

NSW Trauma Minimum Data Set

2004 Annual Report



NSW DEPARTMENT OF HEALTH

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Contents

Acknowledgments	i	Individual trauma service summaries	39
Executive summary	1	Gosford Hospital.....	39
Data summary	3	John Hunter Hospital/John Hunter Children's Hospital..	41
Trauma service statistics	7	Liverpool Hospital	44
General profile.....	7	Nepean Hospital	46
Motor vehicle accidents (MVA)	10	Prince of Wales Hospital	48
Motor bike accidents (MBA)	12	Royal North Shore Hospital	50
Pedestrians	14	Royal Prince Alfred Hospital	52
Low/medium falls (<5m)	16	St George Hospital.....	54
High falls (>5m)	18	St Vincent's Hospital	56
Pedal cyclists.....	19	Sydney Children's Hospital	58
Blunt assault	21	The Children's Hospital at Westmead.....	60
Shooting.....	22	Westmead Hospital.....	62
Stabbing.....	23	Wollongong Hospital	64
Arrival modes	24	Appendix 1	67
Operating suite profile	25	Index of figures	69
Intensive care profile.....	26	Index of tables	73
Injury region profile.....	28		
Injury severity profile.....	28		
Length of stay.....	31		
Paediatric trauma summary.....	32		
Paediatric pedal cyclists.....	35		
Paediatric pedestrians	36		
Pre-school (0-5 Years)	37		

Executive summary

The NSW Institute of Trauma and Injury Management (ITIM) 2004 Trauma Minimum Data Set (TMDS) Report is the third report to be published using collated data from the established Trauma Registries in the Greater Metropolitan Sydney Region.

The TMDS report illustrates the spectrum of trauma for patients who have injuries which are classified serious to critical and admitted to Trauma Centres in the calendar year of 2004. Data from the Trauma Registries at:

- Gosford Hospital
- John Hunter Hospital/
John Hunter Children's Hospital
- Liverpool Hospital
- Nepean Hospital
- Prince of Wales Hospital
- Royal North Shore Hospital
- Royal Prince Alfred Hospital
- St George Hospital
- St Vincent's Hospital
- Sydney Children's Hospital
- The Children's Hospital at Westmead
- Westmead Hospital
- are included together with a first time Wollongong Hospital report.

The criteria for inclusion in the TMDS for publication in this report include all patients admitted to the above hospitals who have a physical injury with an Injury Severity Score (ISS) > 15. **An ISS of greater than 15 reflects serious injury.**

The data and format of the 2004 report remains similar to previous years. The data collection tool from which this data is derived is included in Appendix 1.

Key points

- The total number of patients injured in 2004 was 2,262 (this is an 11% increase from 2003 data).
- The death rate at 11% across the collated data was a decreased death rate of 3%.
- 2004 data showed an 18% increase in the number of paediatric patients injured.
- The death rate for penetrating trauma patients decreased by 10% for stabbing injuries and 33% for shooting injuries.
- There was an increase of 10% in the number of patients in 2004 who were injured in a motor bike crash, however despite this increase there was a 5% reduction in deaths from this mechanism of injury.
- Pedestrian road trauma increased by 7% in 2004 but there was a 5% decrease in the death rate compared to 2003 data.
- Low to medium falls continue to be an area of concern and there was an increase of 15% in the number of people injured from this mechanism.
- Trauma involving paediatric pedal cyclists increased by 33%.

Currently the data is utilised to review and evaluate the trauma system as well as the following important areas of practice:

- Provides information to:
 - trauma clinicians
 - NSW Health
 - Area Health Services
 - injury prevention groups
 - Motor Accidents Authority
 - Road Traffic Authority
 - and other appropriate organisations.
- Identifies specific areas of need for Education programs to be used by pre hospital providers, clinicians, administrators and consumers.
- Illustrates the Rural – Metropolitan trauma transfer patterns.

Executive summary

- Is a resource for the development of identified Clinical Practice Guidelines.
- Assists in the evaluation of inter rater reliability Scoring Systems across the trauma environment.
- Recommends topics for potential research projects.
- Contributes to the National Trauma Minimum Data Set.

The NSW ITIM Trauma Minimum Data Registry over the 2002-2004 periods has entered over six thousand patients to the registry. Future reports will utilise this collated data to review and evaluate a range of trauma system aspects including pre hospital times and a more comprehensive rural data set.

Data summary

All data is for calendar year 2004 (ie 01/01/2004 to 31/12/2004) where patients had an Injury Severity Score (ISS) >15. The ISS¹ is a reflection of overall severity and probability of survival based on an anatomical injury severity classification, the AIS or Abbreviated Injury Scale². **An ISS of greater than 15 reflects serious injury.**

Table 1. Trauma service (TS) admissions and deaths

Total admissions	2,407 admissions (2,262 patients)	
Survived	1,994 patients	89% of all patients
Died	268 patients	11% of all patients
Monthly average	201 admissions	
Minimum monthly average	181	(June)
Maximum monthly average	221	(October)

Table 2. Admissions by gender

Female	596 patients (646 admissions)	26% of patients (27% of admissions)
Male	1,665 patients (1,760 admissions)	74% of patients (73% of admissions)
Indeterminate	1 patient (1 admission)	< 0.05% of patients/admissions

Table 3. Outcome by gender

Gender	Outcome – Survived	Outcome – Died
Female	552 admissions (85% of females)	94 admissions (15% of females)
Male	1,587 admissions (90% of males)	173 admissions (10% of males)

1. Baker SP, O'Neill B, Haddon W, The Injury Severity Score, A method for describing patients with multiple injuries and evaluating emergency care, *J Trauma* 14:187-196, 1974.

2. Abbreviated Injury Scale: Association for the Advancement of Automotive Medicine, 1990 Revision, 1998 Update.

Table 4. Age – Top three age ranges

Age range	Count	% of total
15-24	421 patients	19% of all patients
25-34	360 patients	16% of all patients
35-44	288 patients	13% of all patients

Table 5. Mechanism of injury – Road trauma

Road trauma	Count	% of total	Deaths (% of total deaths)
MVA	510 patients	23%	45 patients (17%)
MBA	208 patients	9%	15 patients (6%)
Pedestrian	218 patients	10%	32 patients (12%)
Pedal cyclist	73 patients	3%	7 patients (3%)
Total road trauma	1,009 patients	45%	99 patients (37%)

Table 6. Mechanism of injury – Falls

Fall	Count	% of total	Deaths (% of total deaths)
Low/medium fall (<5m)	676 patients	30%	116 patients (43%)
High fall (>5m)	88 patients	4%	13 patients (5%)
Total all falls	764 patients	34%	129 patients (48%)

Table 7. Mechanism of injury – Assaults

Assault	Count	% of total	Deaths (% of total deaths)
Blunt assault	159 patients	7%	9 patients (3%)
Shooting	18 patients	<1%	6 patients (2%)
Stabbing	54 patients	2%	3 patients (1%)
Total all assaults	231 patients	10%	18 patients (7%)

Table 8. Admission type

Admission type	Count	% of total
Transfer in	667 admissions	28% of all patients
Direct from scene	1,740 admissions	72% of all patients

Table 9. Outcome by admission type

Admission type	Outcome – Survived	Outcome – Died
Transfer in	596 patients (89%)	71 patients (11%)
Direct from scene	1,543 patients (89%)	197 patients (11%)

Table 10. ICU admissions

Admission to ICU	Count	% of total
Yes	1,050 admissions	44%
No	1,357 admitted patients	56%

Table 11. ICU admission by outcome

Admission to ICU	Outcome – Survived	Outcome – Died
Yes	916 admissions (87%)	134 admissions (13%)
No	1,223 admissions (90%)	134 admissions (10%)

Table 12. ICU average length of stay (LOS)

Outcome – All	Outcome – Survived	Outcome – Died
7.47 days	7.71 days	5.84 days

Table 13. Hospital average length of stay (LOS)

LOS	Outcome – All	Outcome – Survived	Outcome – Died
Overall LOS	15.32 days	16.49 days	5.96 days
Direct admission LOS	14.51 days	15.74 days	4.87 days
Transfer in admission LOS	17.42 days	18.42 days	8.97 days

Table 14. Arrival mode – Top three arrival modes

Arrival Mode	Admissions	% of total
Ambulance	1,705 admissions	71%
Helicopter	366 admissions	16%
Private vehicle	134 admissions	6%

Table 15. Operating suite in first 24 hours

761 patients (34% of all patients) were sent to the operating suite within 24 hours of admission for a total of 858 procedures.

Table 16. Operating suite in first 24 hours – Top three procedures

Operating suite procedure	Count	% of total procedures
Craniotomy	210 admissions	24%
Open ext#	157 admissions	18%
Laparotomy	155 admissions	18%

**Table 17. Injury time – Top three hours of the day injury occurred
(excludes patients where time of injury is unknown)**

Hour of day	Count (patients injured)	% of total
15:00	162 patients	7.2%
16:00	137 patients	6.1%
18:00	121 patients	5.4%

Table 18. Injury time – Top three hours of the day of admission to definitive care hospital

Hour of day	Count (patients injured)	% of total
16:00	166 patients	7.5%
17:00	143 patients	6.5%
20:00	139 patients	6.3%

Table 19. Injury day of week

Day of week	Count (patients injured)	% of total
Saturday	433 patients	19%
Sunday	405 Patients	18%
Friday	317 patients	14%
Tuesday	299 patients	13%
Wednesday	283 patients	13%
Thursday	274 patients	12%
Monday	251 patients	11%

Table 20. Injury severity score (ISS)

ISS range	Count (patients)	% of total
16-24	1,296 patients	54% (57.3% all NSW)
25-40	799 patients	38% (35.3% all NSW)
41-75	167 patients	8% (7.4% all NSW)