

ROAD TRAUMA ADMISSIONS TO SWSAHS

Road trauma admissions include all admitted patients whose mechanism of injury was driver or passenger in a vehicle or on a motor cycle and pedestrians and cyclists hit by a vehicle. A total of 3,333 patients were admitted to hospitals in South Western Sydney area with injuries following road trauma during the 5 year period from 1995 to 1999.

Annual Trends for Road Trauma: Sex Distribution

| Sex | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|---------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Males | 411 | 64.0 | 444 | 65.6 | 475 | 66.9 | 438 | 66.9 | 430 | 66.6 | 2198 | 66.0 |
| Females | 231 | 36.0 | 233 | 34.4 | 235 | 33.1 | 220 | 33.4 | 216 | 33.4 | 1135 | 34.0 |
| Total | 642 | 100 | 677 | 100 | 710 | 100 | 658 | 100 | 646 | 100 | 3,333 | 100 |

Mechanism and Sex for Category of Injury

| Injury category | Major | | Minor | | Total |
|-----------------|-------|--------|-------|--------|-------|
| | Male | Female | Male | Female | |
| Driver | 757 | 300 | 262 | 171 | 1308 |
| Front Passenger | 153 | 185 | 60 | 88 | 486 |
| Rear | 79 | 76 | 44 | 51 | 250 |
| Motor Cyclist | 240 | 6 | 164 | 2 | 412 |
| Pillion | 7 | 6 | 3 | 7 | 23 |
| Pedestrian | 285 | 137 | 103 | 53 | 578 |
| Cyclist | 88 | 18 | 135 | 35 | 276 |
| Total | 1,609 | 728 | 771 | 407 | 3,333 |

Age and Sex for Role in Accident

| Ages | Driver | | Front | | Rear | | Motor Bike | | Pedestrian | | Cyclist | | Total | |
|----------|--------|-----|-------|-----|------|-----|------------|----|------------|-----|---------|----|-------|------|
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F |
| 0 to 14 | 4 | 0 | 18 | 27 | 51 | 48 | 11 | 0 | 114 | 53 | 123 | 41 | 321 | 169 |
| 15 to 24 | 275 | 140 | 92 | 72 | 46 | 32 | 160 | 10 | 71 | 20 | 54 | 6 | 698 | 280 |
| 25 to 34 | 199 | 102 | 41 | 38 | 16 | 14 | 130 | 7 | 51 | 17 | 23 | 2 | 460 | 180 |
| 35 to 44 | 116 | 87 | 21 | 33 | 5 | 3 | 68 | 4 | 31 | 16 | 9 | 1 | 250 | 144 |
| 45 to 54 | 98 | 65 | 19 | 29 | 3 | 8 | 27 | 0 | 27 | 18 | 4 | 2 | 178 | 122 |
| 55 to 64 | 65 | 36 | 10 | 24 | 0 | 9 | 13 | 0 | 28 | 15 | 5 | 1 | 121 | 85 |
| 65+ | 83 | 76 | 12 | 50 | 2 | 13 | 5 | 0 | 66 | 51 | 5 | 0 | 173 | 190 |
| Total | 837 | 471 | 213 | 273 | 123 | 127 | 414 | 21 | 388 | 190 | 223 | 53 | 2198 | 1135 |

Injury Severity Score for Mechanism of Injury in Road Trauma

| Role | Major category | | Minor category | Total |
|-----------------|----------------|----------|----------------|-------|
| | ISS ≥ 16 | ISS < 16 | Minor | |
| Driver | 206 | 669 | 433 | 1308 |
| Front Passenger | 99 | 239 | 148 | 486 |
| Rear | 36 | 119 | 95 | 250 |
| Motor Cyclist | 53 | 193 | 166 | 412 |
| Pillion | 2 | 11 | 10 | 23 |
| Pedestrian | 128 | 294 | 156 | 578 |
| Cyclist | 17 | 89 | 170 | 276 |
| Total | 541 | 1,614 | 1,178 | 3,333 |

Survival Outcome for Road Trauma by Mechanism of injury

| Mechanism | Survived | | Died | | Total | |
|-----------------|-------------|-------------|------------|------------|--------------|------------|
| | n | % | n | % | n | % |
| Driver | 1269 | 97.0 | 39 | 3.0 | 1308 | 39.2 |
| Front Passenger | 472 | 97.1 | 14 | 2.9 | 486 | 14.6 |
| Rear | 240 | 96 | 10 | 4.0 | 250 | 7.5 |
| Motor Cyclist | 404 | 98.1 | 8 | 1.9 | 412 | 12.4 |
| Pillion | 23 | 100 | 0 | 0 | 23 | 0.7 |
| Pedestrian | 540 | 93.4 | 38 | 6.6 | 578 | 17.3 |
| Cyclist | 274 | 99.3 | 2 | 0.7 | 276 | 8.3 |
| Total | 1178 | 35.3 | 111 | 3.3 | 3,333 | 100 |

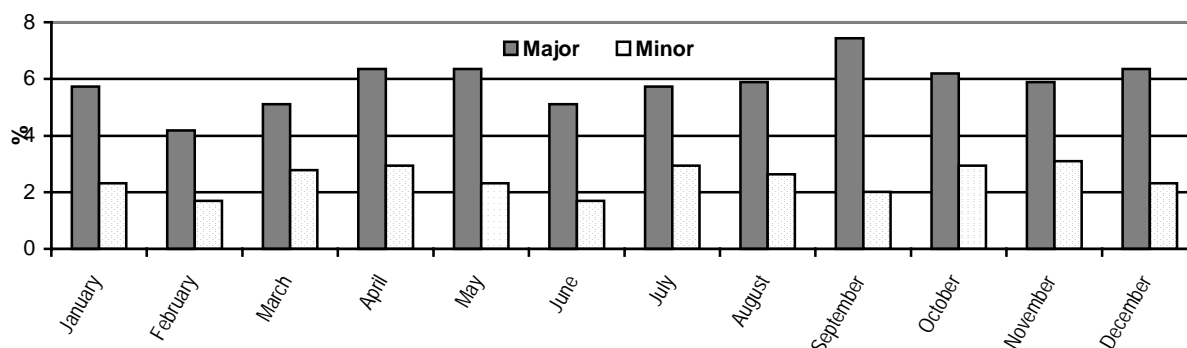
Injury Severity Score Classification for Road Trauma Admissions

| ISS Classification | Patients | % |
|--------------------------------|-------------|--------------|
| Minor Database | 1178 | 35.3 |
| Major DB, Minor (ISS 1-15) | 1614 | 48.4 |
| Major DB, Serious (ISS 16-24) | 255 | 7.7 |
| Major DB, Severe (ISS 25-40) | 202 | 6.1 |
| Major DB, Critical (ISS 41-74) | 68 | 2.0 |
| Major DB, Maximum (ISS 75) | 16 | 0.5 |
| Total | 3333 | 100.0 |

Discharge Status for Road Trauma Admissions

| Discharge Status | Patients | % |
|---|--------------|------------|
| Minor Database | 1,178 | 35.3 |
| Major DB, Full Recovery | 1,520 | 45.6 |
| Major DB, Home Help | 75 | 2.25 |
| Major DB, Rehabilitation | 184 | 5.52 |
| Major DB, Home Help & Rehabilitation | 42 | 1.26 |
| Major DB, Died | 110 | 3.3 |
| Major DB, Other | 178 | 5.34 |
| Major DB, Not Known | 3 | 0.09 |
| Major DB, Discharged against Medical Advice | 32 | 0.96 |
| Major DB, not yet coded | 11 | 0.33 |
| Total | 3,333 | 100 |

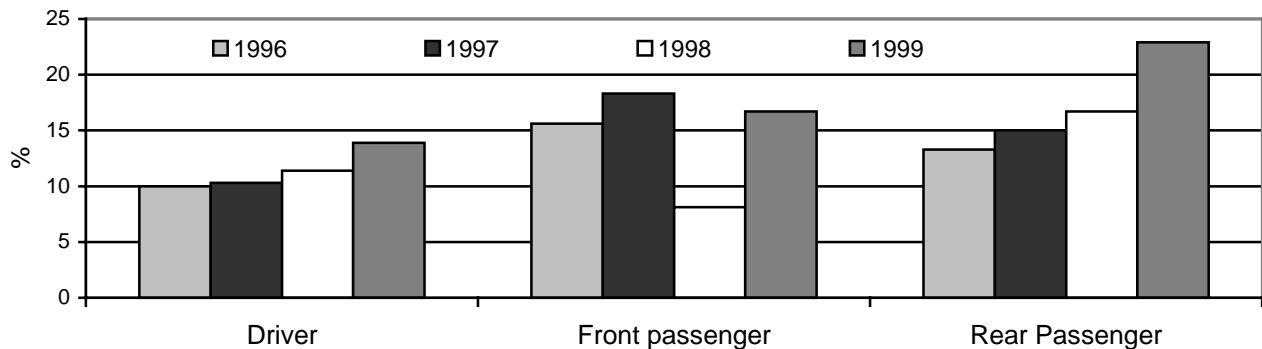
Monthly Road Trauma Admissions 1999 n=646



Use of Restraint in Motor Vehicle Accidents

This information was not collected prior to 1996 and is not available for all patients due to documentation limitations. For the 587 drivers for whom there was documentation available 519 (88.4%) were restrained and 68 (11.6%) were unrestrained. For the 233 front seat passengers 200 (85.8%) were restrained and 33 (14.2%) were not. For the 100 rear seat passengers 18% were unrestrained. Recognising the limitations of incomplete data it is nevertheless disturbing to see an increasing trend for vehicle occupants to be unrestrained as the graph below illustrates.

Unrestrained Vehicle Occupants



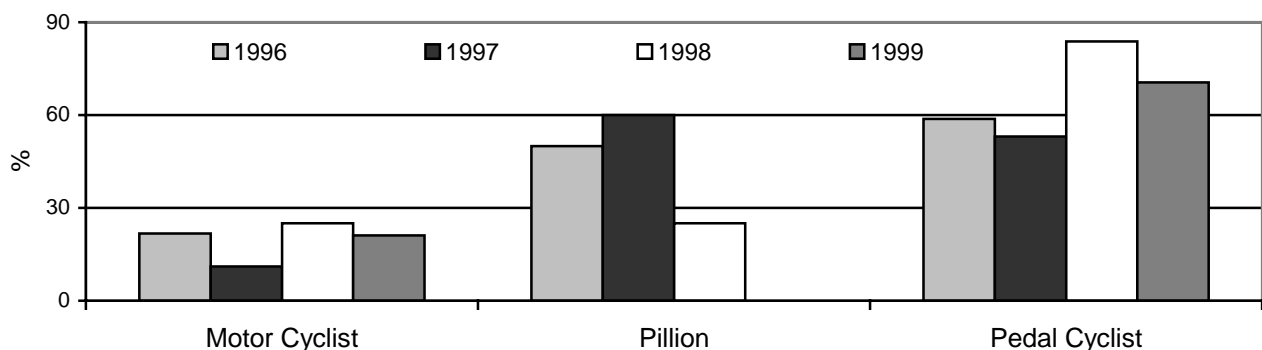
Airbag Use

There is very limited data on the number of patients admitted with injuries following air bag inflation. Since 1997 we only have 12 patients recorded in the major injury category (this is not a collected item in the minor injury category). For this small group of drivers only 2 had serious injuries (one with ISS 27 and one with ISS 17). The remaining 10 patients had ISS 7-13 (4-13). Age in years was 44±20 (19–85). Four patients had fractured sternum.

Wearing of Helmets by Motor and Pedal Cyclists

For the 432 motor cyclists, pillion passengers and pedal cyclists for whom there was documentation available 277 (52.5%) wore a helmet. For the 295 motor cyclists (including pillion passengers) 234 (79.3%) wore a helmet. For the 137 pedal cyclists only 43 (31.4%) wore a helmet. The majority of pedal cyclists who are admitted with injuries are not wearing helmets.

Unprotected Cyclists- No Helmet Worn



In 1999 there was only one pillion admitted and there is no information about helmet use.

Child Pedestrians

The Child Death Review Team recently identified the quite high number of children being killed and injured by cars manoeuvring (mostly reversing) in private driveways. It is possible in the Trauma Registry, to discriminate between children who have been injured in private grounds, as opposed to public streets. Selected were all admissions in the registry for pedestrians aged 0 to 9. There were 94 patients in this group in the major injury category. 15 of these are coded as having occurred at home. 12 of these were aged 1 to 2 years. 9 of these children were transferred to another hospital as shown in tables below.

Age and Place of Occurrence

| Age | Street | Home | Facility | Farm | Total |
|-------|--------|------|----------|------|-------|
| 0 | 1 | - | - | - | 1 |
| 1 | 5 | 10 | - | - | 15 |
| 2 | 7 | 2 | - | - | 9 |
| 3 | 10 | - | - | - | 10 |
| 4 | 11 | 1 | 1 | - | 13 |
| 5 | 8 | 1 | - | - | 9 |
| 6 | 3 | 1 | - | 1 | 5 |
| 7 | 11 | - | - | - | 11 |
| 8 | 11 | - | - | - | 11 |
| 9 | 10 | - | - | - | 10 |
| Total | 77 | 15 | 1 | 1 | 94 |

Hospital Attended

| Hospital | Street | Home | Facility | Farm | Total |
|--------------|--------|------|----------|------|-------|
| Camden | 1 | 2 | - | - | 3 |
| Fairfield | - | 2 | - | - | 2 |
| Liverpool | 60 | 5 | - | 1 | 66 |
| Campbelltown | 8 | 4 | - | - | 12 |
| Bankstown | 6 | 2 | - | - | 8 |
| Bowral | 2 | - | 1 | - | 3 |
| Total | 77 | 15 | 1 | 1 | 94 |

Year and Place

| Year | Street | Home | Facility | Farm | Total |
|-------|--------|------|----------|------|-------|
| 1995 | 17 | 3 | - | - | 20 |
| 1996 | 15 | 3 | - | 1 | 19 |
| 1997 | 13 | 3 | - | - | 16 |
| 1998 | 18 | 3 | - | - | 21 |
| 1999 | 14 | 3 | 1 | - | 18 |
| Total | 77 | 15 | 1 | 1 | 94 |

Injury Severity

Mean ISS 11 \forall 8.5 (4 – 35). Four children died. Three of these were injured on the road and one at home.

Disposal from Emergency

| Disposal | Street | Home | Facility | Farm | Total |
|-------------------|--------|------|----------|------|-------|
| Remain in SWSAHS | 51 | 6 | 1 | 1 | 59 |
| Died enroute POW | 1 | - | - | - | 1 |
| New Children's | 13 | 6 | - | - | 19 |
| Sydney Children's | 7 | 2 | - | - | 9 |
| Westmead | 4 | 1 | - | - | 5 |
| Total | 77 | 15 | 1 | 1 | 94 |

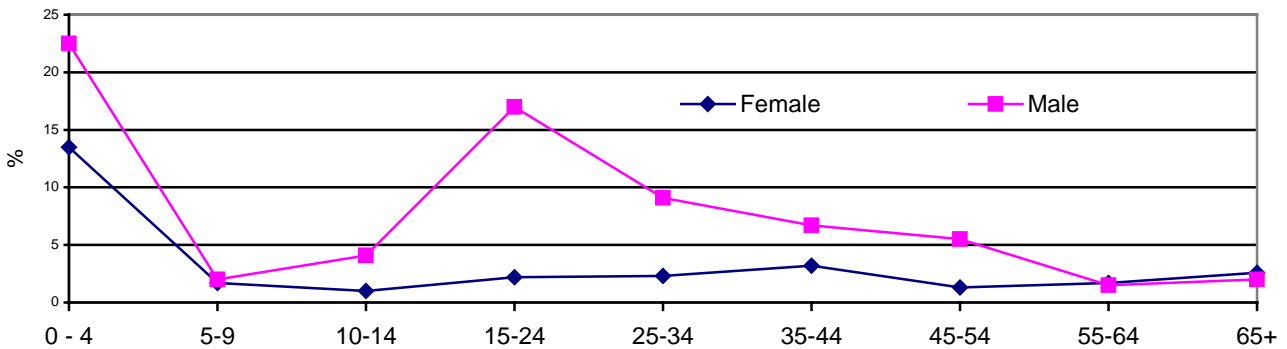
BURNS ADMISSIONS TO SWSAHS

689 patients were admitted following burns injuries to hospitals in South Western Sydney Area Health Service. 301 (43.7%) of these patients were admitted to Liverpool Hospital.

Sex Distribution for Burns Injury Admissions

| Sex | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|---------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Males | 95 | 13.8 | 86 | 12.5 | 101 | 14.7 | 118 | 17.1 | 85 | 12.3 | 485 | 70.4 |
| Females | 43 | 6.2 | 42 | 6.1 | 47 | 6.8 | 35 | 5.1 | 37 | 5.4 | 204 | 29.6 |
| Total | 138 | 20.0 | 128 | 18.6 | 148 | 21.5 | 153 | 22.2 | 122 | 17.7 | 689 | 100 |

Age and Sex of Burns Injuries



Annual Trends for Burns Injury to Each Hospital

| Hospital | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|--------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Liverpool | 65 | 9.4 | 59 | 8.6 | 49 | 7.1 | 67 | 9.7 | 61 | 8.9 | 301 | 43.7 |
| Bankstown | 23 | 3.3 | 32 | 4.6 | 24 | 3.5 | 25 | 3.6 | 18 | 2.8 | 123 | 17.9 |
| Campbelltown | 31 | 4.5 | 18 | 2.6 | 22 | 3.2 | 25 | 3.6 | 18 | 2.6 | 114 | 16.5 |
| Fairfield | 10 | 1.5 | 13 | 1.9 | 32 | 4.6 | 15 | 2.6 | 12 | 1.7 | 85 | 12.3 |
| Bowral | 5 | 0.7 | 4 | 0.6 | 13 | 1.9 | 12 | 1.7 | 11 | 1.6 | 45 | 6.5 |
| Camden | 4 | 0.6 | 2 | 0.3 | 8 | 1.2 | 6 | 0.9 | 1 | 0.1 | 21 | 3.0 |
| Total | 138 | 20.0 | 128 | 18.6 | 148 | 21.5 | 153 | 22.2 | 122 | 17.7 | 689 | 100 |

Major or Minor Category Injuries for Burns in Children and Adults by Hospital

| Hospital | Children | | | | Adults | | | | Total | |
|--------------|----------|-------|-------|------|--------|-------|-------|------|-------|------|
| | Major | Minor | Total | % | Major | Minor | Total | % | Total | % |
| Liverpool | 21 | 94 | 115 | 16.7 | 73 | 113 | 186 | 27.0 | 301 | 43.7 |
| Bankstown | 6 | 50 | 56 | 8.1 | 16 | 51 | 67 | 9.7 | 123 | 17.9 |
| Campbelltown | 1 | 61 | 62 | 9.0 | 14 | 38 | 52 | 7.5 | 114 | 16.5 |
| Fairfield | 13 | 30 | 43 | 6.2 | 8 | 34 | 42 | 6.1 | 85 | 12.3 |
| Bowral | 6 | 10 | 16 | 2.3 | 10 | 19 | 29 | 4.2 | 45 | 6.5 |
| Camden | 0 | 8 | 8 | 1.2 | 3 | 10 | 13 | 1.9 | 21 | 3.0 |
| Total | 47 | 253 | 300 | 43.5 | 124 | 265 | 389 | 56.5 | 689 | 100 |

Burns Injuries Remaining in SWSAHS or Transferred to Other Area Health Service

| Remain or Transfer | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|--------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Children | | | | | | | | | | | | |
| Remain SWS | 35 | 62.5 | 31 | 50.8 | 31 | 48.4 | 28 | 45.2 | 26 | 66.7 | 151 | 50.3 |
| To Other AHS | 21 | 37.5 | 30 | 49.2 | 33 | 51.6 | 34 | 54.8 | 13 | 33.3 | 149 | 49.7 |
| Total | 56 | 100 | 61 | 100 | 64 | 100 | 62 | 100 | 39 | 100 | 300 | 100 |
| Adults | | | | | | | | | | | | |
| Remain SWS | 66 | 80.5 | 48 | 71.6 | 62 | 73.8 | 70 | 76.9 | 43 | 66.2 | 289 | 74.3 |
| To Other AHS | 16 | 19.5 | 19 | 28.4 | 22 | 26.2 | 21 | 23.1 | 22 | 33.8 | 100 | 25.7 |
| Total | 82 | 100 | 67 | 100 | 84 | 100 | 91 | 100 | 65 | 100 | 389 | 100 |

PENETRATING INJURY ADMISSIONS TO LIVERPOOL HOSPITAL

Major Category Injury

343 patients admitted to Liverpool Hospital with penetrating injuries in the Major Injury category during the 5-year period from 1995 to 1999. 306 (89.2%) were males and 37 (10.8%) females. The mean age for patients was 31 years \pm 13.1 (range 12-79).

Interpersonal violence accounted for 304 (88.6%) of patients admitted with penetrating injuries. 39 patients (11.4%) sustained injuries as a result of deliberate self-harm. 323 (94.1%) survived and 20 (5.9%) patients died as a result of penetrating injuries.

289 (84.3%) received pre-hospital intervention and 54 (15.7%) arrived by private transport. For patients transported by ambulance the mean total pre-hospital time was 39 minutes (range 3 – 149 minutes).

The body region involved for predominant injuries were Chest (31.2%), Abdomen (26.2%), Extremity (25.6%) and Head, neck or face (16.8%).

87 patients with penetrating injuries underwent laparotomy. 22 (25.2%) of patients undergoing laparotomy had non-therapeutic laparotomy. There were 135 different operation codes for the 87 patients because some patients had more than one organ that required repair. Organs most commonly involved were stomach (15%), colon (13%), small bowel (11%), and liver (9%).

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Penetrating Injury: All Category Injuries Admitted to Liverpool Hospital

| Type Trauma | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|----------------|------|------|------|-----|------|------|------|------|------|------|-------|------|
| Blunt | 1639 | 96.2 | 1755 | 95 | 1714 | 94.7 | 1863 | 95.1 | 1833 | 96.2 | 8804 | 95.4 |
| Penetrating | 64 | 3.8 | 93 | 5 | 95 | 5.3 | 96 | 4.9 | 73 | 3.8 | 421 | 4.6 |
| Total Patients | 1703 | 100 | 1848 | 100 | 1809 | 100 | 1959 | 100 | 1906 | 100 | 9225 | 100 |

Penetrating Injury: Major Category Injuries Admitted to Liverpool Hospital

| Type Trauma | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|-----|
| Blunt | 610 | 91.9 | 664 | 89.9 | 660 | 89.6 | 738 | 89.9 | 779 | 93.6 | 3451 | 91 |
| Penetrating | 54 | 8.1 | 75 | 10.1 | 77 | 10.4 | 83 | 10.1 | 54 | 7.4 | 343 | 9.0 |
| Total Major | 664 | 100 | 739 | 100 | 737 | 100 | 821 | 100 | 733 | 100 | 3794 | 100 |

Penetrating Injury: Minor Category Injuries Admitted to Liverpool Hospital

| Type Trauma | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Blunt | 1029 | 99.0 | 1091 | 98.4 | 1054 | 98.3 | 1125 | 98.9 | 1054 | 98.2 | 535 | 98.6 |
| Penetrating | 10 | 1.0 | 18 | 1.6 | 18 | 1.7 | 13 | 1.1 | 19 | 1.8 | 78 | 1.4 |
| Total Minor | 1039 | 100 | 1109 | 100 | 1072 | 100 | 1138 | 100 | 1073 | 100 | 5431 | 100 |

PENETRATING INJURY ADMISSIONS TO LIVERPOOL HOSPITAL

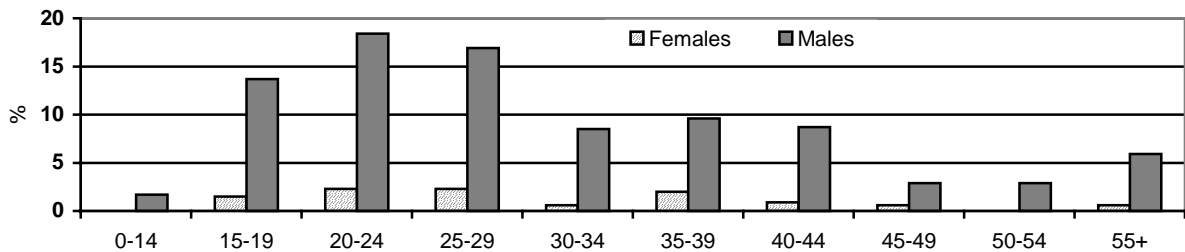
Sex Distribution for Patients with Penetrating Injury

| Type Trauma | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Males | 49 | 91.0 | 64 | 85 | 69 | 90.0 | 77 | 93.0 | 47 | 87.0 | 306 | 89.2 |
| Females | 5 | 9.3 | 11 | 15.0 | 8 | 10.0 | 6 | 7.2 | 7 | 13.0 | 37 | 10.8 |
| Total | 54 | 100 | 75 | 100 | 77 | 100 | 83 | 100 | 54 | 100 | 343 | 100 |

Age Distribution for Patients with Penetrating Injury

| Age (Years) | 1995 | 1996 | 1997 | 1998 | 1999 | Total |
|------------------|--------------------|--------------------|--------------------|------------------|--------------------|------------------|
| Mean ∇ sd | 29.6 ∇ 10.7 | 32.9 ∇ 14.7 | 30.9 ∇ 13.9 | 30 ∇ 11.3 | 31.9 ∇ 14.1 | 31 ∇ 13.1 |
| Range | 14-65 | 15-79 | 13-77 | 13-64 | 12-71 | 12-79 |

Age and Sex Penetrating Injuries



Mechanism of Injury for Penetrating Injury

| Interpersonal | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|---------------------|------|------|------|------|------|-------|------|------|------|------|-------|------|
| Stab | 36 | 66.7 | 40 | 53.3 | 48 | 62.3 | 58 | 69.9 | 34 | 63.0 | 216 | 63.0 |
| Gun | 9 | 16.7 | 13 | 17.3 | 9 | 11.7 | 16 | 19.3 | 13 | 24.1 | 60 | 17.5 |
| Other Assault | 3 | 5.6 | 11 | 14.7 | 7 | 9.1 | 3 | 3.6 | 4 | 7.4 | 28 | 8.2 |
| Total Interpersonal | 48 | 88.9 | 64 | 85.3 | 64 | 83.1 | 77 | 92.8 | 51 | 94.4 | 304 | 88.6 |
| Other | 1995 | 1996 | 1997 | 1998 | 1999 | Total | | | | | | |
| Road | 1 | 1.9 | 2 | 2.7 | 3 | 3.9 | 1 | 1.2 | 1 | 1.9 | 8 | 2.3 |
| Industrial | 3 | 5.6 | 7 | 9.3 | 5 | 6.5 | 4 | 4.8 | 1 | 1.9 | 20 | 5.8 |
| Other | 2 | 3.7 | 2 | 2.7 | 5 | 6.5 | 1 | 1.2 | 1 | 1.9 | 11 | 3.2 |
| Total other | 6 | 11.1 | 11 | 14.7 | 13 | 16.9 | 6 | 7.2 | 3 | 5.6 | 39 | 11.4 |
| Grand Total | 54 | 100 | 75 | 100 | 77 | 100 | 83 | 100 | 54 | 100 | 343 | 100 |

Human Intent for Penetrating Injury

| Intent | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Accidental | 6 | 11.1 | 11 | 14.7 | 12 | 15.6 | 5 | 6.0 | 3 | 5.6 | 37 | 10.8 |
| Self harm | 1 | 1.9 | 12 | 16.0 | 8 | 10.4 | 12 | 14.5 | 6 | 11.1 | 39 | 11.4 |
| Assault | 47 | 87.0 | 52 | 69.3 | 57 | 74 | 61 | 73.5 | 42 | 77.8 | 259 | 75.5 |
| By Partner | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 5.6 | 38 | 2.3 |
| Total | 54 | 100 | 75 | 100 | 77 | 100 | 83 | 100 | 54 | 100 | 343 | 100 |

PENETRATING INJURY ADMISSIONS TO LIVERPOOL HOSPITAL

Survival Outcome of Patients with Penetrating Injury

| Year | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|---------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Survive | 53 | 98.1 | 68 | 90.7 | 71 | 92.2 | 81 | 97.6 | 50 | 92.6 | 323 | 94.2 |
| Died | 1 | 1.9 | 7 | 9.3 | 6 | 7.8 | 2 | 2.4 | 4 | 7.4 | 20 | 5.8 |
| Total | 54 | 100 | 75 | 100 | 77 | 100 | 83 | 100 | 54 | 100 | 343 | 100 |

Penetrating Injury: Delivered Directly to Liverpool or Transferred from Other Hospital

| Transfer | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Direct | 51 | 94.4 | 71 | 94.7 | 73 | 94.8 | 76 | 91.6 | 44 | 81.5 | 315 | 91.8 |
| Transfer In | 3 | 5.6 | 4 | 5.3 | 4 | 5.2 | 7 | 8.4 | 10 | 18.5 | 28 | 8.2 |
| Total | 54 | 100 | 75 | 100 | 77 | 100 | 83 | 100 | 54 | 100 | 343 | 100 |

Penetrating Injury: Predominant Body Region Injured

| Body Region | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|-------|-------|
| Head/Neck | 9 | 16.7 | 11 | 14.7 | 8 | 10.4 | 5 | 6.0 | 10 | 18.5 | 43 | 12.5 |
| Face | 3 | 5.6 | 4 | 5.3 | 2 | 2.6 | 3 | 3.6 | 3 | 5.6 | 15 | 4.4 |
| Chest | 13 | 24.1 | 21 | 28.0 | 29 | 37.7 | 25 | 30.1 | 19 | 35.2 | 107 | 31.2 |
| Abdomen | 20 | 37.0 | 18 | 24.0 | 16 | 20.8 | 25 | 30.1 | 11 | 20.4 | 90 | 26.2 |
| Extremity | 9 | 16.7 | 21 | 28.0 | 22 | 28.6 | 25 | 30.1 | 11 | 20.4 | 88 | 25.7 |
| Total | 54 | 100.0 | 75 | 100.0 | 77 | 100.0 | 83 | 100.0 | 54 | 100.0 | 343 | 100.0 |

Penetrating Injury: Patients Receiving Pre-hospital Intervention

| PreHosp Care | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|---------------|------|------|------|------|------|-----|------|------|------|------|-------|------|
| CDA | 45 | 83.3 | 65 | 86.7 | 67 | 87 | 70 | 84.3 | 42 | 77.8 | 289 | 84.3 |
| Nil (private) | 9 | 16.7 | 10 | 13.3 | 10 | 13 | 13 | 15.7 | 12 | 22.2 | 54 | 15.7 |
| Total | 54 | 100 | 75 | 100 | 77 | 100 | 83 | 100 | 54 | 100 | 343 | 100 |

Total Pre-hospital Time: Penetrating Injury - Receiving Pre-hospital Intervention (Request time to arrive hospital time)

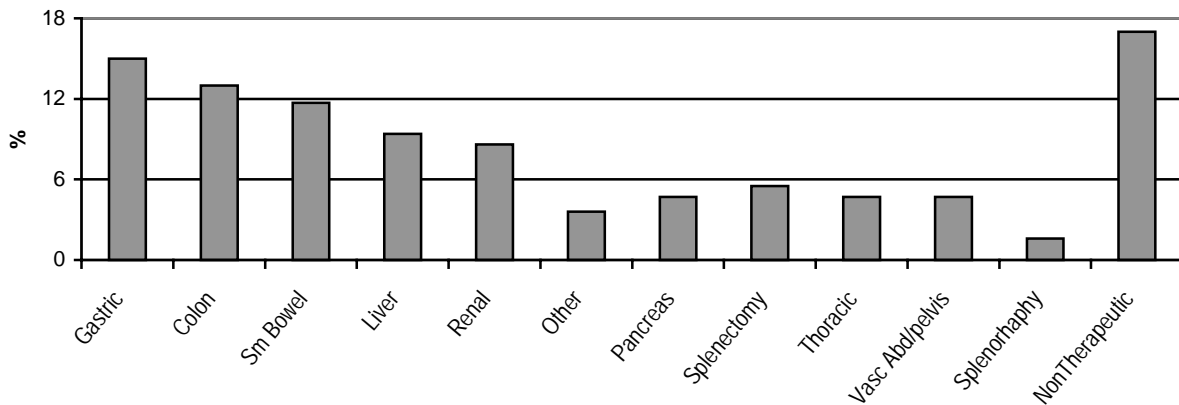
| Pre-hospital Time | 1995 | 1996 | 1997 | 1998 | 1999 | Total |
|-------------------------|--------|--------|--------|--------|--------|--------|
| Mean time (minutes √sd) | 39 √15 | 40 √14 | 41 √18 | 37 √18 | 36 √13 | 39 √16 |
| Range | 16-100 | 17-95 | 15-135 | 3-149 | 15-66 | 3-149 |

PENETRATING INJURY ADMISSIONS TO LIVERPOOL HOSPITAL

Penetrating Abdominal Injury Undergoing Laparotomy

87 (25%) of patients with penetrating injuries had abdominal laparotomy. Some patients had injury to more than one organ. Therefore 128 different operation codes for the 87 patients. Including 22 patients who had non-therapeutic laparotomy. 61 patients (47.6%) had one organ repaired at laparotomy, 14 (10.9%) had two organ repaired at laparotomy and 11 (8.6%) had between 3 and 6 organs affected.

Organ Repaired at Laparotomy



Penetrating Trauma - Minor Category Injuries

78 patients were admitted with penetrating minor category injuries sustained from 64 (82.1%) stabbing and 14 (17.9%) gunshot injuries. 69 (88.5%) were males. 70 (89.7%) resulted from interpersonal violence and 8 (10.3%) were inflicted with intentional self-harm.

Annual Trends for Penetrating Trauma in Minor Category Injuries

| Mechanism | 1995 | % | 1996 | % | 1997 | % | 1998 | % | 1999 | % | Total | % |
|-----------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Stabbing | 6 | 7.7 | 15 | 19.2 | 14 | 17.9 | 13 | 16.7 | 16 | 20.5 | 64 | 82.1 |
| Gunshot | 4 | 5.1 | 3 | 3.8 | 4 | 5.1 | 0 | | 3 | 3.8 | 14 | 17.9 |
| Total | 10 | 12.8 | 18 | 23.1 | 18 | 23.1 | 13 | 16.7 | 19 | 24.4 | 78 | 100 |

| Diagnosis for Minor Category Injury Sustained from Stabbing or Gunshot | Total | % |
|--|-----------|------------|
| Fracture Upper limbs | 3 | 3.8 |
| Laceration Upper Extremity | 24 | 30.8 |
| Laceration Lower Extremity | 6 | 7.7 |
| Laceration to tendon upper | 10 | 12.8 |
| Laceration to tendon lower | 2 | 2.6 |
| Soft tissue Face Head or Neck | 5 | 6.4 |
| Soft tissue Thorax | 8 | 10.3 |
| Soft tissue Abdomen | 7 | 9.0 |
| Soft tissue Extremities | 13 | 16.7 |
| Total | 78 | 100 |

ELDERLY PATIENTS WITH RIB FRACTURES to LIVERPOOL HOSPITAL

Injury admissions for patients aged 55 years or more to Liverpool Hospital totalled 776 during the five-year period. 668 (81.6%) of these survived and 108 (13.9%) died. 290 (37.4%) of patients that were aged 55 or more were admitted with rib fractures.

Age and ISS for Outcome: All Patients Aged 55+

| All patients aged 55+ | Survived | Died | Total |
|-----------------------|------------------------------|-------------------------------|-------------------------------|
| Number of patients | 668 (86.1%) | 108 (13.9%) | 776 |
| Age | 69.7 ∇ 9.9 (55-99) | 76.7 ∇ 10.6 (55-99) | 70.7 ∇ 10.3 (55-99) |
| ISS | 10.9 ∇ 8.5 (1-75) | 24.8 ∇ 19.1 (4-75) | 12.8 ∇ 11.6 (1-75) |

Age and ISS for Outcome: Patients Aged 55+ With Rib Fractures

| Rib Fractures | Survived | Died | Total |
|--------------------|------------------------------|------------------------------|------------------------------|
| Number of patients | 256 (88.3) | 34 (11.7%) | 290 |
| Age | 68.3 ∇ 9.1 (55-99) | 70.8 ∇ 9.3 (55-99) | 68.6 ∇ 9.2 (55-99) |
| ISS | 10.8 ∇ 9.3 (1-48) | 41.3 ∇ 19.4 (8-75) | 14.4 ∇ 14.4 (1-75) |

Mechanism and Outcome for Patients Aged 55+ with Rib Fractures

| Mechanism of Injury | Survive | % | Died | % | Total | % |
|------------------------|---------|-----|------|-----|-------|-----|
| Motor vehicle occupant | 110 | 89 | 14 | 11 | 124 | 43 |
| Motor cyclist | 7 | 100 | 0 | 0 | 7 | 2.4 |
| Pedestrian | 18 | 62 | 11 | 38 | 29 | 10 |
| Pedal Cyclist | 1 | 100 | 0 | 0 | 1 | 0.3 |
| Blunt assault | 12 | 100 | 0 | 0 | 12 | 4.1 |
| Gunshot | 0 | 0 | 1 | 100 | 1 | 0.3 |
| Fall <5m | 94 | 94 | 6 | 6 | 100 | 34 |
| Fall \geq 5m | 7 | 78 | 2 | 22 | 9 | 3.1 |
| Industrial | 3 | 100 | 0 | 0 | 3 | 1 |
| Other | 4 | 100 | 0 | 0 | 4 | 1.4 |
| Total | 256 | 88 | 34 | 12 | 290 | 100 |

