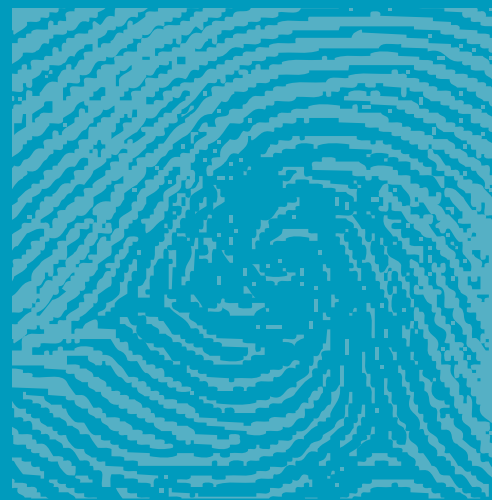


Victorian State Trauma Registry

1 July 2002–30 June 2003

Volume 2: Detailed data



Victorian State Trauma Registry
1 July 2002–30 June 2003

Summary report
Volume 2: Detailed data

Prepared by Monash University: Victorian State Trauma Outcome Registry
and Monitoring Group

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About this report

This is the second volume of the second annual report from the Victorian State Trauma Registry. Over ensuing years, the Victorian State Trauma Registry will provide valuable information for monitoring the performance of the state's trauma system. Data collected during the first and second year, which is summarised in this report, provides the baseline against which such monitoring evaluations will be made.

This report is structured in two volumes. Volume 1 describes the registry and its activities and provides summary baseline data to describe the Victorian State Trauma System. Key indicators of system performance are presented and the profile of Victorian trauma patients described. Most of the data in this volume is presented across the whole trauma system and corresponds to patient level data. When the data is segregated across the trauma service levels, it is done according to information from either the first or definitive hospital of care, as appropriate. A glossary of terms is given in volume 1. Limitations of the present data are also highlighted in this volume. Volume 2 provides additional data presentations for readers who are interested in further tabulations of the registry data. Many of these tabulations break down the data according to trauma service level on the basis of either the first or definitive hospital of care, as appropriate.

Throughout these two volumes, a * in a table cell indicates a count of one to five cases (either patients or episodes of care). The actual numbers within these cells are not provided to ensure that full privacy of individuals is maintained, in accordance with privacy requirements.

Major trauma numbers

All data in this section split by trauma service level corresponds to the definitive hospital of care.

Major trauma patients

The median number of major trauma patients each month over the 12-month period of year 2 (July 2002 to June 2003) was 115 (range: 92–144).

Reason for inclusion in the registry

The reason for patient inclusion in major trauma data is detailed in the following table (in decreasing hierarchical order across the table from left to right).

Table 1 Reason for patient inclusion in major trauma data

Trauma service level	Total patients		In-hospital death %		ISS > 15 %		ICU > 24 hours requiring mechanical ventilation %		Urgent surgery %	
	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2
	Major Trauma Service	1101	1126	15.0	11.2	70.2	71.4	5.8	8.1	9.0
Metropolitan Trauma Service	190	152	12.6	11.2	68.4	66.4	3.7	4.6	15.3	17.8
Metropolitan Primary Care Service	0	0	-	-	-	-	-	-	-	-
Regional Trauma Service	71	86	7.0	28.0	81.7	53.5	*	10.5	*	8.1
Urgent Care Service	22	15	50.0	53.3	40.9	*	*	0	0	*
Regional Primary Care Service	0	0	-	-	-	-	-	-	-	-
Total	1384	1379	14.8	12.7	70.0	69.3	5.3	7.8	9.9	10.2

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

Note: * indicates five or fewer patients.

Episodes of care

Table 2 Total number of major trauma care episodes and ICU admissions

Trauma service level	Total patients		Number of ICU admissions (irrespective of LOS)		Deaths	
	Y1	Y2	Y1	Y2	Y1	Y2
Major Trauma Service	1117	1143	607	580	163	126
Metropolitan Trauma Service	287	240	98	55	24	17
Metropolitan Primary Care Service	24	*	0	0	-	-
Regional Trauma Service	188	207	41	58	5	24
Urgent Care Service	125	99	9	0	11	8
Regional Primary Care Service	8	9	0	0	-	-
Total	1749	1702	755	693	203	175

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

Note: * indicates five or fewer patients.

Note: there is some multiple counting in this table as 353 patients in Year 1 and 304 patients in Year 2 had multiple hospital episodes reported. In year 1, 337 patients had two episodes and 16 patients had three episodes, while 285 patients had two episodes and 19 patients had three episodes in year 2.

Table 3 Number of major trauma patients, ICU admissions and in-hospital deaths at the hospital providing the first episode of care

Trauma service level	Total patients		Number of ICU admissions (irrespective of LOS)		Deaths	
	Y 1	Y2	Y1	Y2	Y1	Y2
Major Trauma Service	684	745	355	377	116	94
Metropolitan Trauma Service	238	182	70	30	30	21
Metropolitan Primary Care Service	24	*	0	0	*	0
Regional Trauma Service	153	181	31	48	18	31
Urgent Care Service	119	93	8	0	20	14
Regional Primary Care Service	8	9	0	0	0	0
Total	1226	1214	464	455	187	162

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

Note: * indicates five or fewer patients.

Note: 158 patients are missing first hospital care episodes in year 1 and 165 are missing first hospital care episodes in year 2 (largely due to a lack of ethics approvals).

Table 4 Number of major trauma patients, ICU admissions and in-hospital deaths at the hospital providing definitive care

Trauma service level	Total patients		Number of ICU admissions (irrespective of LOS)		Deaths	
	Y 1	Y2	Y1	Y2	Y1	Y2
Major Trauma Service	1001	1126	601	577	163	126
Metropolitan Trauma Service	190	152	92	51	24	17
Metropolitan Primary Care Service	-	-	-	-	-	-
Regional Trauma Service	71	86	32	46	5	24
Urgent Care Service	22	15	7	0	11	8
Regional Primary Care Service	-	-	-	-	-	-
Total	1384	1379	732	674	203	175

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

Demographic profile of major trauma cases

All data in this section is split by trauma service level, corresponding to the definitive hospital of care.

Table 5 Age (in years) of major trauma patients

Trauma service level		Total patients	0-14 %	15-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	Total %
MTS	Year 1	1101	8.4	24.6	18.8	12.8	11.9	7.0	6.4	10.1	100
	Year 2	1125	9.0	21.2	17.4	15.3	12.4	8.0	6.0	10.7	100
MeTS	Year 1	190	*	23.2	19.5	18.4	9.5	11.6	7.9	9.5	100
	Year 2	152	5.3	25.0	13.8	17.8	10.5	9.2	6.6	11.8	100
MPCS	Year 1	0	-	-	-	-	-	-	-	-	100
	Year 2	0	-	-	-	-	-	-	-	-	100
RTS	Year 1	71	*	22.5	21.1	9.9	14.1	12.7	*	8.5	100
	Year 2	86	*	14.0	9.3	18.6	17.4	10.5	*	20.9	100
UCS	Year 1	21	0	*	*	0	*	*	*	*	100
	Year 2	15	*	0	*	*	*	*	*	*	100
PCS	Year 1	0	-	-	-	-	-	-	-	-	100
	Year 2	0	-	-	-	-	-	-	-	-	100
Total	Year 1	1383	7.0	24.3	19.0	13.2	11.6	8.0	6.7	10.2	100
	Year 2	1378	8.2	20.9	16.5	15.7	12.5	8.3	6.0	11.9	100

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: * indicates five or fewer patients.

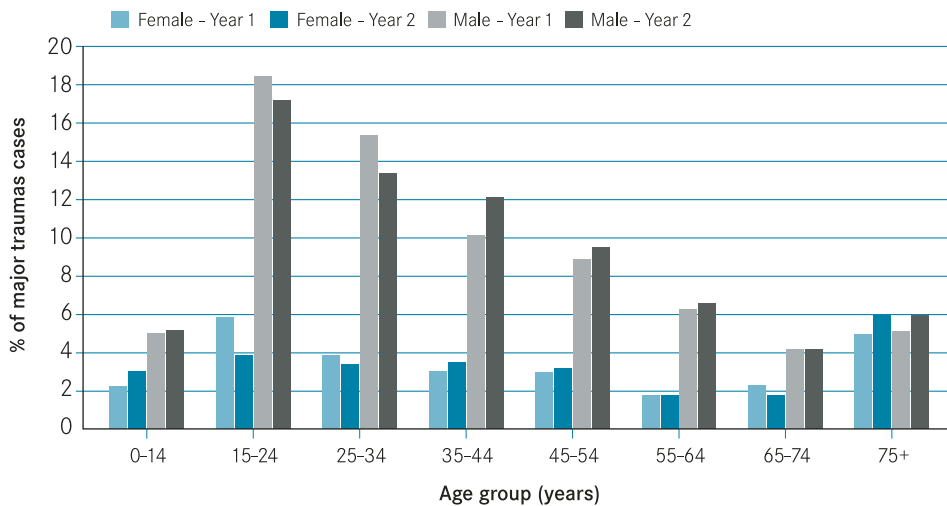
Note: one patient receiving treatment in the Urgent Care Service in year 1 did not have an age recorded and one patient receiving treatment in the Major Trauma Services in year 2 did not have an age recorded.

Table 6 Gender distribution of major trauma patients

Trauma service level	Total patients		Males %		Females %	
	Y1	Y2	Y1	Y2	Y1	Y2
Major Trauma Service	1101	1126	73.7	73.7	26.3	26.3
Metropolitan Trauma Service	190	152	72.6	75.0	27.4	25.0
Metropolitan Primary Care Service	0	0	-	-	-	-
Regional Trauma Service	71	86	66.2	74.4	33.8	25.6
Urgent Care Service	22	15	63.6	53.4	36.2	46.6
Regional Primary Care Service	0	0	-	-	-	-
Total	1384	1379	72.9	73.7	27.1	26.3

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

Figure 1 Overall age/gender distribution of all major trauma patients



Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Injury event details

Time and day of injury

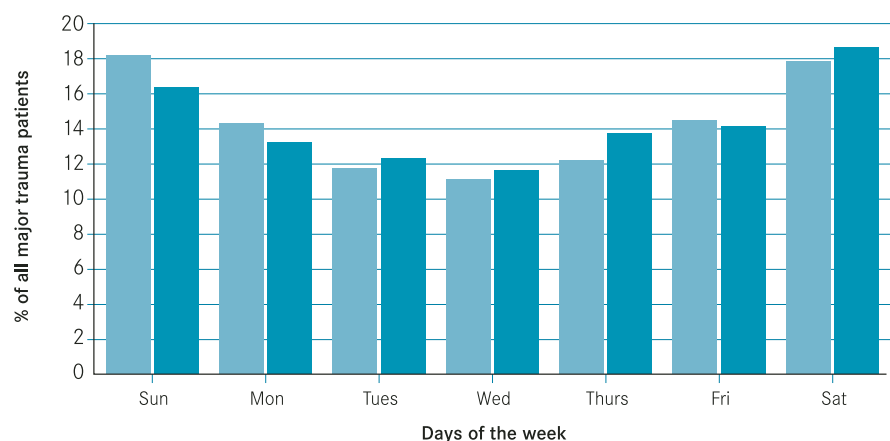
Table 7 Time of injury for major trauma patients (definitive hospital)

Trauma service level	Year	Total patients	12 am to before 8 am %	8 am to before 4 pm %	4 pm to before 12 am %	Total %
Major Trauma Service	Year 1	987	20.9	38.3	40.8	100
	Year 2	940	18.7	33.0	48.3	100
Metropolitan Trauma Service	Year 1	161	23.6	38.5	37.9	100
	Year 2	119	16.9	32.7	50.4	100
Metropolitan Primary Care Service	Year 1	0	-	-	-	-
	Year 2	0	-	-	-	-
Regional Trauma Service	Year 1	62	14.5	46.8	38.7	100
	Year 2	72	13.9	33.3	52.8	100
Urgent Care Service	Year 1	20	20.0	35.0	45.0	100
	Year 2	12	8.3	50.0	41.7	100
Regional Primary Care Service	Year 1	0	-	-	-	100
	Year 2	0	-	-	-	100
Total	Year 1	1230	20.9	38.7	40.4	100
	Year 2	1143	18.1	33.2	48.7	100

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: 154 patients in year 1 and 236 patients in year 2 had no time of injury recorded.

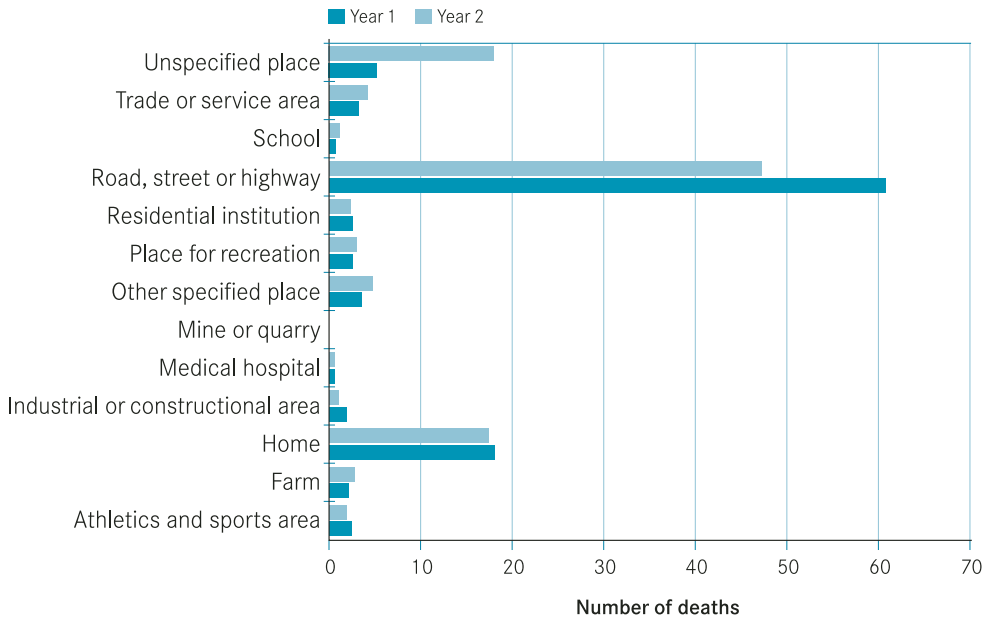
Figure 2 Distribution of injuries by days of the week



Note: year 1 (July 2001 to June 2002); year 2 (July 2002 to June 2003).

Cause and location

Figure 3 Distribution of the places of injury occurrence in major trauma patients



Note: year 1 = July 2001 to June 2002 (total patients = 1384); year 2 = July 2002 to June 2003 (total patients = 1376).

Note: three patients have values missing for place of injury in year 2.

Note: the 'other specified places' category includes patients who gave a location as a specific street address or suburb/locality name but the type of place was not specified. The 'unspecified place' category has been used to indicate the patients for whom the type of place of injury was not specified.

Table 8 Place of injury for major trauma patients according to trauma service level of the definitive hospital of care

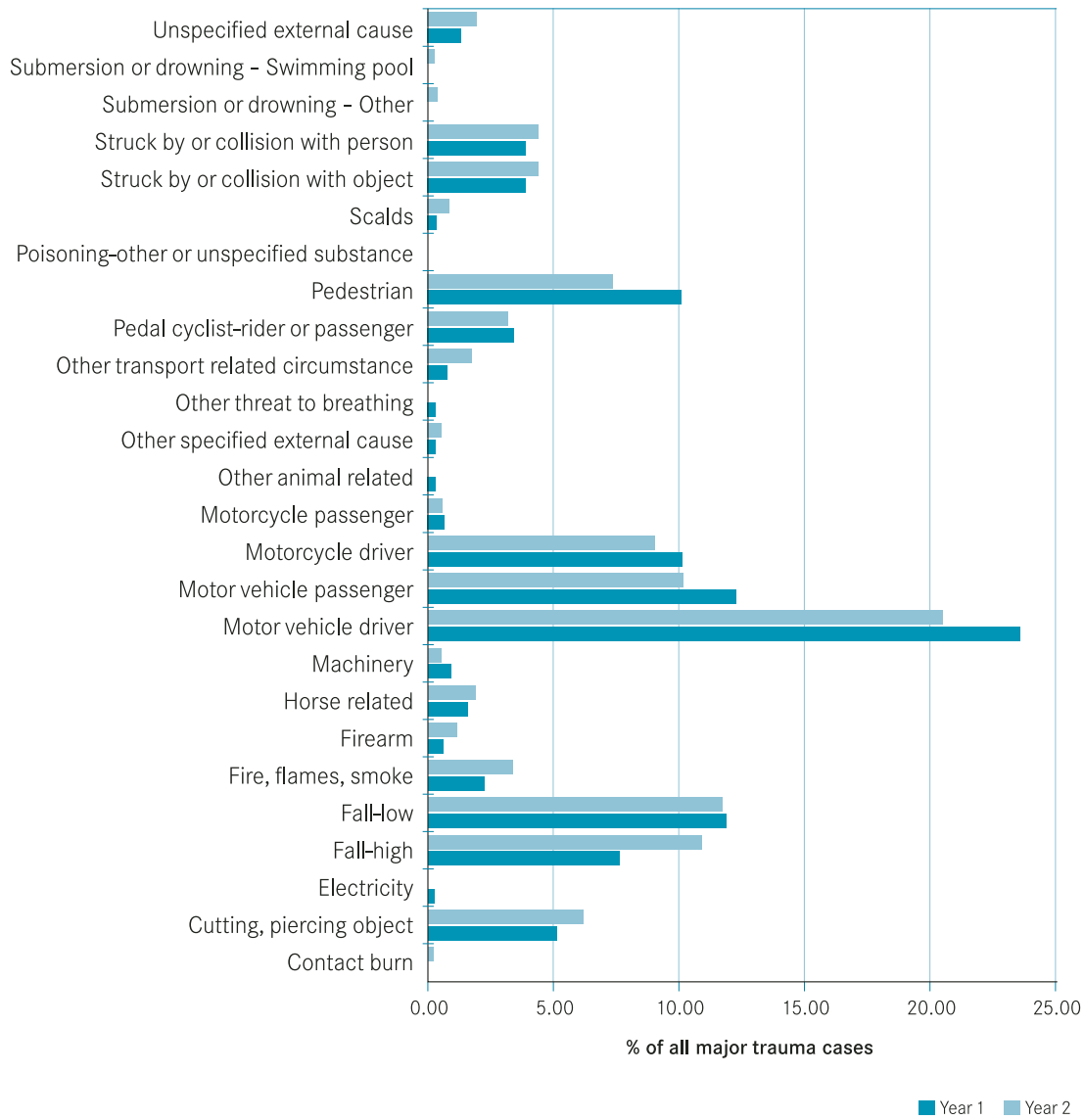
Place description where the trauma occurred	Year	Major Trauma Service patients	Metro-politan trauma service patients	Metro-politan Primary Care Service patients	Regional Trauma Service patients	Urgent Care Service patients	Regional Primary Care Service patients
Road, street or highway	Year 1	689	105	0	35	10	0
	Year 2	537	57	0	39	8	0
Home	Year 1	166	48	0	20	7	0
	Year 2	161	43	0	22	*	0
Industrial or constructional area	Year 1	15	10	0	*	0	0
	Year 2	13	*	0	0	0	0
Trade or service area	Year 1	33	*	0	*	0	0
	Year 2	38	12	0	*	0	0
Farm	Year 1	19	*	0	*	*	0
	Year 2	28	*	0	7	0	0
Place for recreation	Year 1	25	0	0	*	0	0
	Year 2	33	*	0	0	0	0
Residential institution	Year 1	23	*	0	*	0	0
	Year 2	14	*	0	*	0	0
Athletics and sports area	Year 1	20	8	0	*	*	0
	Year 2	14	7	0	*	0	0
Medical hospital	Year 1	6	0	0	*	0	0
	Year 2	6	0	0	*	0	0
School	Year 1	7	*	0	0	0	0
	Year 2	11	*	0	0	0	0
Mine or quarry	Year 1	*	0	0	0	0	0
	Year 2	0	0	0	0	0	0
Other specified place	Year 1	29	*	0	*	*	0
	Year 2	48	9	0	*	0	0
Unspecified place/missing	Year 1	67	*	0	*	*	0
	Year 2	220	7	0	*	*	0
Total	Year 1	1101	190	0	71	22	0
	Year 2	1123	152	0	86	15	0

Note: year 1 = July 2001 to June 2002 (total patients = 1384); year 2 = July 2002 to June 2003 (total patients = 1376).

Note: * indicates five or fewer patients.

Note: three patients have values missing for place of injury in year 2.

Figure 4 Distribution of overall mechanisms of injury in major trauma patients



Note: year 1 = July 2001 to June 2002 (total patients = 1384); year 2 = July 2002 to June 2003 (total patients = 1379).

Table 9 Mechanism of injury in major trauma patient according to trauma service level of the definitive hospital of care

Place description where the trauma occurred	Year	Major Trauma Service patients	Metro-politan trauma service patients	Metro-politan Primary Care Service patients	Regional Trauma Service patients	Urgent Care Service patients	Regional Primary Care Service patients
Motor vehicle driver	Year 1	271	31	0	19	*	0
	Year 2	247	14	0	19	*	0
Fall-low	Year 1	133	28	0	6	*	0
	Year 2	128	23	0	14	*	0
Pedestrian	Year 1	121	15	0	*	*	0
	Year 2	86	12	0	0	*	0
Motor vehicle passenger	Year 1	135	24	0	8	*	0
	Year 2	125	7	0	6	*	0
Motorcycle driver	Year 1	103	22	0	10	*	0
	Year 2	94	14	0	12	0	0
Fall-high (>1 metre)	Year 1	79	20	0	7	*	0
	Year 2	109	20	0	8	*	0
Cutting, piercing object	Year 1	56	9	0	*	*	0
	Year 2	67	16	0	*	*	0
Struck by or collision with object	Year 1	39	7	0	*	*	0
	Year 2	53	7	0	*	0	0
Struck by or collision with person	Year 1	38	11	0	*	*	0
	Year 2	46	9	0	*	0	0
Pedal cyclist-rider or passenger	Year 1	34	6	0	*	0	0
	Year 2	29	*	0	6	*	0
Fire, flames, smoke	Year 1	27	*	0	0	*	0
	Year 2	44	0	0	0	0	0
Horse related	Year 1	15	*	0	*	0	0
	Year 2	17	*	0	*	0	0
Machinery	Year 1	8	*	0	0	0	0
	Year 2	*	0	0	*	0	0
Other transport related circumstance	Year 1	7	*	0	0	0	0
	Year 2	19	*	0	0	0	0
Other animal related	Year 1	*	0	0	0	0	0
	Year 2	0	0	0	0	0	0
Firearm	Year 1	6	0	0	0	*	0
	Year 2	8	*	0	*	0	0
Motorcycle passenger	Year 1	7	0	0	0	*	0
	Year 2	7	0	0	0	0	0
Scalds	Year 1	*	0	0	0	0	0
	Year 2	9	0	0	0	0	0
Poisoning	Year 1	*	0	0	0	0	0
	Year 2	0	0	0	0	0	0
Other specified cause	Year 1	*	*	0	0	0	0
	Year 2	*	*	0	0	0	0
Other threat to breathing	Year 1	*	0	0	0	0	0
	Year 2	*	0	0	0	0	0
Electricity	Year 1	*	*	0	0	0	0
	Year 2	*	0	0	0	0	0
Unspecified external cause/missing	Year 1	13	*	0	0	0	0
	Year 2	19	*	0	*	0	0
Total	Year 1	1101	190	0	71	22	0
	Year 2	1126	152	0	86	15	0

Note: year 1 = July 2001 to June 2002 (total patients = 1384); year 2 = July 2002 to June 2003 (total patients = 1379)

Note: * indicates five or fewer patients.

TAC-compensable cases

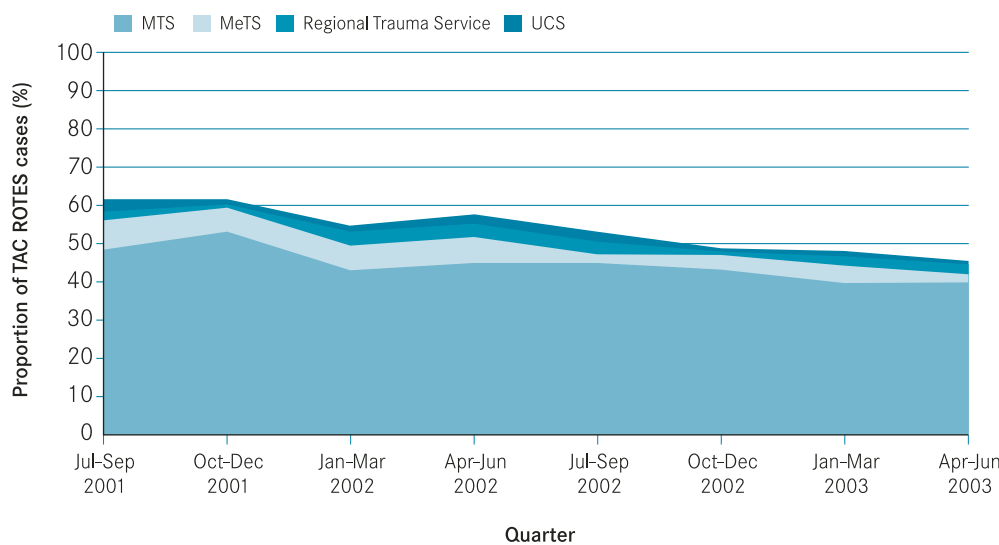
Table 10 Proportion of major trauma patients that were TAC compensable according to the hospital of definitive care

Trauma service level	Major trauma patients				Missing	
	Patients*		Percentage of TAC patients*		Year 1	Year 2
	Year 1	Year 2	Year 1	Year 2		
Major Trauma Service	1031	1114	59.6	51.0	70	12
Metropolitan Trauma Service	184	143	53.3	33.6	6	9
Metropolitan Primary Care Service	0	0	-	-	-	-
Regional Trauma Service	70	86	45.7	38.4	1	0
Urgent Care Service	22	15	40.9	53.3	0	0
Regional Primary Care Service	0	0	-	-	-	-
Total	1307	1358	57.6	48.4	77	21

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: * excludes patients of unknown compensable fund and missing values for year 1 (patients = 77) and year 2 (patients = 21).

Figure 5 Trends in the proportion of TAC-compensable patients over the 24-month period (according to the hospital of definitive care)



Note: excludes patients of unknown compensable fund and missing values for year 1 (patients = 77) and year 2 (patients = 21).

Injury intent

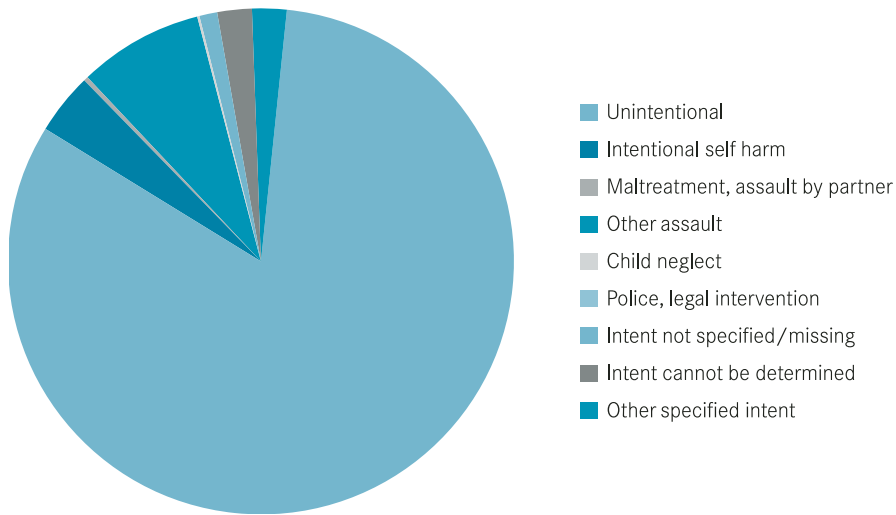
Table 11 Intent of the injury in major trauma patients according to the trauma service level of the definitive hospital of care

Human intent	Year	Major Trauma Service patients	Metro-politan trauma service patients	Metro-politan Primary Care Service patients	Regional Trauma Service patients	Urgent Care Service patients	Regional Primary Care Service patients
Unintentional	Year 1	950	165	0	63	17	0
	Year 2	945	104	0	71	13	0
Intentional self harm	Year 1	38	9	0	*	0	0
	Year 2	44	*	0	*	0	0
Maltreatment, assault by partner	Year 1	*	*	0	*	*	0
	Year 2	*	*	0	0	0	0
Child neglect, maltreatment	Year 1	*	0	0	0	0	0
	Year 2	*	0	0	0	0	0
Other assault (not otherwise specified)	Year 1	77	12	0	*	*	0
	Year 2	94	12	0	*	*	0
Other specified intent	Year 1	*	0	0	0	0	0
	Year 2	*	*	0	0	0	0
Intent cannot be determined	Year 1	21	*	0	0	0	0
	Year 2	26	*	0	*	0	0
Intent not specified/missing	Year 1	7	*	0	0	0	0
	Year 2	10	*	0	*	0	0
Total	Year 1	1101	190	0	71	22	0
	Year 2	1126	152	0	86	15	0

Note: year 1 = July 2001 to June 2002 (total patients = 1384); year 2 = July 2002 to June 2003 (total patients = 1379).

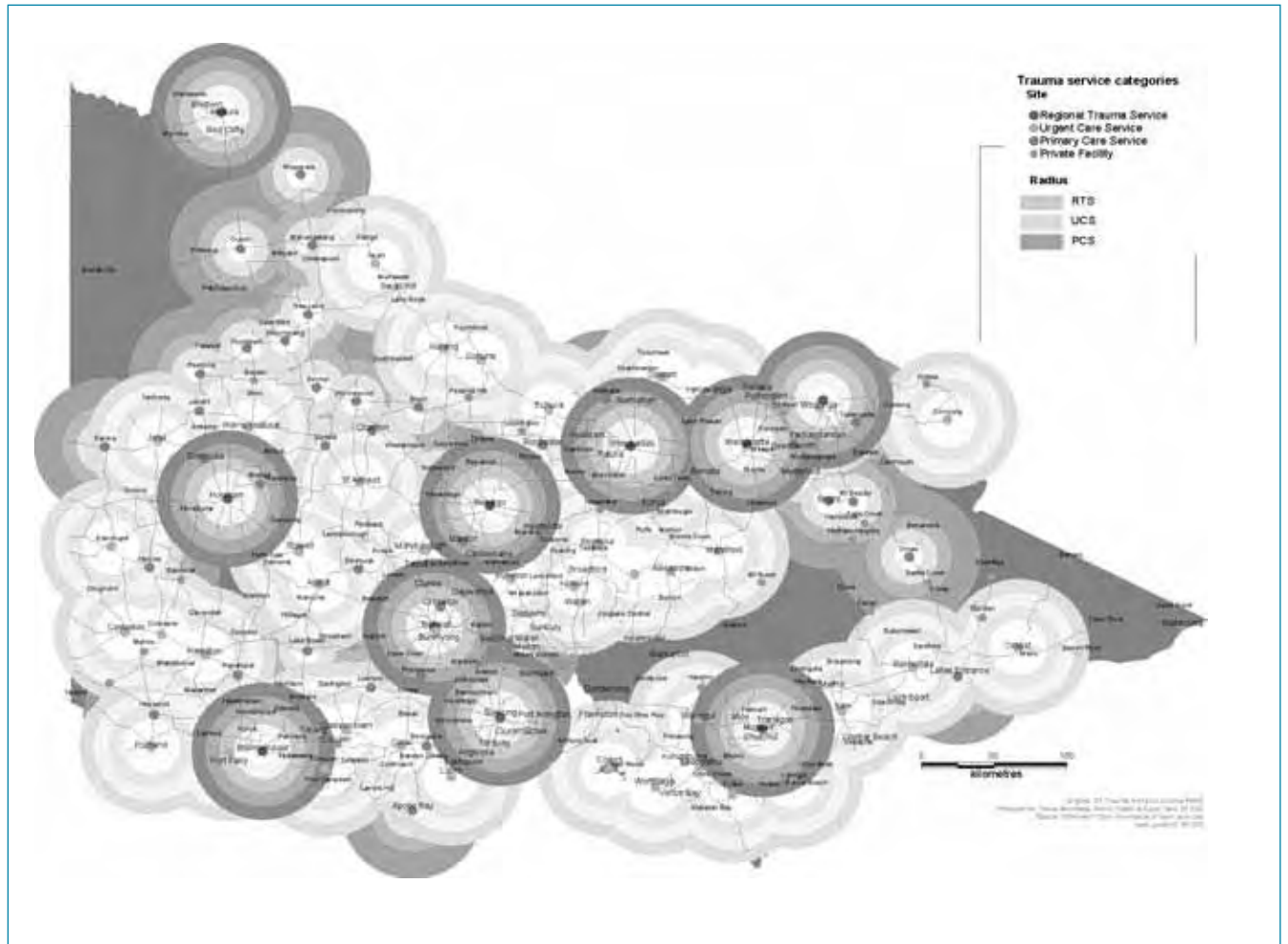
Note: * indicates five or fewer patients.

Figure 6 Injury intent in major trauma patients, year 2



Note: year 2 = July 2002 to June 2003 (total patients = 1379)

Figure 7 The radial distances from all health facilities designated as a trauma service in rural Victoria



Note: each trauma service level is indicated by a different colour

Note: Western District Health Service (Hamilton Campus) were upgraded from an Urgent Care Service to a Regional Trauma Service in late 2003

Type of trauma

Table 12 Type of injury sustained by major trauma patients

Trauma service level	Total patients		Blunt trauma %		Penetrating %		Burn %		Missing patients	
	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2
Major Trauma Service	1101	1122	91.0	87.7	5.9	7.0	3.1	5.3	0	4
Metropolitan Trauma Service	189	152	92.6	88.8	5.8	11.2	*	0	1	0
Metropolitan Primary Care Service	0	0	-	-	-	-	-	-	-	-
Regional Trauma Service	71	86	93.0	88.4	*	11.6	0	0	0	0
Urgent Care Service	22	15	81.8	86.7	*	*	*	0	0	0
Regional Primary Care Service	0	0	-	-	-	-	-	-	-	-
Total	1383	1375	91.2	87.9	6.1	7.8	2.7	4.3	1	4

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

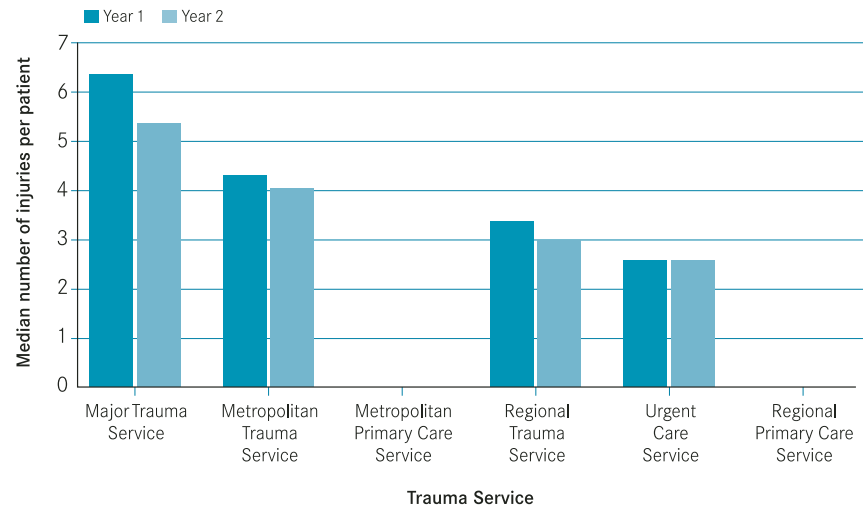
Note: * indicates five or fewer patients.

Note: one patient was non-trauma in year 1; two patients were non-trauma in year 2.

Two patients had an unknown injury type in year 2.

Multiple injuries

Figure 8 Median number of injuries per patient according the trauma service level at the hospital of definitive care



Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 13 Distribution of body regions injured in major trauma patients at the hospital of definitive care

		Percentage of injuries treated at each trauma service level						
ISS body region	Year	Total %	Major Trauma Service %	Metro-politan Trauma Service %	Metro-politan Primary Care Service %			Regional Primary Care Service %
					Regional Trauma Service %	Urgent Care Service %	Regional Primary Care Service %	
Head/neck	Year 1	29.9	30.8	26.3	-	17.0	34.1	-
	Year 2	31.1	32.2	30.5	-	10.2	8.7	-
Face	Year 1	7.2	7.6	4.9	-	3.9	*	-
	Year 2	7.0	6.9	7.6	-	5.8	8.7	-
Chest	Year 1	16.6	15.5	23.4	-	24.6	20.4	-
	Year 2	15.9	15.1	19.3	-	28.0	17.4	-
Abdomen/pelvis	Year 1	10.1	9.3	15.4	-	14.7	13.6	-
	Year 2	10.1	9.9	10.7	-	10.2	26.1	-
Extremity	Year 1	19.9	20.2	17.7	-	22.8	*	-
	Year 2	20.1	20.4	14.4	-	27.2	17.4	-
External	Year 1	16.3	16.6	12.3	-	17.0	25.0	-
	Year 2	15.8	15.5	17.5	-	18.6	21.7	-
Total	Year 1	100	100	100	-	100	100	-
	Year 2	100	100	100	-	100	100	-

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: * indicates five or fewer patients.

Glasgow Coma Score

Table 14 Distribution of the Glasgow Coma Score for all major trauma patients on arrival from scene at an emergency department

Trauma service level	Year	Patients	Glasgow Coma Score						Total %
			3 %	4-5 %	6-8 %	9-12 %	13-14 %	15 %	
Major Trauma Service	Year 1	1088	22.4	2.9	4.0	7.7	23.6	39.4	100
	Year 2	1115	22.0	1.3	4.3	8.8	21.1	42.5	100
Metropolitan Trauma Service	Year 1	188	10.1	*	3.7	5.9	17.0	61.2	100
	Year 2	144	7.6	*	6.3	6.3	19.4	59.7	100
Metropolitan Primary Care Service	Year 1	-	-	-	-	-	-	-	-
	Year 2	-	-	-	-	-	-	-	-
Regional Trauma Service	Year 1	62	0	*	*	*	19.3	71.0	100
	Year 2	83	9.6	*	*	8.4	18.1	56.6	100
Urgent Care Service	Year 1	22	27.3	0	*	*	*	45.5	100
	Year 2	12	*	0	0	0	*	41.7	100
Regional Primary Care Service	Year 1	-	-	-	-	-	-	-	-
	Year 2	-	-	-	-	-	-	-	-
Total	Year 1	1360	19.8	2.7	3.9	7.4	22.3	43.9	100
	Year 2	1354	19.8	1.4	4.4	8.4	20.8	45.2	100

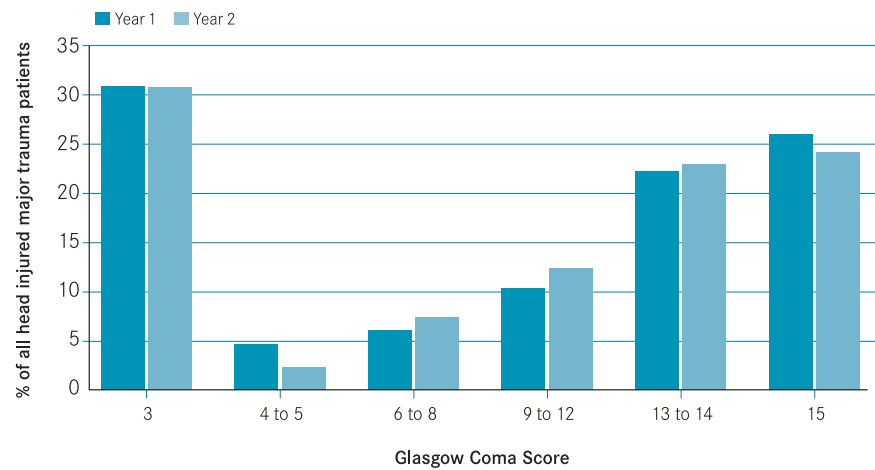
Note: year 1 = July 2001 to June 2002 (total patients = 1360); year 2 = July 2002 to June 2003 (total patients = 1354).

Note: * indicates five or fewer patients.

Note: if no GCS was recorded at the first emergency department, the GCS from the second emergency department was used. If the patient was intubated or sedated on arrival, or no GCS was recorded at the first or second emergency department, the patient's valid pre-hospital GCS was used.

Note: 24 patients were missing a GCS in year 1; 25 were missing a GCS in year 2.

Figure 9 The Glasgow Coma Score for all head injured major trauma patients on arrival from scene at an emergency department



Note: year 1 = July 2001 to June 2002 (total patients = 660); year 2 = July 2002 to June 2003 (total patients = 616).

Note: if no GCS was recorded at the first emergency department, the GCS from the second emergency department was used. If the patient was intubated or sedated on arrival, or no GCS was recorded at the first or second emergency department, the patient's valid pre-hospital GCS was used.

Note: the GCS was missing for six patients with head injuries in year 1 and from five patients with head injuries in year 2.

Table 15 Distribution of the Glasgow Coma Score for all head injured major trauma patients on arrival from scene at an emergency department

Trauma service level	Year	Patients	3	4-5	6-8	9-12	13-14	15	Total
			%	%	%	%	%	%	%
Major Trauma Service	Year 1	580	32.2	4.8	6.4	10.3	22.9	23.4	100
	Year 2	544	32.2	2.4	7.0	12.7	22.7	23.0	100
Metropolitan Trauma Service	Year 1	55	23.6	*	*	*	12.7	41.8	100
	Year 2	57	14.0	*	*	12.3	24.6	38.6	100
Metropolitan Primary Care Service	Year 1	-	-	-	-	-	-	-	-
	Year 2	-	-	-	-	-	-	-	-
Regional Trauma Service	Year 1	17	0	0	0	*	35.3	52.9	100
	Year 2	13	*	0	*	*	*	*	100
Urgent Care Service	Year 1	8	*	0	0	*	*	*	100
	Year 2	*	0	0	0	0	*	0	100
Regional Primary Care Service	Year 1	-	-	-	-	-	-	-	-
	Year 2	-	-	-	-	-	-	-	-
Total	Year 1	660	30.6	4.8	6.2	10.3	22.3	25.8	100
	Year 2	616	30.5	2.3	7.3	12.7	22.9	24.3	100

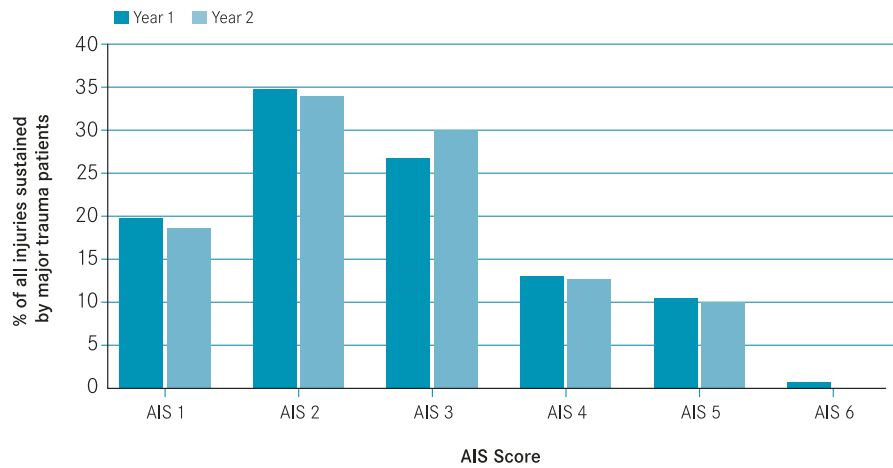
Note: year 1 = July 2001 to June 2002 (total patients = 660); year 2 = July 2002 to June 2003 (total patients = 616).

Note: if no GCS was recorded at the first emergency department, the GCS from the second emergency department was used. If the patient was intubated or sedated on arrival or no GCS was recorded at the first or second emergency department, the patient's valid pre-hospital GCS was used.

Note: the GCS was missing for six patients with head injuries in year 1 and from five patients with head injuries in year 2.

Injury severity (AIS and ISS levels)

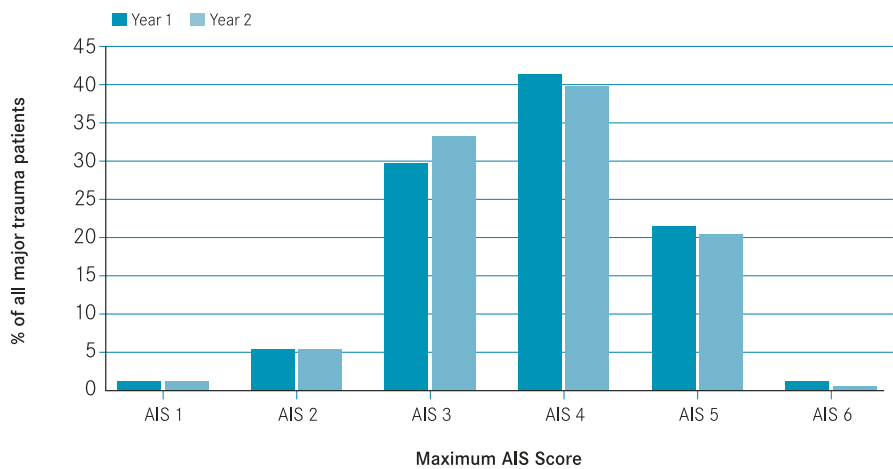
Figure 10 Distribution of AIS scores for all injuries in major trauma patients



Note: year 1 = July 2001 to June 2002 (total patients = 7964); year 2 = July 2002 to June 2003 (total patients = 6896).

Note: the AIS value could not be determined for 11 injuries in year 1 and 16 injuries in year 2.

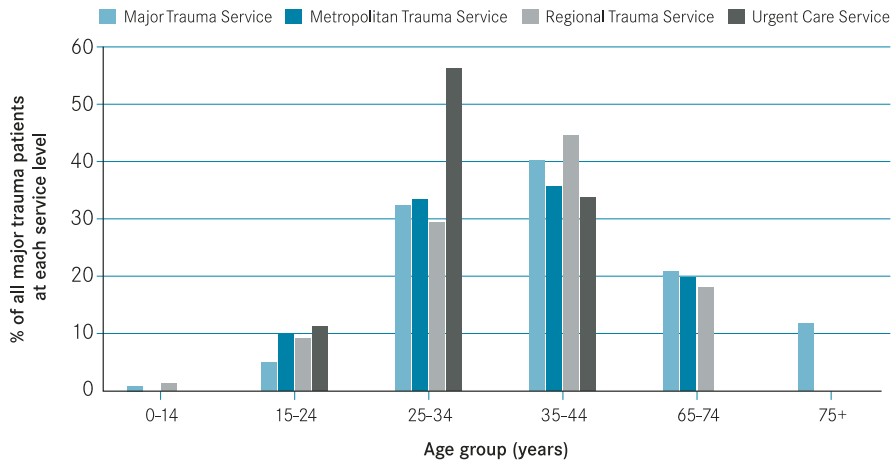
Figure 11 Distribution of maximum AIS scores for each major trauma patient



Note: year 1 = July 2001 to June 2002 (total patients = 1362); year 2 = July 2002 to June 2003 (total patients = 1347).

Note: the AIS value could not be determined for 22 patients in year 1 and 32 patients in year 2.

Figure 12 Distribution of maximum AIS scores for each major trauma patient, year 2



Note: year 2 = July 2002 to June 2003 (total patients = 1347).

Note: the maximum AIS score could not be determined for 22 patients in year 2.

Table 16 Distribution of AIS scores for all injuries in major trauma patients receiving definitive treatment at a Major Trauma Service

Body region	Year	Patients	Percentage of all injuries					
			AIS 1 %	AIS 2 %	AIS 3 %	AIS 4 %	AIS 5 %	AIS 6 %
Head or neck	Year 1	2116	2.0	21.0	39.5	25.0	12.2	0.3
	Year 2	1931	1.8	20.9	43.2	24.0	10.0	0.1
Face	Year 1	522	31.0	56.9	11.9	0.2	0	0
	Year 2	417	33.3	58.0	8.1	0.6	0	0
Chest	Year 1	1068	5.1	23.2	40.0	23.7	7.6	0.4
	Year 2	908	4.4	26.5	42.3	19.2	7.4	0.2
Abdomen or pelvis	Year 1	635	5.2	59.7	20.9	10.9	3.3	0
	Year 2	597	3.4	63.0	23.6	7.7	2.3	0
Extremities	Year 1	1391	7.3	61.5	28.8	1.8	0.6	0
	Year 2	1227	4.1	58.9	34.4	2.4	0.2	0
External	Year 1	1144	87.1	9.7	1.2	0.6	1.1	0.3
	Year 2	936	83.8	9.9	1.9	2.7	1.6	0.1

Note: year 1 = July 2001 to June 2002 (total patients = 6876); year 2 = July 2002 to June 2003 (total patients = 6016).

Note: eight injuries in year 1 and 15 injuries in year 2 could not have their AIS values determined.

Table 17 Distribution of AIS scores for all injuries in major trauma patients receiving definitive treatment at a Metropolitan Trauma Service

Body region	Year	Patients	Percentage of all injuries					
			AIS 1 %	AIS 2 %	AIS 3 %	AIS 4 %	AIS 5 %	AIS 6 %
Head or neck	Year 1	213	0	40.1	28.7	27.8	3.4	0
	Year 2	185	0	21.1	47.0	20.5	11.4	0
Face	Year 1	40	45.0	52.5	2.5	0	0	0
	Year 2	47	27.6	63.8	6.5	2.1	0	0
Chest	Year 1	192	5.7	29.2	37.5	19.8	7.8	0
	Year 2	119	7.6	25.2	36.1	22.7	7.6	0.8
Abdomen or pelvis	Year 1	125	0.8	57.6	24.0	12.8	4.8	0
	Year 2	64	7.8	45.3	31.3	10.9	4.7	0
Extremities	Year 1	145	6.2	65.5	24.1	3.5	0.7	0
	Year 2	89	4.5	50.6	37.1	6.7	1.1	0
External	Year 1	101	81.2	15.9	2.0	0	0.9	0
	Year 2	108	92.6	6.5	0.9	0	0	0

Note: year 1 = July 2001 to June 2002 (total patients = 816); year 2 = July 2002 to June 2003 (total patients = 612).

Note: three injuries in year 1 and four injuries in year 2 could not have their AIS values determined.

Table 18 Distribution of AIS scores for all injuries in major trauma patients receiving definitive treatment at a Regional Trauma Service

Body region	Year	Patients	Percentage of all injuries					
			AIS 1 %	AIS 2 %	AIS 3 %	AIS 4 %	AIS 5 %	AIS 6 %
Head or neck	Year 1	39	0	20.5	41.0	30.8	7.7	0
	Year 2	24	0	29.2	16.6	25.0	29.2	0
Face	Year 1	9	22.2	77.8	0	0	0	0
	Year 2	14	42.8	57.2	0	0	0	0
Chest	Year 1	56	12.5	23.2	41.1	23.2	0	0
	Year 2	69	4.3	14.5	37.7	37.7	5.8	0
Abdomen or pelvis	Year 1	33	3.0	39.4	36.4	18.2	3.0	0
	Year 2	25	4.0	40.0	16.0	28.0	0	0
Extremities	Year 1	52	3.8	65.5	26.9	3.8	0	0
	Year 2	67	8.9	59.7	29.9	0	1.5	0
External	Year 1	39	82.1	15.4	2.5	0	0	0
	Year 2	46	89.1	10.9	0	0	0	0

Note: year 1 = July 2001 to June 2002 (total patients = 228); year 2 = July 2002 to June 2003 (total patients = 245).

Table 19 Distribution of AIS scores for all injuries in major trauma patients receiving definitive treatment at an Urgent Care Service

Body region	Year	Patients	Percentage of all injuries					
			AIS 1 %	AIS 2 %	AIS 3 %	AIS 4 %	AIS 5 %	AIS 6 %
Head or neck	Year 1	15	0	20.0	20.0	33.3	6.7	0
	Year 2	*	0	0	100	0	0	0
Face	Year 1	*	0	100	0	0	0	0
	Year 2	*	50.0	50.0	0	0	0	0
Chest	Year 1	9	11.1	33.3	44.5	11.1	0	0
	Year 2	*	25.0	0	0	75.0	0	0
Abdomen or pelvis	Year 1	6	0	0	83.3	16.7	0	0
	Year 2	6	16.7	33.3	50.0	0	0	0
Extremities	Year 1	*	0	50.0	50.0	0	0	0
	Year 2	*	0	100	0	0	0	0
External	Year 1	11	81.8	9.1	9.1	0	0	0
	Year 2	*	100	0	0	0	0	0

Note: year 1 = July 2001 to June 2002 (total patients = 44); year 2 = July 2002 to June 2003 (total patients = 23).

Note: * indicates five or fewer patients.

Table 20 Distribution of maximum AIS scores for each major trauma patient receiving definitive treatment at a Major Trauma Service

Body region	Year	Patients	Percentage of all injuries					
			AIS 1 %	AIS 2 %	AIS 3 %	AIS 4 %	AIS 5 %	AIS 6 %
Head or neck	Year 1	607	0	3.7	22.2	44.3	29.3	0.5
	Year 2	590	*	2.8	26.3	44.6	26.1	0.2
Face	Year 1	13	7.7	7.7	84.6	0	0	0
	Year 2	10	20.0	30.0	40.0	10	0	0
Chest	Year 1	272	0.4	2.9	32.4	42.3	20.2	1.8
	Year 2	270	0	4.9	35.2	39.6	19.6	0.7
Abdomen or pelvis	Year 1	78	5.1	12.8	29.5	38.5	14.1	0
	Year 2	85	2.3	11.8	42.4	32.9	10.6	0
Extremities	Year 1	92	0	12.0	64.1	18.5	5.4	0
	Year 2	100	1.0	6.0	70.0	22.0	1.0	0
External	Year 1	27	14.8	3.7	3.7	22.3	44.4	11.1
	Year 2	53	11.4	2.0	16.9	41.5	26.4	1.8

Note: year 1 = July 2001 to June 2002 (total patients = 1089); year 2 = July 2002 to June 2003 (total patients = 1108).

Table 21 Distribution of maximum AIS scores for each major trauma patient receiving definitive treatment at a Metropolitan Trauma Service

Body region	Year	Patients	Percentage of all injuries					
			AIS 1 %	AIS 2 %	AIS 3 %	AIS 4 %	AIS 5 %	AIS 6 %
Head or neck	Year 1	72	0	5.5	18.1	66.7	9.7	0
	Year 2	63	0	3.2	31.7	38.1	27.0	0
Face	Year 1	*	0	100	0	0	0	0
	Year 2	*	0	100	66.7	33.3	0	0
Chest	Year 1	62	0	1.6	35.5	41.9	21.0	0
	Year 2	43	0	0	39.5	39.5	18.7	2.3
Abdomen or pelvis	Year 1	26	0	11.6	34.6	34.6	19.2	0
	Year 2	25	4.0	28.0	32.0	24.0	12.0	0
Extremities	Year 1	20	0	25.0	50.0	25.0	0	0
	Year 2	14	0	21.4	42.9	28.6	7.1	0
External	Year 1	*	50.0	0	25.0	0	25.0	0
	Year 2	0	0	0	0	0	0	0

Note: year 1 = July 2001 to June 2002 (total patients = 185); year 2 = July 2002 to June 2003 (total patients = 148).

Note: * indicates five or fewer patients.

Table 22 Distribution of maximum AIS scores for each major trauma patient receiving definitive treatment at a Regional Trauma Service

Body region	Year	Patients	Percentage of all injuries					
			AIS 1 %	AIS 2 %	AIS 3 %	AIS 4 %	AIS 5 %	AIS 6 %
Head or neck	Year 1	23	0	8.7	30.4	47.8	13.1	0
	Year 2	14	0	7.1	14.3	35.7	42.9	0
Face	Year 1	1	0	100	0	0	0	0
	Year 2	2	0	100	0	0	0	0
Chest	Year 1	25	0	0	52.0	48.0	0	0
	Year 2	44	0	2.3	34.1	54.5	9.1	0
Abdomen or pelvis	Year 1	13	0	0	46.2	46.2	7.6	0
	Year 2	14	7.1	14.3	7.1	50.0	21.5	0
Extremities	Year 1	6	0	0	66.7	33.3	0	0
	Year 2	7	0	0	85.7	0	14.3	0
External	Year 1	0	0	0	0	0	0	0
	Year 2	1	0	100	0	0	0	0

Note: year 1 = July 2001 to June 2002 (total patients = 68); year 2 = July 2002 to June 2003 (total patients = 82).

Table 23 Distribution of maximum AIS scores for each major trauma patient receiving definitive treatment at an Urgent Care Service

Body region	Year	Patients	Percentage of all injuries					
			AIS 1 %	AIS 2 %	AIS 3 %	AIS 4 %	AIS 5 %	AIS 6 %
Head or neck	Year 1	10	0	10.0	10.0	40.0	10.0	30.0
	Year 2	*	0	0	100	0	0	0
Face	Year 1	0	0	0	0	0	0	0
	Year 2	0	0	0	0	0	0	0
Chest	Year 1	7	14.3	0	14.3	57.1	14.3	0
	Year 2	*	0	0	0	100	0	0
Abdomen or pelvis	Year 1	*	0	0	50.0	50.0	0	0
	Year 2	*	0	0	100	0	0	0
Extremities	Year 1	0	0	0	0	0	0	0
	Year 2	*	0	100	0	0	0	0
External	Year 1	*	0	0	0	0	100	0
	Year 2	0	0	0	0	0	0	0

Note: year 1 = July 2001 to June 2002 (total patients = 20);
year 2 = July 2002 to June 2003 (total patients = 9).

Note: * indicates five or fewer patients.

Table 24 Injury Severity Score for all major trauma patients

Trauma service level	Year	Patients	%	Median (range)	Inter-quartile range
Major Trauma Service	Year 1	1091	79.8	24 (1-75)	16-29
	Year 2	1117	82.5	22 (1-75)	16-26
Metropolitan Trauma Service	Year 1	188	13.8	20 (1-59)	16-25
	Year 2	147	10.9	19 (1-75)	14-25
Metropolitan Primary Care Service	Year 1	0	0.0	-	-
	Year 2	0	0.0	-	-
Regional Trauma Service	Year 1	68	5.0	18 (4-34)	16-20
	Year 2	81	6.0	18 (1-45)	14-21
Urgent Care Service	Year 1	20	1.5	26 (1-75)	16-25
	Year 2	9	0.6	12 (4-20)	9-16
Regional Primary Care Service	Year 1	0	0.0	-	-
	Year 2	0	0.0	-	-
Total	Year 1	1367	100.0	20 (1-75)	16-27
	Year 2	1354	100.0	20 (1-75)	16-26

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: 17 patients have missing ISS values in year 1; 25 patients have missing ISS values in year 2.

Revised Trauma Score

Table 25 Revised Trauma Score (weighted) for all major trauma patients

Trauma service level	Year	Patients	Median	Range
Major Trauma Service	Year 1	1580	7.1	0.6–7.8
	Year 2	1674	7.2	1.2–7.8
Metropolitan Trauma Service	Year 1	558	7.6	0.3–7.8
	Year 2	486	7.7	3.8–7.8
Metropolitan Primary Care Service	Year 1	5	7.6	7.1–7.8
	Year 2	1	7.8	7.8–7.8
Regional Trauma Service	Year 1	272	7.8	5.0–7.8
	Year 2	288	7.6	2.0–7.8
Urgent Care Service	Year 1	53	7.5	2.3–7.8
	Year 2	35	7.3	1.5–7.8
Regional Primary Care Service	Year 1	0	-	-
	Year 2	0	-	-
Total	Year 1	2468	7.3	0.3–7.8
	Year 2	2484	7.3	1.2–7.8

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: 1084 patients have no Revised Trauma Score in year 1; 1105 patients have no Revised Trauma Score in year 2.

Pre-hospital care and quality indicators

Additional tables in this section summarise the pre-hospital phase data. The number of patients for which all episode of care information was available in the VSTORM database limits the number of cases presented in this section.

Pre-hospital transit times

Table 26 Total pre-hospital time (in minutes) between receipt of the ambulance call and the time of arrival at first receiving hospital according to type of ambulance service—non entrapped patients

Ambulance service	Year	Patients	Missing entrapment	Median (range)	IQ range	% > 1 hour
MAS	Year 1	525	29	42 (0–695)	32–53	10.3
	Year 2	477	24	47 (3–233)	36–58	17.8
RAV	Year 1	186	7	45 (17–775)	30–82	20.4
	Year 2	187	2	41 (5–162)	28–67	13.9
AAV	Year 1	183	4	87 (12–362)	65–134	16.9
	Year 2	151	6	88 (49–351)	76–139	36.4
Total	Year 1	894	40	44 (0–775)	32–58	13.8
	Year 2	815	32	50 (3–351)	36–67	20.4

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 27 Total pre-hospital time (in minutes) between receipt of the ambulance call until time of arrival at first receiving hospital according to type of ambulance service—entrapped patients

Ambulance service	Year	Patients	Missing entrapment	Median (range)	IQ range	% > 1 hour
MAS	Year 1	73	29	48 (11–95)	3–59	17.8
	Year 2	53	24	56 (21–97)	45–68	28.3
RAV	Year 1	36	7	52 (19–356)	45–91	19.4
	Year 2	34	2	80 (16–129)	38–103	41.2
AAV	Year 1	121	4	85 (58–312)	75–110	24.0
	Year 2	90	6	114 (70–254)	86–148	24.4
Total	Year 1	230	40	58 (11–356)	44–84	49
	Year 2	177	32	71 (16–254)	49–93	51

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Quality assurance indicators

Table 28 Median time at scene (in minutes)

Ambulance Service			Patients	Median	Range	Inter-quartile range
MAS	Entrapped	Year 1	73	20.0	7-68	16-34
		Year 2	53	28.0	7-145	16-35
	Non-entrapped	Year 1	525	14.0	2-663	11-21
		Year 2	477	16.0	0-82	12-22
RAV	Entrapped	Year 1	36	32.0	0-287	22-51
		Year 2	34	33.0	15-73	21-51
	Non-entrapped	Year 1	186	16.0	0-191	12-25
		Year 2	187	19.5	2-158	13-28
AAV	Entrapped	Year 1	121	61.5	21-337	51-78
		Year 2	90	55.5	15-96	27-84
	Non-entrapped	Year 1	183	41.5	6-467	24-77
		Year 2	151	32.0	10-120	26-49
Total	Entrapped	Year 1	230	34	0-337	19-54
		Year 2	177	30	7-145	20-41
	Non-entrapped	Year 1	894	15	0-663	11-24
		Year 2	815	17	0-158	12-25

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 29 Number of patients with a time at scene of more than 20 minutes (non-entrapment patients with blunt injuries only)

Ambulance Service	Year	Number of non-entrapment blunt injury cases	Number of		% of cases with a time at scene of > 20 minutes
			blunt injury cases with missing entrapment status	Number of cases with a time at scene available	
MAS	Year 1	464	29	362	29.6
	Year 2	403	24	321	33.3
RAV	Year 1	165	7	94	42.6
	Year 2	172	2	106	51.9
AAV	Year 1	170	4	42	81.0
	Year 2	128	6	19	89.5
Total	Year 1	799	40	498	36.3
	Year 2	703	32	446	40.1

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 30 Number of patients with a time at scene of more than 10 minutes (non-entrapment patients with penetrating injuries and systolic blood pressure < 100 mm/Hg only)

Ambulance Service	Year	Number of non-entrapped penetrating injury cases	Number of penetrating injury cases with missing entrapment status	Number of non-entrapped penetrating injury cases with BP<100 mmHg on arrival at scene	Number of these cases with time at scene available	Number of these cases with scene time >10 minutes
MAS	Year 1	41	0	13	10	8
	Year 2	53	0	19	19	10
RAV	Year 1	14	0	7	6	4
	Year 2	9	0	4	3	3
AAV	Year 1	9	0	2	0	0
	Year 2	16	0	6	3	2
Total	Year 1	64	0	22	16	12
	Year 2	78	0	29	25	15

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 31 Number of patients with a Glasgow Coma Score < 9 at scene and no endotracheal tube administered at scene

Ambulance Service	Year	Patients	GCS available	Number of patient with a GCS < 9	Number of patients with a GCS < 9 and no endotracheal tube administered at scene
MAS	Year 1	627	604	122	74
	Year 2	554	540	95	61
RAV	Year 1	229	210	44	33
	Year 2	223	203	44	26
AAV	Year 1	308	279	85	9
	Year 2	247	238	76	14
Total	Year 1	1164	1093	251	116
	Year 2	1024	981	215	101

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 32 Number of head injured patients with Glasgow Coma Score < 9 and an O₂ saturation < 90 per cent

Ambulance Service	Year	Number of head injured cases	Number of head injured with GCS available	Number of head injured cases with a GCS < 9	Number of head injured with O ₂ sat available	Number of head injured cases with GCS < 9 and O ₂ sat available	Number of these cases with a systolic O ₂ sat <90% after 10 minutes at scene
MAS	Year 1	286	272	93	27	17	4
	Year 2	254	245	66	72	33	6
RAV	Year 1	104	94	35	25	11	4
	Year 2	87	77	27	23	12	1
AAV	Year 1	161	147	75	16	11	4
	Year 2	109	107	64	85	51	7
Other	Year 1	62	14	4	2	0	0
	Year 2	61	20	6	3	0	0
Missing	Year 1	23	5	3	2	2	1
	Year 2	7	3	0	0	0	0
Total	Year 1	636	532	210	72	41	13
	Year 2	518	452	163	183	96	14

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 33 Number of head injured patients with Glasgow Coma Score < 9 with a systolic blood pressure of less than 100 mmHg after 10 minutes at scene

Ambulance Service	Year	Number of head injured cases	Number of head injured with GCS available	Number of head injured cases with a GCS < 9	Number of head injured with BP available	Number of head injured cases with GCS < 9 and BP available	Number of these cases with a systolic BP < 100 mmHg after 10 minutes at scene
MAS	Year 1	286	272	93	128	51	16
	Year 2	254	245	66	191	56	20
RAV	Year 1	104	94	35	55	17	5
	Year 2	87	77	3527	46	19	4
AAV	Year 1	161	147	75	53	42	13
	Year 2	109	107	64	93	58	12
Other	Year 1	62	14	4	3	1	0
	Year 2	61	20	6	9	2	0
Missing	Year 1	23	5	3	1	2	1
	Year 2	7	3	0	0	0	0
Total	Year 1	636	532	210	240	113	35
	Year 2	518	452	163	339	135	36

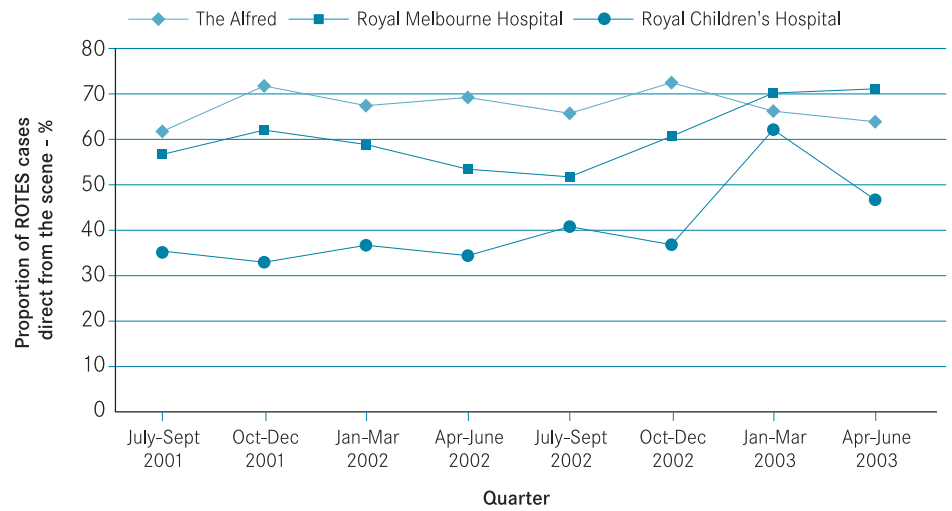
Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Transit and transfer information and system performance

Additional tables in this section summarise the transit and transfer phase data. Data presenting the trauma service level of the patient’s first hospital of care and hospital providing their definitive treatment are for transfer cases with full information available.

Direct admissions to Major Trauma Services

Figure 13 Trends in the proportion of all direct-from-scene admissions to each Major Trauma Service hospital



Mode of Transport

Table 34 Transport mode of arrival for major trauma

Trauma service level	Source	Year	Patients	Mode of Transport				Not documented /missing %	Total %
				MAS %	RAV %	Air %	Other %		
To a Major Trauma Service									
	Direct	Year 1	668	51.3	0.9	38.6	7.0	2.2	100.0
		Year 2	725	50.8	1.0	30.5	5.9	11.8	100.0
	Referral	Year 1	431	32.9	32.5	10.0	18.3	6.3	100.0
		Year 2	401	20.4	33.4	5.0	16.5	24.7	100.0
To a Metropolitan Trauma Service									
	Direct	Year 1	146	84.9	3.4	-	8.2	3.5	100.0
		Year 2	106	84.9	0.9	-	0.9	13.3	100.0
	Referral	Year 1	44	38.6	25.0	13.6	9.1	13.7	100.0
		Year 2	46	30.4	17.4	6.5	6.5	39.2	100.0
To a Regional Trauma Service									
	Direct	Year 1	52	-	82.7	1.9	7.7	7.7	100.0
		Year 2	74	-	75.7	4.1	8.1	12.1	100.0
	Referral	Year 1	19	-	36.8	-	36.8	26.4	100.0
		Year 2	12	-	58.3	-	-	41.7	100.0
To an Urgent Care Service									
	Direct	Year 1	21	-	85.7	-	-	14.3	100.0
		Year 2	14	-	71.4	-	21.4	7.2	100.0
	Referral	Year 1	*	-	-	-	-	100.0	100.0
		Year 2	*	-	100.0	-	-	-	100.0

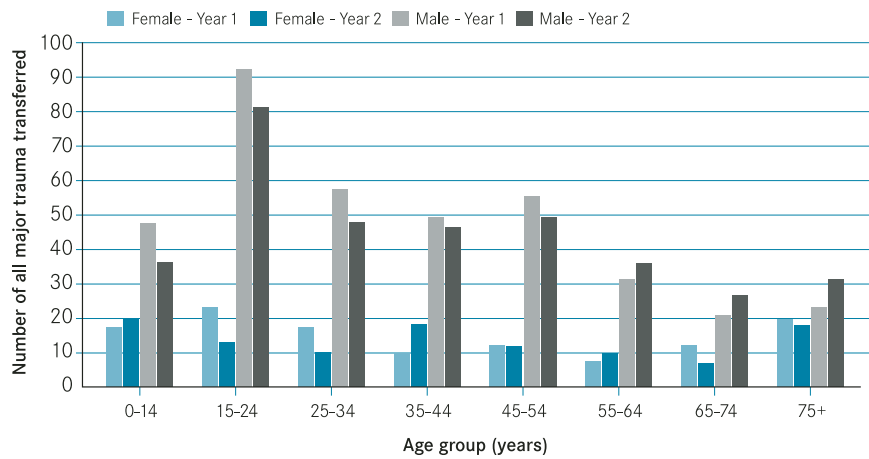
Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: * indicates five or fewer patients.

Note: Information of source was missing for two patients in year 1.

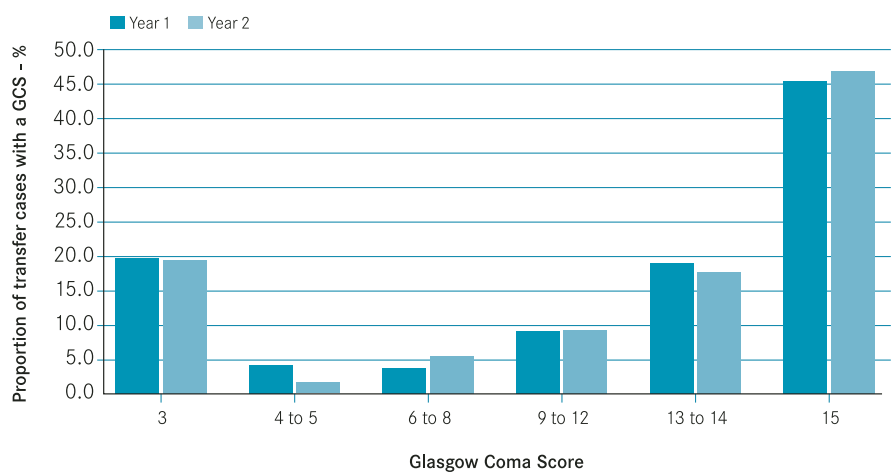
Transfers across the system

Figure 14 Overall gender and age distribution for all major trauma first transfers only



Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Figure 15 The Glasgow Coma Score in major trauma patients on arrival in an emergency department at a receiving hospital



Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: Excludes patients with no GCS recorded (patients = 11) in year 1 and (patients = 13) in year 2.

Table 35 Distribution of the Glasgow Coma Score for all referred major trauma patients on arrival at an emergency department

Trauma Service Level	Year	GCS of 3	GCS of 4-5	GCS of 6-8	GCS of 9-12	GCS of 13-14	GCS of 15	Illegitimate GCS	GCS not recorded
Major Trauma Service									
	Year 1	90	18	17	42	81	177	97	6
	Year 2	81	6	24	42	68	178	89	7
Metropolitan Trauma Service									
	Year 1	5	1	-	1	8	30	4	-
	Year 2	6	-	3	2	8	22	12	5
Metropolitan Primary Care Service									
	Year 1	-	-	-	-	-	-	-	-
	Year 2	-	-	-	-	-	-	-	-
Regional Trauma Service									
	Year 1	-	-	-	1	2	11	3	5
	Year 2	-	-	-	-	2	9	-	1
Urgent Care Service									
	Year 1	-	-	-	-	-	1	-	-
	Year 2	-	-	-	-	-	-	-	-
Regional Primary Care Service									
	Year 1	-	-	-	-	-	-	-	-
	Year 2	-	-	-	-	-	-	-	-

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 36 Origin of transfers to the Major Trauma Services

Origin of transfer	% to the Alfred Hospital		% to the Royal Melbourne Hospital		% to the Royal Children's Hospital	
	Year 1 (patients = 236)	Year 2 (patients = 228)	Year 1 (patients = 120)	Year 2 (patients = 104)	Year 1 (patients = 73)	Year 2 (patients = 61)
Major Trauma Service	0.8	0.4	0.8	3.8	2.7	-
Metropolitan Trauma Service	34.7	29.4	41.7	38.5	32.9	26.2
Metropolitan Primary Care Service	5.9	5.3	9.2	6.7	17.8	8.2
Regional Trauma Service	28.8	34.6	24.2	38.5	23.3	32.8
Urgent Care Service	21.6	22.8	14.2	8.7	17.8	16.4
Regional Primary Care Service	1.7	2.6	1.7	-	-	3.3
Other	6.5	4.9	8.2	3.8	5.5	13.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: the 'other' refers to a hospital or health service that is not part of Victoria's trauma system. These include interstate and overseas hospitals, rehabilitation centres, Royal Dental Hospital, Royal Women's Hospital etc.

Specialist transfers

Table 37 Injury severity and probability of survival for paediatric patients (< 16 years) transferred (first treating hospital)

Trauma service level	Year	ISS level	Number	TRISS probability of survival	
				< 50%	> 50%
Major Trauma Service	Year 1	> 15	2	-	2
		† 15	1	-	1
	Year 2	‡ 15	-	-	-
		† 15	-	-	-
Metropolitan Trauma Service	Year 1	> 15	6	-	6
		† 15	2	-	2
	Year 2	> 15	4	-	4
		† 15	-	-	-
Metropolitan Primary Care Service	Year 1	> 15	1	-	1
		† 15	-	-	-
	Year 2	> 15	-	-	-
		† 15	-	-	-
Regional Trauma Service	Year 1	> 15	6	-	6
		† 15	1	-	1
	Year 2	> 15	7	-	7
		† 15	2	-	2
Urgent Care Service	Year 1	> 15	6	-	6
		† 15	-	-	-
	Year 2	> 15	4	1	3
		† 15	3	1	2
Regional Primary Care Service	Year 1	> 15	-	-	-
		† 15	-	-	-
	Year 2	> 15	1	-	1
		† 15	-	-	-

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 38 Transfer of head injured trauma patients

First hospital of care	Definitive hospital of care												
	MTS		MeTS		MPCS		RTS		UCS		PCS		
	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	
MTS	-	4	4	4	-	-	-	-	-	-	-	-	-
MeTS	99	71	4	10	-	-	-	-	-	-	-	-	-
MPCS	18	13	-	1	-	-	-	-	-	-	-	-	-
RTS	77	85	2	-	-	-	-	-	-	-	-	-	-
UCS	45	28	2	4	-	-	6	-	1	-	-	-	-
PCS	3	2	-	-	-	-	-	-	-	-	-	-	-

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

Note: In year 1, total patients = 261; in year 2, total patients = 222.

Table 39 Transfer of spinal cord trauma patients

First hospital of care	Definitive hospital of care												
	MTS		MeTS		MPCS		RTS		UCS		PCS		
	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	
MTS	-	-	10	7	-	-	-	-	-	-	-	-	-
MeTS	7	4	6	3	-	-	-	-	-	-	-	-	-
MPCS	1	-	-	-	-	-	-	-	-	-	-	-	-
RTS	5	5	4	1	-	-	-	-	-	-	-	-	-
UCS	3	3	-	-	-	-	-	-	-	-	-	-	-
PCS	1	-	-	-	-	-	-	-	-	-	-	-	-

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

Note: In year 1, total patients = 37; in year 2, total patients = 23.

Table 40 Transfer of spinal cord trauma patients with head injuries

First hospital of care	Definitive hospital of care												
	MTS		MeTS		MPCS		RTS		UCS		PCS		
	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	
MTS	-	-	1	2	-	-	-	-	-	-	-	-	-
MeTS	3	-	-	2	-	-	-	-	-	-	-	-	-
MPCS	-	-	-	-	-	-	-	-	-	-	-	-	-
RTS	3	-	1	-	-	-	-	-	-	-	-	-	-
UCS	1	1	-	-	-	-	-	-	-	-	-	-	-
PCS	1	-	-	-	-	-	-	-	-	-	-	-	-

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

Note: In year 1, total patients = 10; in year 2, total patients = 5.

Hospital systems performance

Emergency department quality indicators

Table 41 Number of major trauma patients with a Glasgow Coma Score of < 9 at emergency presentation who were not intubated in an emergency department

Trauma service level	Year	Patients with GCS < 9	Patients with legitimate GCS < 9	Number of patients with legitimate GCS < 9 not intubated
Major Trauma Service	Year 1	319	102	5
	Year 2	308	84	-
Metropolitan Trauma Service	Year 1	30	14	1
	Year 2	21	8	1
Metropolitan Primary Care Service	Year 1	-	-	-
	Year 2	-	-	-
Regional Trauma Service	Year 1	2	12	
	Year 2	14	8	1
Urgent Care Service	Year 1	8	4	0
	Year 2	4	4	1
Regional Primary Care Service	Year 1	-	-	-
	Year 2	-	-	-
Total	Year 1	359	121	8
	Year 2	347	104	3

Note: Y1 = year 1 (July 2001 to June 2002); Y2 = year 2 (July 2002 to June 2003).

Note: legitimate GCS means without intervention, such as intubation and sedation.

The length of time from arrival at an emergency department until a CT head scan was performed for head injured patients exceeded two hours in the following:

- 91 patients (27.7 per cent) treated at the Major Trauma Services. The median time for these 91 patients was 6.9 hours, with a range of 2.0 to 21.6 hours.
- 19 patients (35.2 per cent) treated at a Metropolitan Trauma Service had a delay until a CT head scan of > 2 hours, with a median time delay of 6.0 hours, and a range of 2.1 to 24.0 hours.
- one patient (50.0 per cent) receiving treatment at a Metropolitan Primary Care Service did not receive a CT head scan until after two hours after admission, with a [median?] time delay of 3.5 hours.
- 12 patients (21.8%) at a Regional Trauma Service had a delay until a CT head scan of > 2 hours, with a median time delay of 7.9 hours, and a range of 2.1 to 19.0 hours.
- no patients at an Urgent Care Service had a delay of > 2 hours for a CT head scan.

Outcome measures

This section describes the outcomes associated with each trauma patient. Measures include the amount of time patients spent in the trauma system and injury severity measures at discharge. Unless otherwise stated, the data presented in this section relates to the hospital that provided definitive treatment.

Length of stay

Table 42 Length of stay (hours) in a trauma service prior to transfer to a Major Trauma Service

Trauma service level	Year	ISS level	Patients	Median (range)	IQ range
Major Trauma Service	Year 1	> 15	*	*	*
		† 15	*	*	*
	Year 2	> 15	*	*	*
		† 15	0	-	-
Metropolitan Trauma Service	Year 1	> 15	57	4.6 (1-35)	3-6
		† 15	12	4.1 (1-97)	3-11
	Year 2	> 15	48	4.0 (1-509)	2-6
		† 15	8	4.6 (2-11)	4-6
Metropolitan Primary Care Service	Year 1	> 15	13	3.9 (1-25)	3-7
		† 15	7	3.7 (1-9)	3-5
	Year 2	> 15	3	4.4 (2-6)	3-5
		† 15	0	-	-
Regional Trauma Service	Year 1	> 15	58	4.4 (1-223)	3-8
		† 15	7	6.3 (1-10)	4-7
	Year 2	> 15	75	4.4 (1-31)	3-6
		† 15	16	6.2 (1-63)	3-8
Urgent Care Service	Year 1	> 15	45	3.1 (1-117)	2-6
		† 15	7	8.0 (2-20)	4-14
	Year 2	> 15	40	2.9 (1-13)	2-4
		† 15	9	3.3 (1-188)	2-5
Regional Primary Care Service	Year 1	> 15	6	7.6 (1-19)	2-16
		† 15	0	-	-
	Year 2	> 15	4	2.0 (1-74)	2-20
		† 15	0	-	-
Total	Year 1	> 15	182	4.3 (1-223)	3-7
		† 15	34	4.5 (1-35)	3-8
	Year 2	> 15	172	3.8 (1 - 509)	2-6
		† 15	33	5.1 (1 - 188)	3-7

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: * indicates five or fewer patients.

Note: data was missing from 282 transfer patients in year 1 and from 261 transfer patients in year 2. This was mainly due to missing data on time of arrival at first hospital of care.

Table 43 Length of stay (days) at definitive treating hospital

Trauma service level	Year	ISS level	Patients	Median (range)	IQ range
Major Trauma Service	Year 1	> 15	901	9.4 (1-128)	4-15
		< 15	182	8.6 (1-158)	5-18
	Year 2	> 15	923	10.0 (1-504)	5-14
		< 15	197	8.4 (1-95)	5-20
Metropolitan Trauma Service	Year 1	> 15	141	8.8 (1-114)	5-18
		< 15	35	8.9 (1-26)	6-16
	Year 2	> 15	119	7.5 (1-237)	4-13
		< 15	40	6.8 (1-80)	4-11
Metropolitan primary care Servic	Year 1	> 15	0	-	-
		< 15	0	-	-
	Year 2	> 15	0	-	-
		< 15	0	-	-
Regional Trauma Service	Year 1	> 15	64	6.5 (1-53)	4-11
		< 15	10	8.6 (4-26)	6-13
	Year 2	> 15	62	7.5 (1-49)	4-13
		< 15	21	6.4 (1-34)	4-11
Urgent Care Service	Year 1	> 15	15	8.1 (1-37)	1-10
		< 15	*	*	*
	Year 2	> 15	8	3.7 (1-49)	1-5
		< 15	*	*	*
Regional Primary Care Service	Year 1	> 15	0	-	-
		< 15	0	-	-
	Year 2	> 15	0	-	-
		< 15	0	-	-
Total	Year 1	> 15	1121	9.0 (1-158)	4-18
		< 15	230	8.6 (1-128)	5-15
	Year 2	> 15	1112	9.3 (1-504)	5-19
		< 15	262	7.8 (1-95)	5-13

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: * indicates five or fewer patients.

Note: data is missing for length of stay for 34 cases in year 1 and 19 cases in year 2 (based on data obtained from the VSTORM database on 20 May 2004).

Table 44 Injury severity in patients admitted to an intensive care unit at a definitive treating hospital

Trauma service level		ICU length of stay (days)			ISS		
		Patients	Median	Range	N	Median	Range
Major Trauma Service	Year 1	601	8	(1-59)	598	26	(1-75)
	Year 2	577	7	(1-64)	572	24	(1-75)
Metropolitan Trauma Service	Year 1	92	7	(1-60)	91	21	(1-57)
	Year 2	51	11	(1-105)	50	23	(1-45)
Metropolitan Primary Care Service	Year 1	0	-	-	0	-	-
	Year 2	0	-	-	0	-	-
Regional Trauma Service	Year 1	32	4	(1-26)	32	19	(4-34)
	Year 2	46	6	(1-37)	46	18	(1-37)
Urgent Care Service	Year 1	7	3	(1-7)	7	16	(8-22)
	Year 2	0	-	-	0	-	-
Regional Primary Care Service	Year 1	0	-	-	0	-	-
	Year 2	0	-	-	0	-	-
Total	Year 1	732	7	(1-60)	728	25	(1-75)
	Year 2	674	8	(1-105)	686	24	(1-75)

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: this table excludes cases admitted to an ICU for which the length of ICU stay was unknown, and those who were not admitted to an ICU.

Neurological status at discharge

Table 45 Number of all major trauma patients with a Glasgow Coma Score > 9 on discharge from service providing definitive treatment

Trauma service level	Year	Total patients with a known discharge (excluding deaths) and a known discharge GCS	Patients with GCS > 9 on discharge	Patients %	Missing discharge GCS
Major Trauma Service	Year 1	253	204	80.6	683
	Year 2	225	216	96.0	775
Metropolitan Trauma Service	Year 1	88	88	100.0	79
	Year 2	83	81	97.6	52
Metropolitan Primary Care Service	Year 1	-	-	-	-
	Year 2	-	-	-	-
Regional Trauma Service	Year 1	20	20	100.0	46
	Year 2	23	23	100.0	39
Urgent Care Service	Year 1	2	2	100.0	9
	Year 2	3	3	100.0	4
Total	Year 1	363	314	76.3	817
	Year 2	334	323	96.7	870

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Functionality status at discharge

Table 46 Modified functional measure for all major trauma patients on discharge from service providing definitive treatment

Trauma service level	Year	Patients	Median FM	Range FM	% of cases with FM of 3-6	% of cases with FM of 7-9	% of cases with FM of 10-11	% of cases with FM of 12
Major Trauma Service								
	Year 1	93	11	(3 - 12)	3.2	7.5	18.3	71.0
	Year 2	184	10	(3 - 12)	8.2	15.8	20.1	55.9
Metropolitan Trauma Service								
	Year 1	130	11	(4 - 12)	0.8	7.7	46.9	44.6
	Year 2	94	11	(3 - 12)	5.3	10.6	29.8	54.3
Regional Trauma Service								
	Year 1	53	11	(3 - 12)	5.7	5.7	30.2	58.4
	Year 2	25	11	(7 - 12)	-	12.0	28.0	60.0
Urgent Care Service								
	Year 1	11	11	(9 - 12)	-	18.2	27.3	54.5
	Year 2	3	11	(11 - 12)	-	-	66.7	33.3
Total	Year 1	287	11	(3 - 12)	2.5	7.7	33.8	56.0
	Year 2	306	11	(3 - 12)	6.5	13.7	24.2	55.6

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: data is missing for 894 (75.7 per cent) of known alive patients at discharge in year 1 (patients = 1181) and 898 (74.6 per cent) of known alive patients at discharge in year 2 (patients = 1204).

Survival status

Table 47 Survival outcomes for all major trauma patients (definitive treating hospital only)

Trauma service level	Year	ISS level	Number of deaths	% who died	Number of survivors	% who survived
Major Trauma Service	Year 1	> 15	138	15.1	777	84.9
		† 15	19	10.6	160	89.4
	Year 2	> 15	96	10.7	805	89.3
		† 15	25	11.6	191	88.4
Metropolitan Trauma Service	Year 1	> 15	17	11.6	130	88.4
		†15	6	14.0	37	86.0
	Year 2	> 15	8	7.3	101	92.7
		†15	7	18.4	31	81.6
Metropolitan Primary Care Service	Year 1	> 15	0	-	0	-
		†15	0	-	0	-
	Year 2	> 15	0	-	0	-
		†15	0	-	0	-
Regional Trauma Service	Year 1	> 15	0	0	58	100.0
		†15	3	30.0	7	70.0
	Year 2	> 15	13	22.0	46	78.0
		† 15	7	31.8	15	68.2
Urgent Care Service	Year 1	> 15	8	47.1	9	52.9
		† 15	1	33.3	2	66.7
	Year 2	> 15	0	0	4	100.0
		† 15	2	40.0	3	60.0
Regional Primary Care Service	Year 1	> 15	0	-	0	-
		† 15	0	-	0	-
	Year 2	> 15	0	-	0	-
		† 15	0	-	0	-

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: 11 deaths in year 1 and 17 deaths in year 2 had missing ISS figures.

Deaths

Table 48 Deaths according to TRISS predicted probability of survival

Trauma service level	Year	ISS level	Total deaths		Deaths for patients with a predicted probability of survival of:							
			Total deaths	with a TRISS	< 25 %		> 25 %		> 50 %		> 75 %	
					n	%	n	%	n	%	n	%
Major Trauma Service												
	Year 1	> 15	142	119	52	43.7	19	16.0	20	16.8	28	23.5
		† 15	19	17	1	5.9	2	11.8	1	5.9	13	76.4
	Year 2	> 15	98	80	22	27.5	14	17.5	21	26.3	23	28.7
		† 15	25	16	1	6.3	1	6.3	-	-	14	87.4
Metropolitan Trauma Service												
	Year 1	> 15	17	14	4	28.6	2	14.2	4	28.6	4	28.6
		† 15	6	5	-	-	-	-	-	-	5	100.0
	Year 2	> 15	8	5	-	-	1	20.0	2	40.0	2	40.0
		† 15	8	7	-	-	-	-	-	-	7	100.0
Metropolitan Primary Care Service												
	Year 1	> 15	-	-	-	-	-	-	-	-	-	-
		† 15	-	-	-	-	-	-	-	-	-	-
	Year 2	> 15	-	-	-	-	-	-	-	-	-	-
		† 15	-	-	-	-	-	-	-	-	-	-
Regional Trauma Service												
	Year 1	> 15	-	-	-	-	-	-	-	-	-	-
		† 15	3	3	-	-	-	-	-	-	3	100.0
	Year 2	> 15	13	13	3	23.0	5	38.5	-	-	5	38.5
		† 15	7	6	-	-	-	-	-	-	6	100.0
Urgent Care Service												
	Year 1	> 15	8	4	2	50.0	-	-	-	-	2	50.0
		† 15	1	1	-	-	-	-	-	-	1	100.0
	Year 2	> 15	-	-	-	-	-	-	-	-	-	-
		† 15	2	2	-	-	-	-	-	-	2	100.0
Regional Primary Care Service												
	Year 1	> 15	-	-	-	-	-	-	-	-	-	-
		† 15	-	-	-	-	-	-	-	-	-	-
	Year 2	> 15	-	-	-	-	-	-	-	-	-	-
		† 15	-	-	-	-	-	-	-	-	-	-
Total	Year 1	> 15	167	137	58	42.4	21	15.3	24	17.5	34	24.8
		† 15	29	26	1	3.8	2	7.7	1	3.8	22	84.7
	Year 2	> 15	119	98	25	25.5	20	20.4	23	23.5	30	30.6
		† 15	42	31	1	3.2	1	3.2	-	-	29	93.6

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Note: n = number of patients.

Note: TRISS was not available for seven dead patients in year 1 and 14 dead patients in year 2.

Deaths among cases not transferred

Table 49 Number of patients not transferred to a Major Trauma Service that subsequently died

Trauma service level	Year	Patients	Median		TRISS probability of survival		
			Age (year)	ISS	Total patients	<50% patients	>50% patients
Metropolitan Trauma Service							
	Year 1	-	-	-	-	-	-
	Year 2	-	-	-	-	-	-
Metropolitan Primary Care Service							
	Year 1	24	56.7	22.3	19	13	6
	Year 2	17	74.1	21.6	12	11	1
Regional Trauma Service							
	Year 1	5	61.0	20.8	3	3	-
	Year 2	24	66.0	19.8	19	11	8
Urgent Care Service							
	Year 1	11	53.0	38.6	5	3	2
	Year 2	8	54.5	6.5	2	2	-
Total							
	Year 1	40	56.3	24.8	26	18	8
	Year 2	49	64.7	19.8	33	24	9

Note: year 1 = July 2001 to June 2002 (patients = 40); year 2 = July 2002 to June 2003 (patients = 49).

Appendix A–Victorian hospitals/health services not contributing to the registry, July 2002 to June 2003

The Victorian State Trauma Registry aims to provide full coverage of all major trauma patients across all hospitals/health services that provide trauma care in this state. Before patients from any hospital or healthcare service can be included in the registry, however, full ethics committee approval is required. This has proven to be a lengthy process and a number of hospitals/health care services had not granted ethics approval in time for the first year of registry operation. The table below lists these hospitals.

Table 50 Victorian hospitals not contributing to the registry, year 2

Trauma service level	Hospital
Metropolitan Trauma Service	Box Hill Hospital
	Maroondah Hospital
Metropolitan Primary Care Service	The Angliss Health Services
	Dandenong Hospital
	South Eastern Private Hospital
Regional Trauma Service, Urgent Care Service and Primary Care Service	
Loddon Mallee	Maldon and District Health and Community Care
	Mt Alexander Hospital Castlemaine
	Pyramid Hill Bush Nursing Hospital
Gippsland	Lakes Entrance Community Health Centre
	Mt Baw Baw Medical Centre
	Wonthaggi District Hospital
Grampians	Woomelang and District Bush Nursing Centre
Hume	Albury Base Hospital
	Alexandra District Hospital

Appendix B—data usage completeness

The following figures indicate the proportion of ‘usable data’ for each data field captured on the registry used in this report. ‘Usable data’ refers to, for example, a yes or no entered for scene entrapment. ‘Usable data’ does not include missing data on the registry and data that was not documented in the source data (for example, medical records).

Table 51 TRISS components

Data field	Year 1	Year 2	Data field	Year 1	Year 2
Age	99.9%	100.0%	Type of Injury	100.0%	99.9%
ISS	99.2%	98.7%			
ED respiratory rate	78.5%	80.0%	Pre-hospital respiratory rate	89.6%	93.0%
ED systolic blood pressure	94.4%	94.7%	Pre-hospital systolic blood pressure	85.8%	91.0%
ED GCS—eye opening	91.3%	90.7%	Pre-hospital GCS—eye opening	90.7%	95.8%
ED GCS—verbal response	91.1%	90.8%	Pre-hospital GCS—verbal response	93.3%	95.9%
ED GCS—motor response	91.3%	90.7%	Pre-hospital GCS—motor response	93.4%	96.2%
ED GCS—qualifier	89.7%	89.6%	Pre-hospital GCS—qualifier	93.9%	95.5%

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 52 Injury details

Data field	Year 1	Year 2	Data field	Year 1	Year 2
Cause	100.0%	100.0%	Type	100.0%	99.9%
Location	94.6%	82.9%	Date	100.0%	100.0%
Intent	100.0%	100.0%	Time	100.0%	100.0%
Activity	78.5%	75.9%	Postcode	100.0%	100.0%
Entrapment	95.4%	95.8%			

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 53 Outcome details

Data field	Year 1	Year 2	Data field	Year 1	Year 2
Discharged	99.9%	99.5%	FM at discharge	20.8%	22.2%
Length of stay (at each hospital)	89.3%	86.5%	GCS at discharge	30.3%	25.2%

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Table 54 Ambulance pre-hospital times

Data field	Year 1	Year 2	Data field	Year 1	Year 2
Call received	95.1%	97.0%	Depart location	95.5%	96.9%
At location	95.0%	97.0%	Arrive hospital	95.8%	96.9%
At patient	94.6%	96.2%			

Note: year 1 = July 2001 to June 2002; year 2 = July 2002 to June 2003.

Glossary

Abbreviated Injury Scale (AIS)	A numerical method for ranking and comparing injuries by severity, and to standardise the terminology used to describe injuries. It is a measure of the threat to life of an injury. The scale ranges from one (minor injury) to six (maximum severity). AIS=6 and AIS=5 scores represent 'maximum severity' and 'critical' injuries respectively.
Charlson Index	<p>The Charlson Index assigns weights (0-6) to co-morbid conditions and has been used to predict mortality and morbidity in cohorts of hospitalisations.</p> <p>The Charlson index has been modified to be based on ICD-9 codes and ICD-10 codes.</p>
Coronial cases	<p>Each coronial case is assigned a case number in the coronial database. As long as a case is under investigation it is marked as “open”, which means that no identifying information is available.</p> <p>When an investigation is finished the case is marked as closed the identifying information becomes available.</p>
Functional Measure	The Functional Measure (FM) has been used to measure the degree of disability during the medical rehabilitation, discharge and follow-up of trauma patients. The FM has been adapted from the Functional Independence Measure (FIMTM) for the National Trauma Database (American College of Surgeons). The FM includes three items (self-feeding, communication and locomotion) scored using a four point ordinal scale. The use of this modified version of the FIMTM has not been validated to date.
Glasgow Coma Scale (GCS)	<p>The GCS is a measure of the level of the consciousness of a patient and is an indicator of the severity of a head injury.</p> <p>The scale ranges from 3 (unconscious) to 15 (normal functioning), with a score <9 usually indicating a severe head injury. When this variable is used for calculating trauma scores, as a default, the emergency department GCS values are used. If there is no GCS recorded at the emergency department or the patient was intubated or sedated on arrival, the patient's pre-hospital GCS value is used.</p>
Hospital of definitive care	For each patient this is defined as the hospital at the highest service level within the tiered trauma system structure where the patient was treated.

Injury Severity Score (ISS)	Used to define injury severity for comparative purposes and is a useful tool for the evaluation of trauma outcomes. It incorporates both anatomical and severity indices and is derived from the AIS for anatomic regions. The ISS has been demonstrated to be an important predictor of injury severity and mortality. The scale ranges from one (minor injury) to 75 (mortal injury). Generally, an ISS>15 is taken to be indicative of major trauma as mortality in this group has been shown to be >10 per cent.
Maximum AIS	Used as a proxy measure of injury severity. For each patient, all AIS scores for all injuries are ranked from lowest to highest. The maximum AIS is the highest AIS given to any of the injuries sustained by a patient, regardless of body region.
M-statistic	Used to compare the severity of injuries in a database with the MTOS database (international standard). Values range from 0-1. If the M-statistic is >0.88, then the injury. Severity distribution in the two datasets is similar. An M-statistic greater than 0.88 implies comparison of the two datasets is reasonable, as they relate to patients with similar injury severities.
MajorTrauma Outcome Study (MTOS)	The MTOS is a retrospective descriptive study of injury severity and outcome coordinated through the American College of Surgeons' Committee on Trauma. Since 1982, this Database has been continually updated and now contains 730,000 cases from 268 trauma centres across 36 states. The MTOS database is the International standard against which all other trauma databases are often compared.
Revised Trauma Score (ReTS)	An injury severity measure that is derived from the GCS, systolic blood pressure and respiratory rate. Reliance on the respiratory rate and GCS prevents calculation of the ReTS for intubated patients. In such cases, the ReTS is calculated from information taken at the scene prior to intubation. The raw ReTS ranges from 0-12, with higher values suggesting a more stable patient. The ReTS can be weighted for research and prediction purposes. The maximum weighted ReTS is 7.84, corresponding to a stable patient. ReTS <2 are associated with a 70 per cent or more predicted probability of death (Senkowski & McKenney, 1999).

TAC-compensable patient	Patients where there is a strong likelihood that compensation would be received from the Transport Accident Commission (TAC) for treatment costs and/or loss of income. This is as recorded at the last hospital of care.
Trauma service level	The Victorian trauma service has a tiered trauma system structure. Different complexities of care are provided at each level, with the Major Trauma Services providing the highest complexity of care.
Major Trauma Services (MTS)	Comprises The Alfred Hospital, Royal Melbourne Hospital and Royal Children's Hospital and are the first tier of the state trauma service.
Metropolitan Trauma Service (MeTS)	Are hospitals of the second tier of the state trauma service for metropolitan Melbourne.
Metropolitan Primary Care Service (MPCS)	Are hospitals of the third tier of the state trauma service for metropolitan Melbourne.
Regional Trauma Service (RTS)	Are hospitals of the first tier of the state trauma service in rural and regional Victoria.
Urgent Care Service (UCS)	Are hospitals of the second tier of the state trauma service in rural and regional Victoria.
Primary Care Service (PCS)	Are hospitals of the third tier of the trauma service in rural and regional Victoria.
TRISS	An estimate of the probability of survival of individual patients. It is derived from the age, ReTS, mechanism of injury and ISS. The TRISS probability of survival is calculated from variables recorded at the definitive emergency department. When the TRISS probability of survival components are missing from the emergency department records, the patient's pre-hospital parameters are used.
Victorian Admitted Episodes Database (VAED)	This is maintained by Department of Human Services and records details of all hospital admissions across the State.
VSTORM	The Victorian State Trauma Outcome Registry and Monitoring (VSTORM) group which coordinates the Victorian State Trauma Registry.
W-score	The W-score is used to describe the difference in the number of deaths between the test dataset and the normative dataset in clinically relevant terms. The W-score estimates the number of deaths more or less than expected per 100 patients treated.

Z-score

The Z-score is used to compare a dataset with the international MTOS standard to determine whether the actual number of survivors recorded in the test dataset is equivalent to the predicted number of survivors in the MTOS dataset. Values > 2 standard deviations are indicative of a significant difference between the databases with a positive value indicating more survivors, than expected and a negative value indicating fewer than expected survivors.

