only)
□ 3 - Not available (do not used this code)
□ 4 - Not applicable (use this code for all hospitals in SWS except Liverpool Hospital)
□ 5 - Other

JOINT DISLOCATION > I HOUR:
□ 1 - Yes (successful reduction within 1 hour of arrival in ED ie within 60 minutes)
□ 2 - No (failure to reduce joint dislocation within 1 hour ED)
□ 3 - Not available (joint dislocation reduced, but time not documented)
□ 4 - Not applicable (patient did not have dislocated any joint dislocations)
□ 5 - Other
Joint dislocations need prompt reduction in order to minimize the risk of avascular necrosis. For dislocated shoulder, pelvis, elbow, knee or ankle this indicator shows which patients had.

LAPAROTOMY BP < 90 IN< 45 MINUTES OF ADMISSION
□ 1 - Less than 45 mins (laparotomy performed within 45 minutes of arrival in ED)
□ 2 - More than 45 mins (laparotomy performed at 46 minutes or later)
□ 3 - Not available
□ 4 - Not applicable (patient did not have **proven** intra-abdominal pathology; OR laparotomy not required)
Where a patient has proven intra-abdominal pathology with an associated hypotension (SBP <90), who undergoes laparotomy within 45 minutes of arrival in ED.

INJURY TO LAPAROTOMY TIME
□ 1 - Within 2 hrs (laparotomy performed within 2 hours of injury)
□ 2 - Within 4 hrs (laparotomy performed within 4 hours of injury)
□ 3 - More than 4 hrs (laparotomy performed more than 4 hours after injury)
□ 4 - Not applicable (laparotomy not required OR not performed within 24 hours)

ISCHAEMIC LIMB < 4 HOURS
□ 1 - Yes (ischaemic limb revascularized within 4 hours of injury)
□ 2 - No (ischaemic limb revascularized later than 4 hours after injury)
□ 3 - Not available
□ 4 - Not applicable (no ischaemic limb)
□ 5 - Other

UNPLANNED OT
□ 1 - Yes (unplanned episode in OT)
□ 2 - No (all operations anticipated and planned)
□ 3 - Not available
□ 4 - Not applicable (patient did not require any surgery)
□ 5 – Other
Ideally all operations will be anticipated and planned following ED assessment of patients' injuries. Unplanned operations include return to operating theatre for post-operative haemorrhage, unexpected surgery for missed injuries, or unexpected deterioration of patient's condition.

UNPLANNED ICU
□ 1 - Yes (unplanned admission to ICU)
□ 2 - No (all occasions in ICU anticipated and planned)
□ 3 - Not available
□ 4 - Not applicable (patient did not require admission to ICU)
□ 5 - Other
This refers to all patients transferred to the ward whose condition deteriorated requiring admission to ICU. It includes patients who went to operating theatre and were intended to go to the ward from recovery but who deteriorated and went to ICU instead.

DOCUMENTATION OF TEMPERATURE IN OT
□ 1 - Yes (temperature documented for initial operation)
□ 2 - No (temperature not documented for initial operation)
□ 3 - Not available
□ 4 - Not applicable (patient had no operations)
□ 5 - Other
Documentation of patient's temperature should be recorded on the anaesthetic chart. When there are multiple operations, the first operation's anaesthetic chart is used to code this performance indicator.

Hb >85
□ 1 - Yes (Hb >85 at all times ie at least 86)
□ 2 - No (Hb ≤85 during admission ie 85 or less)
□ 3 - Not available
□ 4 - Not applicable (No Hb result in file; OR no pathology collected on patient)
□ 5 - Other
Patients whose haemoglobin is measured at 85 or less at any time during their admission are flagged.

ALL INJURIES DIAGNOSED
□ 1 - Yes (all injuries diagnosed within 24 hours
□ 2 - No (missed injury found after 24 hours and/or C- spine not cleared within 24 hours)
□ 3 - Not available
□ 4 - Not applicable (Patient transferred before tertiary survey)
□ 5 - Other
Ideally all injuries will be diagnosed during initial assessment in ED. Any injury that is not diagnosed during the first 24 hours constitutes a missed injury. Also if the suspicion of a cervical spine injury is not cleared within 24 hours manifesting in unnecessary prolonged use of hard cervical collar then this constitutes a failure to meet this indicator. Not applicable for patient who dies within 24 hours of admission or a patient transferred out.

COMPLICATIONS

□ 1 None □ 2 Occurred
Refer to Complications List and Definitions (Appendix 4). Where complications occurred select corresponding codes and enter.

INJURY OUTCOME

DAYS IN ITU __ Enter total number of days patient spent in ICU or HDU

DISCHARGE DATE ~~/~~/~~ If patient is transferred to Brain Injury Unit (for example) for rehabilitation then use the transfer date as discharge date.

OUTCOME □ 1Survived □ 2 Died

PLACE OF DEATH:
□ 1 Dead on arrival DOA
□ 2 Died in emergency
□ 3 Theatre
□ 4 ITU
□ 5 HDU
□ 6 Trauma Ward
□ 7 Ward
□ 8 Transferred to other hospital, died there
□ 9 Other

TIME OF DEATH ~~:~~

DEATH CLASSIFICATION:
□ 1 CNS (Head & cord injuries)
□ 2 Non CNS (exclude #NOFs)
□ 3 # NOF deaths
□ 4 Thoracic/abdominal bleeding (no operation within 6 hours)

DEATH AUDIT :
□ 1 Completed
□ 2 To be completed
□ 3 Not required

STATUS ON DISCHARGE: Patient's condition at the time of discharge from hospital
□ 1 - Full recovery
□ 2 - Home help
□ 3 - Rehabilitation
□ 4 - Home help and rehabilitation
□ 5 - Died
□ 6 - Other (patient transferred to another hospital - enter discharge date for other hospital)
□ 7 - Not documented
□ 8 - Discharged Self Against Medical Advice

OTHER HOSPITAL DISCHARGE DATE ~~/~~/~~ (refers for transfers to another hospital, or discharge date from rehabilitation unit)

EVENTUAL OUTCOME: (condition at time of discharge from other hospital/or rehabilitation unit)
□ 1 - Full recovery
□ 2 - Home help
□ 3 - Rehabilitation
□ 4 - Home help and rehabilitation
□ 5 - Died
□ 6 - Other
□ 7 - Not documented
□ 8 - Discharged Self Against Medical advice

OPERATIONS PERFORMED

Procedure ___ Code ___ Date ~~/~~/~~ Time ~~:~~ for each operation.

PROCEDURE:

□ 1 **Craniotomy**

Cavity is coded as craniotomy for operations to the brain such as evacuation of extra-dural or sub-dural haematoma, or other operations where the dura is opened by the surgeon. Does not include procedure for insertion of Intra Cranial Pressure monitor (this will be coded as procedure "5" (other.) Does not include elevation of depressed skull fracture (also coded as "5" (other.)

□ 2 **Thoracotomy**

Thoracotomy is coded for operations which involve entering the thoracic cavity and breaching the pleura.

□ 3 **Laparotomy**

Laparotomy is used for operations which involve surgical incision of the abdomen and entry into the peritoneal cavity. A laparotomy may be therapeutic or non-therapeutic. Diagnostic procedures such as Diagnostic Peritoneal Lavage and Laparoscopy do not constitute a laparotomy. These can be coded as "5" (other.) Superficial exploration of the abdominal wall will be coded as "5" (other.)

□ 4 **Extremities**

Operations to arms or legs will be coded as extremities cavity if there is an opening of the cavity, such as open reduction and fixation of fractures, or fasciotomy for Compartment Syndrome.

□ 5 **Other**

Used for all operations which do not enter cranial, thoracic, abdominal or limb cavities. Examples are closed reduction of fractures, elevation of depressed skull fractures (except if also draining space occupying lesion), insertion of ICP monitor, suturing lacerations, superficial exploration of stab wounds to chest or abdomen, repair facial fractures, insertion of tracheostomy, ICC etc. Include laparoscopy, Diagnostic Peritoneal Lavage (DPL).

OPERATION CODES

10	Intra-cranial Neurosurgery
11	Spinal Cord Surgery
12	ICP monitoring
13	Intra-cranial Surgery + ICP Monitoring
20	Endocrine (thyroid/adrenal)
30	Eye
40	Ear
50	Face (excluding # mandible)
51	Mandibular Fixation
60	Thoracic
61	Tracheostomy
63	Cricothyroidotomy
64	Thoroscopy
65	ER Thoracotomy
70	Cardiac/ Great Vessel in Thoracic Cavity
71	CVS Abdominal/Pelvic
72	CVS Neck
73	CVS Upper Limb
74	CVS Lower Limb
75	Major Venous Injury
80	Splenorrhaphy
81	Splenectomy
83	Non-Therapeutic Laparotomy
84	Liver Resection
85	Liver Packing
86	Mesh Insertion
87	Laparoscopy
88	DPL
90	Gastric Surgery
91	Small Bowel Surgery
92	Large Bowel Surgery
94	Oesophageal Surgery
95	Biliary Tree
96	Pancreatic Surgery
97	Renal and Ureteric
98	Bladder and Urethra
100	Male Genital
101	Female Genital
110	Skeleton Trunk/Spinal Column/Pelvis
111	Skeleton Upper Limbs
112	Skeleton Lower Limbs
113	Muscle Repair
114	Tendon Repair
115	Nerve Repair
130	Skin Repair
140	Other
150	Embolisation

OUTCOME SCORE FACTORS
INJURY TABLE

Body Region	AIS code	Text description	Score

ESTIMATE (optional field) Preliminary estimate of ISS can be entered here value 1 - 75

ISS Calculation using injury AIS scores
TRTS Calculation using pre-hospital vital pulse, resp, blood pressure, GCS
RTS Calculation using ED vital signs P, RR, BP, GCS
TRISS Calculation using ISS and RTS
ASCOT Calculation using injury AIS scores, age, type_trauma etc

SEVERE SALVAGEABLE INJURY (Wesson's criteria)
 1 Salvageable (AIS 4, AIS 5 body region other than Head/Neck, solitary EDH)
 2 Non-salvageable (AIS 6, AIS 5 in Head/Neck except solitary EDH, ISS>59)
 3 N/Ap (ISS <16)
Specific criteria for Wesson's Severely Injured includes patients with at least one injury with AIS score of greater than or equal to 4 or more. But excludes the following:
- AIS 6 (any region)
- AIS 5 in Head/neck (with exception of solitary extradural haematoma which is included)
- ISS > 59

DRG (optional field) DRG code can be entered from Disease index

COST (optional field) Average cost per DRG from cost weights table

PREDOMINANT REGION
 1 Head/Neck
 2 Face
 3 Chest
 4 Abdo/Pelvic contents
 5 Spinal
 6 Extremities
 7 External
 8 Head/Neck and Face
 9 Head/Chest
 10 Head and Abdomen
 11 Head and Extremities
 12 Chest and Abdomen
 13 Chest and Extremities
 14 Abdomen and Extremities

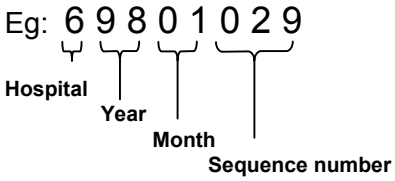
VALUE OF HIGHEST SCORE FOR EACH BODY REGION
Head __ Face __ Chest __ Abdomen__ Extremities __External__ Spinal __

MINOR TRAUMA REGISTRY

UNIQUE ID: This eight digit number will uniquely identify each patient episode. It is possible that a patient may be admitted more than once into the registry if he/she is injured on more than one occasion. The unique identification number utilizes the hospital, year and month of admission. The first number in the string will represent the hospital and is coded as follows:

- 1 - D227 - Bankstown 1
- 2 - N219 - Bowral 2
- 3 - D205 - Camden 3
- 4 - D215 - Campbelltown 4
- 5 - D206 - Fairfield 5
- 6 - D209 - Liverpool 6

The second and third numbers will be the year of admission (e.g. 1998 will be 98.)
The fourth and fifth numbers will be the month of admission (e.g. January will be 01.)
The final three numbers represent the sequential entry onto the database for the month.



MRN/Hospital Unit No: This will be the patient's hospital medical record number

After entering MRN it is possible to query the HOSPAS system to confirm demographic details in hospital Patient Master Index

SURNAME:

FIRST NAME:

SEX:

DATE OF BIRTH:

ADDRESS:

POSTCODE: Where the patient lives.

SPECIALITY -
Indicate the primary team under which the patient was admitted.
 1 - General Surgery
 2 - Neurosurgery
 3 - Orthopaedics
 4 - Plastic
 5 - Faciomaxillary
 6 - Other
 7 - General Practitioner

MECHANISM:
 1 - MVA Driver
 2 - MVA front passenger
 3 - MVA back passenger
 4 - MBA Rider
 5 - MBA Pillion
 6 - Pedestrian
 7 - Pedal cyclist
 8 - Personal assault
 9 - Stabbing
10 - Gunshot
11 - Industrial
12 - Fall <5 metres (between 0 to 5 metres ie 0 to 499cm)
13 - Fall ≥5 metres (ie 500cm and above)
14 - Recreation
15 - Burns
16 - Other
17 - Not documented
18 - Dog bite
19 - Fall 1 metre to 5m (more than 1 metre but less than 5 metres ie 100cm to 499cm)

INTENT
 0 - Accidental
 1 - Self harm intended
 2 - Assault by another with intent to harm
 3 - Assault by partner
 4 - Child Neglect/Abuse
 5 - Undetermined
 6 - Legal intervention (ie police chase etc)

PLACE OF INJURY:
 1 - Street or Highway (including footpaths)
 2 - Home (including visiting at another's house)
 3 - Residential Institution (ie Nursing Home / Retirement Village / Detention Centre / Supported Residences
 4 - Industrial premises
 5 - facility incl railway stations (including shopping centres)
 6 - Hotel or club
 7 - Recreation or unorganized sport
 8 - Organized sport
 9 - School/Preschool
10 - Farm
11 - Other
12 - Not documented
13 - Not applicable

DISPOSITION:
 1 - DOA (**do not use this code for minor injuries**)
 2 - Died in ED (**do not use this code for minor injuries**)
 3 - Theatre
 4 - ITU
 5 - HDU
 6 - Trauma ward (this option only applies to Liverpool Hospital)
 7 - Ward
 8 - Transferred out (use text field to specify hospital / facility patient transferred to)
 9 - Other (use text field to specify hospital / facility patient transferred to)
10 - Home

This is the first clinical area to which the patient was transferred from the Emergency Department. Codes 1and 2 will not be used for minor injuries.

TRAUMA TEAM ACTIVATION: Was the trauma team activated?
 1 - Yes (trauma team activation criteria were met, and trauma team was activated)
 2 - No (trauma team activation criteria were met, but the trauma team was not called)
 3 - Not applicable (no criteria for activation of trauma team – use this code also for **all** hospitals in SWS other than Liverpool.)
NB – options 1 and 2 relate to Liverpool Hospital only.

CRITERIA: (for activation of trauma team response)
If trauma team was activated, specify for what criterion. In the event of multiple criteria being met, select the most life threatening. Criteria may be based on history, vital signs or injuries.

HISTORY:
 1 - MVA ejected from vehicle
 2 - Pedal cyclist, motor cyclist or pedestrian hit by car or truck
 3 - Fall> 5 metres
 4 - Fall from horse
 5 - Interhospital transfer

VITAL SIGNS:
 6 - Airway obstruction
 7 - Shallow or retractive breathing
 8 - Cyanosis
 9 - Skin pallor or slow capillary refill > 2 sec
 10 - Systolic blood pressure < 90 mmHg
 11 - Pulse >130 <50/minute
 12 - Depressed level of conscious or fitting
 13 - Pupils dilated or unreactive
 14 - Trauma score 12 or less
 15 - Deterioration n the Emergency Department

INJURIES:
 16 - Injury to two or more body regions
 17 - Fracture to 2 or more long bones
 18 - Spinal cord Injury
 19 - Crush injury or amputation of a limb
 20 - Penetrating injury to head, neck chest abdomen, pelvis groin or back
 21 - Burns to airway or smoke inhalation (>15% in adults, 10%children)
 22 - Blood loss >500ml
 23 - MVA with deceased
 24 - Not documented

TEXT: Comments may be entered here to clarify mechanism or diagnosis

DIAGNOSIS
This refers to the dominant injury
 1 - # ankle or below
 2 - # upper limbs
 3 - # Neck of Femur
 4 - Laceration upper extremities
 5 - Lacerations lower extremities
 6 - Laceration to tendon upper
 7 - Laceration to tendon lower
 8 - Soft tissue injury F/H/N (face / neck / head)
 9 - Soft tissue injury thorax
10 - Soft tissue injury abdomen
11 - Soft tissue injuries extremities
12 - Burns
13 - Crush Injury
14 - Dog bite
15 - Other
16 - # mandible isolated
17 - Amputate digit (partial or complete)
18 - # patella
19 - Dislocation upper limbs
20 - Dislocation lower limbs
21 - # fibula (isolated # shaft of fibula)
22 - NOF death (# neck of femur, patient died of complications related to the injury – must then be entered in Major Database)

DATE OF ADMISSION: **~~/~~/~~**

DATE OF DISCHARGE/TRANSFER: **~~/~~/~~**

TRANSFER HOSPITAL: Enter name of hospital or facility patient was transferred to OR name of hospital or facility which transferred patient to current hospital.

NAME OF HOSPITAL: Referring hospital name
 1 - D227 - Bankstown 1
 2 - N219 - Bowral 2
 3 - D205 - Camden 3
 4 - D215 - Campbelltown 4
 5 - D206 - Fairfield 5
 6 - D209 - Liverpool 6
 7 - OTH - Other (use text field to specify name of referring hospital)

COMPLICATIONS LIST and DEFINITIONS

(*adapted from UCSD Medical Centre Trauma Service Provider-Related and Disease-Related Complications Dictionary)*
Hoyt DB, Hollingsworth-Firdlund P, Winchell RJ, Simons RK, Holbrokk T, Fortlage D. Department of Surgery, University of California, San Diego. **"**Analysis of recurrent process errors leading to provider-related complications on an organized trauma service: directions for care improvement" Journal of Trauma. 36(3):377-84, 1994 Mar.

PRE-HOSPITAL AIRWAY

1001 Aspiration
Inhalation of gastric contents or blood causing any element of pulmonary failure which requires treatment. Rely on ICU diagnosis. Confirm with Dr Sugrue or Trauma Fellow

1002 Esophageal intubation
Any attempt at intubation which resulted in placement of the endotracheal tube in the esophagus; verified by physical examination, visualization or x-ray film.

1003 Extubation, unintentional
Inadvertent, accidental, unplanned removal of endotracheal tube or tracheostomy/ cricothyroidotomy tube, including tube placement discovered to be in the pharynx after the tube had been verified to be in the trachea.

1004 Mainstem intubation
Any endotracheal intubation procedure resulting in leaving the placement of the tube in either the left or right mainstem bronchus. Difficult to pick, usually results in collapsed lung or hypoventilation on initial ED x-ray

1005 Unable to Intubate
Inability to establish an airway via intubation either by nasal or oral routes.

1009 Other Airway

PRE-HOSPITAL FLUIDS

1501 Inappropriate Fluid Management (except inability to start IV)
Obvious over hydration or failure to recognize the need for fluid administration. IV cannulation and fluid administration to patient with precordial penetration (gunshot/stabbing to heart). > 2000ml fluid without blood.

1502 Unable to Start an IV
Inability to establish a minimum of one intravenous line in the face of a clinical condition that mandates fluid resuscitation for re-establishing *hemodynamic* stability.

1599 Other

PRE-HOSPITAL MISCELLANEOUS

2001 No EMS form
No EMS Form from any agency evaluating and/or transporting the patient. EMS form was not delivered to the hospital for inclusion in the patient record

2002 Incomplete EMS Form
EMS form from transporting agency lacks complete data

2003 Prehospital Delay
Prehospital scene time considered excessive or patient retained in transferring facility for inappropriate time frame relative to clinical presentation. > 20 mins at scene with no entrapment.

2099 Other Prehospital

HOSPITAL AIRWAY

2501 Esophageal Intubation
Any attempt at endotracheal intubation which resulted in placing and leaving the endotracheal tube in the esophagus; verified by physical examination, visualization or x-ray film

2502 Extubation, Unintentional
Inadvertent, accidental, unplanned removal of endotracheal tube or tracheostomy/cricothyroidotomy tube, including tube placement discovered to be in the pharynx after the tube had been verified to be in the trachea

2503 Mainstem Intubation
Any endotracheal intubation procedure resulting in placing and leaving the tube in either the right or left mainstem bronchus. Difficult to pick up - will code only when this complication is documented by ICU.

2599 Other Airway

HOSPITAL PULMONARY (includes pulmonary infections)

3001 Abscess (excludes empyema)
Parenchymal collection of purulent material which is culture positive. It is NOT a positive wound swab).

3002 ARDS
Diagnosis with the following:
1. Tachypnea, air hunger
2. Hypoxemia (<60 mm Hg) without hypercarbia
3. Normal PCWP (<15 mmHg)
4. Diffuse infiltrate on chest x-ray film
5. (Qs/Qt > 25%)

3003 Aspiration/Pneumonia
Inhalation of gastric contents or blood causing any element of pulmonary failure which requires treatment. This will be recorded in ICU notes.

3004 Atelectasis
Collapse of alveoli (which requires bronchoscopy?)

3005 Empyema
Pleural-based infection with a positive culture (Not a simple pneumonia)

3006 Fat Embolus
Clinical diagnosis manifested by change in PO2 and mental status and petechial signs and confirmed in physician=s progress notes (in the presence of long bone fracture).

3007 Hemothorax - not included as a sequelae of traumatic event unless it is a retained pneumothorax
Iatrogenically caused collection of blood verified by chest x-ray or drainage of blood or retained hemothorax residual blood after chest tube placement. Requires chest tube blood drainage to allow diagnosis.

3008 Pneumonia
Fever, leucocytosis confirmed by x-ray study with infiltrate, positive cultures and treated with antibiotic therapy (not prophylactically or empirically).

3009 Pneumothorax (Barotrauma)
Resulting from or associated with positive pressure ventilatory therapy (ICU/theatre)

3010 Pneumothorax (Iatrogenic) -not included as a sequelae of traumatic event even if a late presentation/finding or delay in diagnosis
Resulting from treatment or interventions. Includes iatrogenic tension pneumothorax.

3011 Pneumothorax (Recurrent)
Either persistent reappearance of pneumothorax despite therapy or as a result of error in technique with discontinuance of the chest tube.

3012 Pneumothorax (Tension) - also included as part of a descriptor of traumatic injury diagnosis
Causing hypotension and hemodynamic instability (BP < 100, P > 120) with restoration of vital signs after intervention, or seen on chest x-ray film as causing mediastinal shift.

3013 Pulmonary Edema
Documented by clinical or radiological signs and requires fluid restriction or medication.

3014 Pulmonary Embolus
Verified by positive V/Q scan, angiogram, or on postmortem examination.

3015 Respiratory Failure/Distress
Non-traumatic cause of need to intubate or give prolonged ventilation support. Failure to wean for an extended time period or requiring re-intubation < 8 hours post-extubation. Also a pulmonary diagnosis that is not clearly attributable to other causes, including pneumonia, but which requires re-intubation.

3016 Upper Airway Obstruction
Mechanical upper airway (above larynx) obstruction that is clinically significant enough to require endotracheal intubation.

3017 Pleural Effusion
Sympathetic or late occurring pleural fluid collection (not blood) requiring drainage. (It requires a chest tube and fluid drainage to make this diagnosis)

3099 Other Pulmonary

HOSPITAL - CARDIOVASCULAR

3501 ARRHYTHMIA
Cardiac arrhythmia requiring treatment (IV drugs/defibrillation) or consultation from cardiology service or includes new (not previously documented) arrhythmia. (Eg atrial fibrillation has the patient had this before?)

3502 Cardiac Arrest (unexpected)
Requiring CPR.

3503 Cardiogenic Shock

3504 CHF (iatrogenic)
Requiring treatment or consultation.

Due to myocardial failure requiring treatment with pharmacologic support.

3505 MI
Diagnosed by laboratory and/or ECG, or histologic changes present of postmortem examination.

3506 Pericarditis
ECG changes and fever.

3507 Pericardial Effusion or Tamponade
Not part of the original injury; but sequelae occurring > 48 hours after admission.

3508 Shock
Sustained blood pressure < 100 mm Hg for greater than 15 minutes. Episode occurring after initial resuscitation, excluding cardiogenic shock. Or a drop of 40 mm Hg in a known hypertensive patient (e.g. in an 80 years old man whose normal BP 160/95, a BP of < 120 would indicate shock).

3599 Other Cardiovascular

HOSPITAL - G.I.

4001 Anastomotic Leak
Confirmed by x-ray film or re-operation (confirm with Dr Sugrue)

4002 Bowel Injury (iatrogenic)
Injury to the intestine including serosal tears not causing enteric spill (confirm with Dr Sugrue)

4003 Dehiscence/Evisceration
Fascial separation of surgical wound documented by progress notes or re-operation, with or without evisceration of thoraco-abdominal contents (confirm with Dr Sugrue).

4004 Enterotomy (iatrogenic)
Bowel injury with puncture of the bowel.

4005 Fistula (other than pancreatic fistula)
Any persistent fistula requiring treatment or prolonging hospital course (confirm with Dr Sugrue).

4006 Hemorrhage - Lower GI
Secondary hemorrhage from small bowel or colon causing decrease in hematocrit > 5% and requiring transfusion.

4007 Hemorrhage -Upper GI
Secondary hemorrhage from stomach or higher causing decrease in hematocrit > 5%, endoscopically confirmed and requiring transfusion. (This does not mean Acoffee grounds≅ stick to the criteria).

4008 Ileus
Prolonged duration which lengthens hospital course and or prevents timely feeding. (Any patient who cannot be fed > 24 hours after surgery because of distended abdomen.

4009 Peritonitis
Intra peritoneal infection treated with surgical drainage with or without abscess formation.

4010 SBO (Small Bowel Obstruction)
Confirmed by x-ray film required treatment with surgery or nasogastric decompression.

4011 Ulcer - Duodenal/Gastric
Verified by endoscopic examination.

4099 Other GI

HOSPITAL - HEPATIC, PANCREATIC, BILIARY, SPLENIC

4501 Acalculous Cholecystitis
Inflammation of gallbladder confirmed by pathology at surgery or autopsy or clinical presentation confirmed by interventional radiologic drainage (confirm with Dr Sugrue).

4502 Hepatitis
Confirmed by persistent elevation of hepatic enzymes and bilirubin.

4503 Liver Failure
Progressive, unremitting elevation of enzymes and bilirubin associated with prolonged PT, PTT, decreasing albumin (confirm with Dr Sugrue).

4504 Pancreatic Fistula
Drainage with amylase > 50,000 without other enteric fistulae.

4505 Pancreatitis
Any unexpected pancreatitis Amylase > 100 IUL (confirm with Dr Sugrue).

4506 Splenic Injury (iatrogenic)
Iatrogenic

4599 Other Hepatic/Biliary
Includes biliary stasis, cholelithiasis. Any bilirubin > 30

HOSPITAL - HEMATOLOGIC

5001 Coagulopathy (intra operative)
Bleeding associated with coagulation abnormalities, increased PT, PTT, decreased platelet count or decreased fibrinogen, with or without hypothermia.

5002 Coagulopathy (other)

Prolonged PT, PTT, or decreased platelet count with clinical bleeding or preventing invasive procedures.

5003 DIC
Must meet two or more of the following criteria :Platelets < 100,000/ml, fibrinogen < 100mg/dL, schistocytes or Ahelmet≅ red cells form on blood smear (confirm with ICU notes)

5004 SODIUM

5005 Transfusion Complication
Blood product infusion resulting in a transfusion reaction, infection, hepatitis, AIDS, etc., as confirmed by blood bank investigation. (Type A) transfusion reaction; type B infectious complication.

5009 Other Hematologic

HOSPITAL - INFECTION (Nonpulmonary, Nonorthopedic)

5501 Cellulitis/ Traumatic Injury
Dermal site infection at trauma site or nonsurgical site, includes IV sites, infected abrasions, lacerations.

5502 Fungal Sepsis
Isolation of fungus from blood or treatment for systemic fungal infection (Candida - does not refer to athletes foot or perianal thrush)

5503 Intra-abdominal Abscess
Collection of purulent material in the abdominal cavity confirmed by tissue examination or CT scan

5504 Line Infection
Patient must have intravenous line and recognized pathogen from bloodstream which is unrelated to pathogen at another site, with fever (T > 38.5) chills, or hypotension.

5505 Necrotizing Fasciitis
Confirmed by microscopic findings from tissue excised.

5507 Septicaemia
Positive blood culture. Excludes isolates that are felt to be contaminants.

5508 Sinusitis
Opacification on x-ray film wit positive purulent drainage.

5509 Wound Infection
Involving a clean surgical wound: drainage of purulent material from wound, requiring opening a closed wound, or erythema treated with antibiotics. Does not require a positive wound swab.

5510 Yeast Infection
Isolation of fungus from mouth , perineum, or skin treated with topical antifungal agents.

5599 Other Infection
Includes epididymitis, retroperitoneal infections. Do not report FUO or conjunctivitis.

HOSPITAL - RENAL/GU

6001 Renal failure
Includes diagnosis of ATN, acute renal failure, and pre-renal failure. Creatinine over 3.5, or BUMN A100, or requiring dialysis. Or, hyperkalemia or fluid overload requiring dialysis.

6002 Ureteral Injury
Includes only iatrogenic injury to the ureter.

6003 UTI, early
MSU > 20 pus cells/mm3 plus a positive colony count. Is also considered an Error in Technique.
> 100,000 colonies in clean urine culture and/or presumptive diagnosis that leads to treatment with antibiotics occurring within 3 days after catheter is placed. (Note: the catheter may have already been discontinued prior to the three days).

6004 UTI, late
>100,000 colonies in clean urine culture and/or presumptive diagnosis that leads to treatment with antibiotics occurring > 3 days after catheter placement. (Note: the catheter may have already been discontinued prior to the 3 days). A positive colony count is not adequate because it can be due to contamination.

6099 Other Renal/GU

HOSPITAL - MUSCULOSKELETAL/INTEGUMENTARY

6501 Compartment syndrome (can be diagnosis or complication)
Elevated muscle compartment pressures requiring fasciotomy for treatment. May be secondary to fracture, compression or venous obstruction.

6502 Decubitus, grade minor
Erythema not resolving within 30 minutes of pressure relief. Epidermis remains intact. Reversible with intervention.

6503 Decubitus, grade blister
Partial thickness loss of skin layers involving epidermis and possibly penetrating into but not through dermis. May present as blistering with erythema and/or induration; wound base moist and pink; painful; free of necrotic tissue.

6504 Decubitus, grade open sore

Full thickness tissue loss extending through dermis to involve subcutaneous tissue. Presents as shallow crater unless covered by eschar. May include necrotic tissue, undermining, sinus tract formation, exudate, and/or infection. Wound base is usually not painful.

6505 Decubitus, grade deep
Deep tissue destruction, extending through subcutaneous tissue to fascia and may involve muscle layers, joints and/or bone. Presents as a deep crater. May include necrotic tissue, sinus tract formation, exudate, and/or infection. Wound base is usually not painful.

6506 Loss of Reduction/Fixation
Loss of initial closed or open reduction (not anticipated) requiring subsequent re-manipulation.

6507 Nonunion
Failure to heal < 3 months, despite normal therapy, requiring prolonged fixation or grafting.

6508 Osteomyelitis
Infection of bone based on laboratory values and/or x-ray films.

6509 Orthopaedic Wound Infection
Wound infection requiring antibiotics or drainage following open or closed orthopaedic procedure.

6599 Other

HOSPITAL - NEUROLOGIC

7001 Alcohol Withdrawal
Fits, seizures, agitation, or delirium tremens requiring treatment.

7002 Anoxic Encephalopathy
A complication (not diagnosis) not attributable to original traumatic event. Diagnosis as noted by neurosurgeon, neurologist on progress notes or by medical examiner on autopsy.

7003 Brain Death
Unexpected event not attributable to initial pathological state. Patient fulfilling institution criteria and testing with appropriate documentation.

7004 Diabetes Insipidus
Excessive urinary output treated with vasopressin or DDAVP with appropriate response.

7005 Meningitis
Diagnosed by a positive culture or in the absence of a positive culture one of the following: >50% polymorphonuclear cells on CSF cell count, minimum 50 cells counted; CSF sugar <15 mg%

7006 Neuropraxia (iatrogenic)
Motor dysfunction following procedure, unrelated to original injury.

7007 Nonoperative SDH/EDH
Positive CT finding treated non-operatively - reviewed by peers. (Check with Dr Sugrue)

7008 Progression of Original Neurologic Insult
Outcome worsened by unexpected sequelae of the original injury.

7009 Seizure in Hospital
Witnessed tonic- clonic activity .

7010 SIADH
Output of low volumes of concentrated urine in the face of serum hypotonicity

7011 Stroke/CVA
Secondary to original injury or treatment of original injury which was unexpected.

7012 **Ventriculitis - post-surgical**
Diagnosed by positive culture or in the absence of a positive culture one of the following :>50% polymorphonuclear cells on CSF cell count, minimum 50 cells counted; CSF sugar <15 mg%

7099 Other Neurologic

HOSPITAL - VASCULAR

7501 Anastomosis Hemorrhage
Unexpected bleeding from a surgical anastomosis which requires re-operation.

7502 DVT (lower extremity)
Documented occlusive condition which requires anticoagulant therapy and/ or surgery or results in death or major ischemic injury.

7503 DVT (upper extremity)
Documented occlusive condition which requires anticoagulant therapy and/ or surgery or results in death or major ischemic injury.

7504 Embolus (Non-pulmonary)
A documented visualization or high index of suspicion as documented by trauma surgeon or medical examiner.

7505 Gangrene
Dry gangrene tissue necrosis due to vascular insufficiency. (This is not moist gangrene or "gas gangrene" caused by species of Clostridia).

7506 Graft Infection
Unexpected infection which causes loss of graft, requires antibiotic therapy, or requires surgical intervention.

7507 Thrombosis

Clot formation at a graft or vessel.

7599 Other Vascular

HOSPITAL - PSYCHIATRIC

8001 Psych

A new condition identified as a result of the present injury or hospitalization which was not present or identified prior to the injury and requires psychiatric/psychological evaluation or treatment.

HOSPITAL - OTHER

8501 Anaesthetic Complication

Any complication directly related to an anaesthetic agent or drugs used for anaesthesia therapy.

8502 Drugs

Any complication directly related to a drug used for therapy as confirmed by review. (Will only pick anaphylactic reaction that is one that requires adrenaline).

8503 Fluids

Any complication from fluid and electrolytes therapy confirmed by review

8504 Hypothermia

T < 35^{o}C in operating room, ICU, resuscitation room.

8505 Monitoring

Any complication directly relating to monitoring device. Examples: air embolism, line disconnection, alarm failure.

8506 Return to OT

Unexpected, unplanned return for same or similar procedure.

8507 Unexpected readmission

Unexpected readmission to the hospital for the same traumatic injuries and/or their sequelae after the patient had been originally admitted and discharged.

8508 Unexpected Postoperative Hemorrhage

Unexpected postoperative bleeding which requires treatment with blood products or surgical intervention.

8599 Other

HOSPITAL - PROVIDERS

9001 Delay in Disposition

Patient inappropriately spending greater than 2 hours in resuscitation space without definitive diagnostic or therapeutic plan.

9002 Delay in Trauma Team Activation

Failure to identify major trauma victim and activate trauma response.

9003 Delay to Operating Room

Greater than 2 hours to definitive surgical care. Greater than 6 hours to definitive surgical care for open fracture.

9004 Delay in MD Response

Failure to respond in a timely manner as defined by hospital protocol.

9005 Delay in Obtaining Consult

Failure to obtain consultation when alternative therapy would have been beneficial.

9006 Delay in Diagnosis

Injury-related diagnosis discovered after initial work-up completed and admission diagnosis is determined. (Do not code if the situation is coded in Error in Diagnosis).

9007 Error in Diagnosis

Although the injuries may have been worked up, injury was missed because of misinterpretation or inadequacy of physical examination or diagnostic procedure(s).

9008 Error in Judgement

Errors in medication administration, procedure interpretation or management strategy contrary to available information. This automatically includes disease-specific iatrogenic complications, i.e., CHF from poor fluid management. GI bleed from inadequate prophylaxis.

9009 Error in Technique

Technical error related to procedure.

9010 Incomplete Hospital Record

As provided by medical records QA summary.

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