

# SENTINEL SURVEILLANCE OF SUBSTANCE ABUSE AND TRAUMA AT GSH

**1999-2000**

## **FINAL REPORT**



**August 2000**

**A DACST Innovation Fund Project**

## **Acknowledgements**

We gratefully acknowledge the support of the staff and management at Groote Schuur Hospital, particularly Dr A Nichols and Sr Plaatjies, who supported us in the study.

## **Project Team**

Hilton Donson

Mzimkhulu Maziko

William Nose

Margie Peden (Project Leader)

## **Report Compiled by:**

Hilton Donson & Margie Peden

August 2000

## **For further information please contact:**

Hilton Donson

Medical Research Council

PO Box 19070

Tygerberg

Ph (021) 938 0443

Email : [hilton.donson@mrc.ac.za](mailto:hilton.donson@mrc.ac.za)

# CONTENTS

## Page

### Acknowledgements

1.	INTRODUCTION .....	1
2.	AIM OF THE STUDY .....	1
3.	METHODS .....	2
3.1	Study Design .....	2
3.2	Sampling .....	2
3.2.1	Study Population .....	2
3.2.2	Study Framework .....	2
3.2.3	Inclusion/Exclusion Criteria .....	3
3.2.4	Sample Size .....	3
3.3	Instrumentation .....	3
3.4	Field Workers .....	4
3.5	Ethics .....	4
3.6	Analysis .....	4
4.	RESULTS .....	5
4.1	An Overview .....	5
4.2	Detail of Injury .....	6
4.2.1	Overall Cause of .....	6
4.2.1.1	Violence-related Injury .....	6
4.2.1.2	Traffic-related Injury .....	7
4.2.1.3	Non-traffic 'Accidents' .....	7
4.2.2	Demographics .....	8
4.2.2.1	Age .....	8
4.2.2.2	Gender .....	8
4.2.3	Where and When Injuries Occurred .....	9
4.2.3.1	Time of Injury .....	9
4.2.3.2	Day of Injury .....	9
4.2.3.3	Suburb of Injury .....	10
4.2.3.4	Scene of Injury .....	10

4.2.4	Location and Severity of Injury	11
4.2.4.1	Body Region Injured	11
4.2.4.2	Injury Severity	11
4.2.5	Care and Placement of Patients	12
4.2.5.1	Level of Care Required	12
4.2.5.2	Facility Required	12
4.2.5.3	Placement after Initial Assessment	13
4.2.5.4	Length of Stay	13
4.2.6	Estimated Disability of Patients	14
4.2.6.1	Severity of Disability	14
4.2.6.2	Time Away from Work	14
4.3	Alcohol Usage	15
4.3.1	Alcohol-relatedness	15
4.3.2	Breath Alcohol Analysis	15
4.3.3	Chronic Alcohol Usage	16
4.3.4	Alcohol Trends	17
4.4	Illicit Drug Usage	17
4.4.1	Self-reported Drug Usage	17
4.4.2	Multidrug Screen Results	18
4.4.3	Pharmacological Analysis	18
4.4.4	Multidrug Screen Kit vs Pharmacological Analysis	19
4.4.5	Drug Trends	19
5.	SUMMARY	20
6.	REFERENCES	21

Appendix A

## **1. INTRODUCTION**

According to Tim Ryan (1999), the international doors opened in South Africa in 1994, bringing with this many opportunities for growth and prosperity but also the 'ugly face' of the illegal drugs trade. Consequently, in 1997 we began monitoring the incidence and prevalence of both alcohol and illicit drugs among trauma patients in order to assess and identify emerging trends which will drive prevention programmes (Peden & Sidzumo, 1997).

In 1997, a pilot study was conducted at Groote Schuur Hospital (GSH) to monitor substance abuse among trauma patients. The results confirmed that alcohol was still the most commonly misused substance among trauma patients but that almost one-third of the patients had smoked cannabis prior to their injury. Other street drugs such as cocaine and opiates did not appear to appear to be a problem among Cape Town trauma patients but a high incidence of 'white pipe' smoking was found, almost exclusively among victims of violence (Peden, van der Spuy, Smith, et al., 2000).

After the pilot study in 1997 another trauma and drug study was conducted at GSH in 1999 with a view to conducting these studies annually. The results of the 1999 study indicated a drop in the alcohol-relatedness of injuries (Peden, Donson & Maziko, 1999). However, only data from the 2000 study would confirm or refute this result as either the beginning of a trend or a 'one off' result. Between 1997 and 1999 there was an increase in the number of patients abusing hard drugs like cocaine and methaqualone but no increase in dagga usage. One out of five patients had smoked a 'white pipe' prior to their injury (Peden, Donson & Maziko, 1999).

The trauma and drug studies will be repeated annually in order to obtain trend data for decision making and for the development of preventive and training programmes. The study also forms part of the National Violence and Injury Surveillance Initiative currently being undertaken by a consortium of research partners.

## **2. AIM OF THE STUDY**

The aim of the project was to monitor substance abuse and establish trends among trauma patients by:

- assessing the proportion of patients with fresh trauma who were alcohol positive at the time of their injury;
- assessing the proportion of patients with fresh trauma who had used an illicit drug prior to their injury; and
- assessing, by means of the CAGE questionnaire, what proportion of trauma patients were chronic alcoholics.

Two of the major objectives of this study were:

- to monitor substance abuse and trauma trends in a number of cities in South Africa, viz. Cape Town, Port Elizabeth, Umtata and Durban; and
- to include the results in the South African Community Epidemiology Network on Alcohol, Tobacco and Other Drug Use study (SACENDU) which monitors substance abuse trends (in general) at sentinel sites in South Africa.

### **3 METHODS**

#### **3.1 Study Design**

The study is essentially an annual cross-sectional, descriptive study of the incidence of alcohol (and alcohol dependence) and illicit substance abuse among patients presenting with fresh trauma to the GSH trauma unit.

#### **3.2 Sampling**

##### **3.2.1 Study Population**

Patients who attended the GSH Trauma Unit with fresh trauma.

### **3.2.2 Sampling Framework**

The concept of an 'ideal week' was used at the trauma unit. Each day was divided into four six-hour shifts and one shift was randomly selected per day, i.e. over four weeks the 24-hour period for each day was covered. All patients with fresh trauma attending during these times were included provided they gave written consent.

### **3.2.3 Inclusion/Exclusion Criteria**

The following inclusion and exclusion criteria applied to patients.

- Only patients with fresh physical trauma were included, i.e. reattenders were excluded.
- The injury-to-presentation time was set at a maximum of six hours.
- Referrals were included provided they did not obtain significant treatment at the first facility they attended and that their presentation to the study facility was within six hours.
- All patients had to give written, informed consent prior to inclusion in the study. Those patients who refused were excluded but the reason for their refusal was documented. For those less than 18 years of age, permission was requested from a parent or guardian.
- All types of poisoning and non-traumatic attempted suicide (e.g. drug overdoses) were excluded.

### **3.2.4 Sample Size**

A total of 116 patients were included in the study for the period 6 February to 4 March 2000.

### **3.3 Instrumentation**

- Each patient was interviewed by a field worker using a specially constructed interview sheet (Appendix A)
- Alcohol usage was assessed using self-report, a breath alcohol test and the CAGE questionnaire. Self-report was conducted by either asking the patient whether he/she had consumed alcohol prior to their injury or by using clinical judgement in unconscious or uncooperative patients. Breath alcohol was assessed using the Lion Alcolmeter SD2 - the use of which has previously been validated in a study in Cape Town (Peden, 1997). The CAGE questionnaire was included to assess chronic alcohol usage (Ewing, 1984).
- Self-report was also used to assess drug usage among patients. A urine specimen was also taken from the patient, a portion of which was used to screen for five drugs namely amphetamine, cannabis (THC), morphine, cocaine and methamphetamine, using a Multidrug kit. Formal chemical analysis (to test for dagga and methaqualone [Mandrax]) was conducted on the rest of the urine specimen by the Department of Pharmacology, UCT.

### **3.4 Field Workers**

The principal investigator (PI) was Margie Peden, Senior Specialist Scientist in Trauma Research at the Medical Research Council (MRC). She was assisted by a Chief and Senior Research Technologist from the MRC in Cape Town.

### **3.5 Ethics**

- Ethical approval for the study was obtained from the University of Cape Town (UCT) Ethics committee. Permission was also obtained from the Medical Superintendent of GSH and the head of the Trauma Unit.
- The data was anonymous but linked to demographic/self report data. All data was kept in the strictest confidence by the primary researcher. No alcohol or drug results were documented in the patient's hospital folder. There was no way of cross-referencing research results to actual patient records.
- Informed, written consent was taken from the patients.

### 3.6 Analysis

The data was checked and coded by the research team and cleaned before entering into Epi Info version 6.02 (Shareware, Center for Disease Control, 1994) by a dedicated data puncher. Epi Info was used to do the basic statistical analysis presented in this report.

## 4 RESULTS FOR GSH

### 4.1 An Overview

During 2000, a total of 193 patients were seen at GSH Trauma Unit over the idealised week. 116 of these were included in the study.

**Number of patients seen over an idealised week  
N = 193**

Included (n=116)	Excluded (n=77)
<b>Mean Age</b>	
31.5 ± 13.2 years	34.1 ± 14.2 years
<b>Gender</b>	
81.0% males	71.4% males
<b>Cause of Injury</b>	
Violence = 50.9%	Violence = 48.1%
Traffic = 18.1%	Traffic = 14.3%
Non-traffic 'Accident' = 31.0%	Non-traffic 'Accident' = 37.7%

Reason for Exclusion	
> 6 hours	= 81.8%
Repeat	= 13.0%
Staff	= 1.3%
Minor	= 1.3%
Missed	= 1.3%

Half of the patients who attended the GSH trauma unit were injured violently in 2000. This was the case for both the included and excluded categories. There was no significant difference in mean age for both categories ( $t=1.3$ ,  $p=0.19$ ). The main reasons for excluding patients were that their injury had occurred more than six hours prior to their hospital presentation or because they were reattending the facility for a follow-up of a previously treated injury.

## 4.2 Details of Injury

### 4.2.1 Overall cause of Injury

In 2000, violence out-numbered traffic as the leading cause of injury, accounting for nearly a half of all injuries. One-third of the cases were due to non-traffic 'accidents' (which included falls, burns, sports and other mishaps) while traffic collisions contributed to a further one-fifth of the cases (Table I).

**Table I : Overall Cause of Injury  
1999 versus 2000**

	1999 n (%)	2000 n (%)
Violence	61 (54.5)	54 (46.6)
Traffic	28 (25.0)	23 (19.8)
Non-traffic 'Accidents'	23 (20.5)	39 (33.6)

In comparison to the 1999 study, the 2000 study showed that:

- the proportion of patients injured violently or in traffic collisions had dropped slightly; and
- the proportion of patients with injuries due to non-traffic 'accidents' showed an increase of 13%.

#### 4.2.1.1 Violence-related Injury

Of the 53 patients injured as a result of violence, 30% were ue to sharp objects while firearms accounted for another 30%. Blunt (and blunt and sharp force combined) accounted for one-third of all violence-related incidents (Table II).

Table II shows that there has been a marked increase in firearm and blunt & sharp object-related injuries over the year and a concomitant decrease in violence perpetrated with a sharp object.

**Table II : Violence-related Injury  
1999 versus 2000**

	<b>1999 n (%)</b>	<b>2000 n (%)</b>
Sharp Object	25 (41.7)	16 (30.2)
Firearm	10 (16.7)	15 (28.3)
Blunt & Sharp	6 ( 10.0)	12 (22.6)
Blunt object	13 (21.7)	6 ( 5.7)
Other	6 (10.0)	4 ( 7.5)

#### **4.2.1.2 Traffic-related Injury**

In 2000, more than half of the traffic-related injuries involved pedestrians while 22% involved passengers. Over one-quarter of the traffic-related injuries involved drivers. Cars and minibus taxis were involved in 70% of the collisions.

**Table III: Traffic-related Injury  
1999 versus 2000**

	<b>1999 n (%)</b>	<b>2000 n (%)</b>
Driver	3 (10.7)	6 (26.1)
Passenger	9 (32.1)	5 (21.7)
Pedestrian	16 (57.1)	12 (52.2)

Table III shows that the proportion of driver-related injuries increased by 15%

over the year and that there was a concomitant reduction in passenger and pedestrian-related injuries.

#### **4.2.1.3 Non-traffic 'Accidents'**

In 2000, falls accounted for more than half of this category while one-third of the cases were the result of non-specified 'accidents' (Table IV).

In comparison to the 1999 study, the 2000 study showed that:

- the proportion of fall-related injuries increased by nearly 20% over the year; and
- the proportion of injuries due to non-specified 'accidents' or mishaps decreased by 15%.

**Table IV: Non-traffic 'Accidents' 1999 versus 2000**

	1999 n (%)	2000 n (%)
Fall	8 (34.8)	21 (53.8)
Sport	3 (13.0)	3 ( 7.7)
Non-specified 'accidents' or mishaps	11 (47.8)	13 (33.3)
Other	1 ( 4.3)	2 ( 5.1)

#### 4.2.2 Demographics

##### 4.2.2.1 Age

The mean age for patients seen during the 1999 and 2000 studies was similar ( $t=0.17$ ,  $p=0.87$ ). The largest proportion of injuries was seen in the 25-34 year age range. These injuries were mainly due to violence. Over the year there was a seven percent decrease in traffic-related injuries in the 13 to 24 year age group (Table V).

**Table V : Cause of Injury by Age**

	Violence		Traffic		Non-traffic 'accidents'		Total	
	1999	2000	1999	2000	1999	2000	1999	2000
13 - 24	18 (58.1)	26 (60.4)	8 (25.8)	8 (18.6)	5 (16.1)	9 (20.9)	31	43
25 - 34	22 (56.4)	16 (48.4)	8 (20.5)	6 (18.2)	9 (23.1)	11 (33.3)	39	33
35 - 44	14 (53.8)	7 (36.8)	6 (23.1)	4 (21.1)	6 (23.1)	8 (42.1)	26	19
45 - 54	6 (60.0)	4 (33.3)	2 (20.0)	4 (33.3)	2 (20.0)	4 (33.3)	10	12
55+	1 (16.7)	0 ( 0.0)	4 (66.7)	0 ( 0.0)	1 (16.7)	7 (100.0)	6	7
Mean Age (±SD)	31.3 (10.4)	28.1 (9.5)	35.8 (14.6)	30.3 (10.7)	34.5 (13.5)	37.2 (18.0)	33.1 (12.3)	31.6 (13.7)

##### 4.2.2.2 Gender

Of the cases studied at the GSH trauma unit over the study period, three-quarters were male and one-quarter were female. There were no statistically significant differences in gender during the two study periods (Chisq = 0.6, p 0.44).

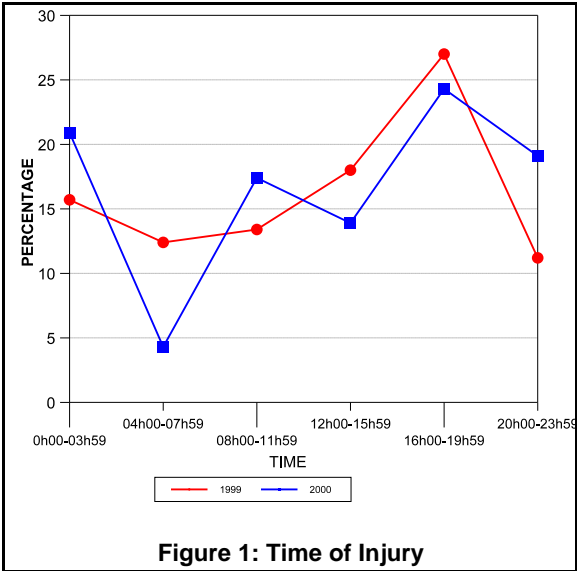
In comparison to the 1999 study, the 2000 study did show that the proportion of patients with violence and traffic-related injuries had dropped and that the proportion of non-traffic ‘accidents’ had increased in both genders (Table VI)

**4.2.3 When and Where Injuries Occurred**

**4.2.3.1 Time of Injury**

The proportion of injuries that occurred during office hours (from 08h00-16h59) and after hours (from 17h00 - 07h59) was similar over the study period (Figure 1).

In both 1999 and 2000 there were distinct peaks between 16h00 and 19h59.

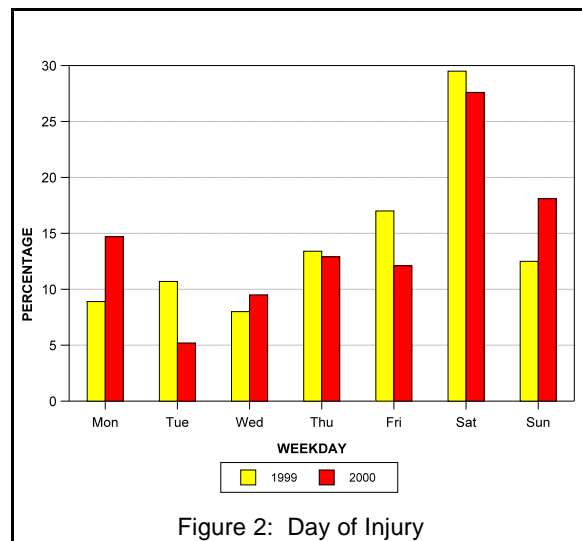


**4.3.4.2 Day of Injury**

**Table VI : Cause of Injury by Gender**

	Violence		Traffic		Non-traffic 'accidents'		Total	
	1999	2000	1999	2000	1999	2000	1999	2000
Female	9 (36.0)	9 (29.0)	9 (36.0)	5 (16.1)	7 (28.0)	17 (54.8)	25	31
Male	52 (59.8)	45 (52.9)	19 (21.8)	18 (21.2)	16 (18.4)	22 (25.9)	87	85

As expected, more than half of the patients presenting to the GSH trauma unit had sustained their injury over the weekend, i.e. from Friday evening until Monday morning. This phenomenon was similar for both study years (Figure 2).



#### 4.2.3.3 Suburb of Injury

Over the two study periods, more than 60% of patients were injured in the six suburbs indicated in Table VII. Injuries that occurred in five of the six suburbs were mainly due to violence.

Comparison between the study conducted in 1999 and this one shows that:

- violence-related injuries in Woodstock dropped by nearly 20%; while
- violence-related injuries increased by 20% in Guguletu
- no patients with traffic-related injuries were admitted from the Athlone area over both study periods.

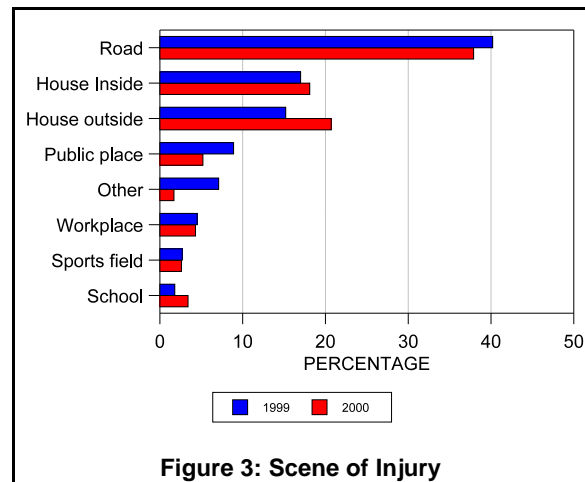
**Table VII : Top Six Suburbs by Cause of Injury**

	Violence		Traffic		Non-traffic 'Accidents'		Total	
	1999	2000	1999	2000	1999	2000	1999	2000
Woodstock	16 (64.0)	15 (46.9)	4 (16.0)	5 (15.6)	5 (20.0)	12 (37.5)	25	32
Guguletu	6 (50.0)	7 (70.0)	5 (42.0)	2 (20.6)	1 ( 8.0)	1 (10.0)	12	10
Khayelitsha	8 (80.0)	8 (57.1)	2 (20.0)	2 (14.3)	0 ( 0.0)	1 ( 7.1)	10	14
Mowbray	2 (33.3)	3 (37.5)	4 (67.0)	2 (25.0)	0 ( 0.0)	3 (37.5)	6	8
Mitchells Plain	5 (71.0)	2 (25.0)	1 (14.0)	2 (25.0)	1 (14.0)	4 (50.0)	7	8
Athlone	4 (57.0)	7 (63.6)	0 ( 0.0)	0 ( 0.0)	3 (43.0)	4 (36.4)	7	11

The cells show the number of injuries followed by the percentages (in brackets) by suburb and cause of injury

#### 4.2.3.4 Scene of Injury

Over the two study periods, around 40% of all patients were injured on the road while over one-third of incidences occurred in and around the home (Figure 3).

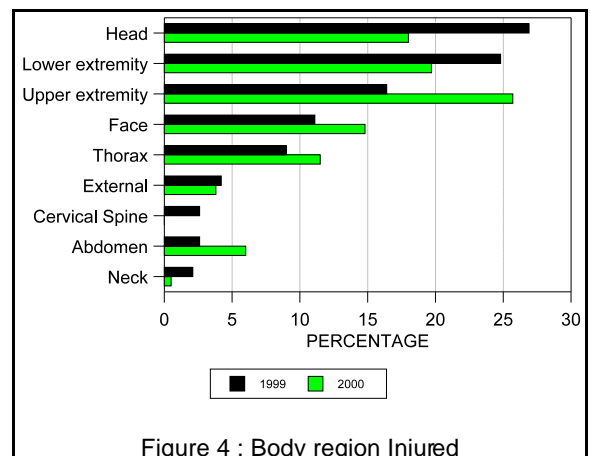


**Figure 3: Scene of Injury**

#### 4.2.4 Location and Severity of Injury

##### 4.2.4.1 Body Region Injured

Over the two study periods an increase in the proportion of injuries to the upper extremities, face, thorax and abdomen was noted while there was a concomitant decrease in injuries to the head and lower extremities (Figure 4). There were no patients with cervical injuries admitted to the GSH trauma unit during the



**Figure 4 : Body region Injured**

2000 sampling period.

#### 4.2.4.2 Injury Severity

Most of the patients sustained minor injuries (ISS < 9) while just over one-third had ISS ratings of nine or more.

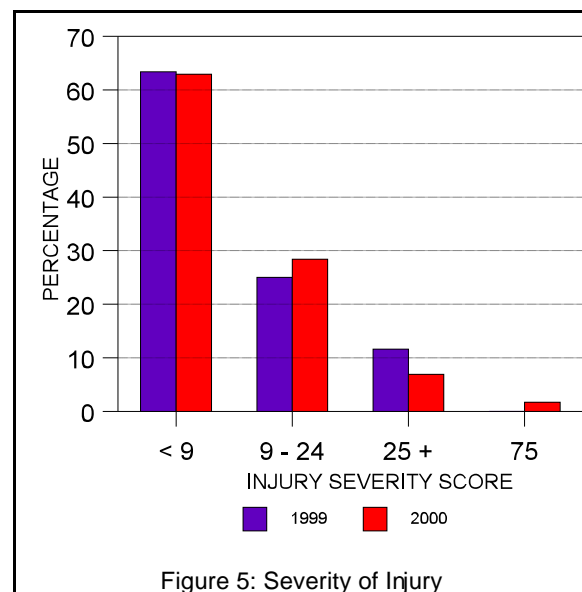
By comparison with the study conducted in 1999, the 2000 study showed that:

- the proportion of patients with mild injuries remained the same;
- the proportion of patients with moderate injuries increased by approximately 5%;
- the proportion of patients with severe injuries decreased by 5%.

The median ISS for injuries sustained in both 1999 and 2000 was 4.

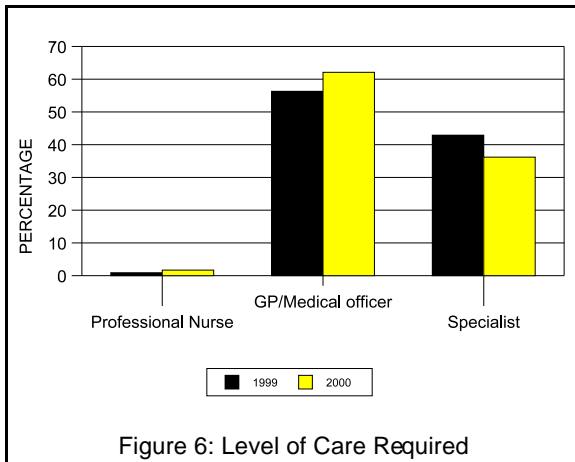
Two patients died as a result of their injuries in the 2000 sampling period.

#### 4.2.5 Care and Placement of Patients



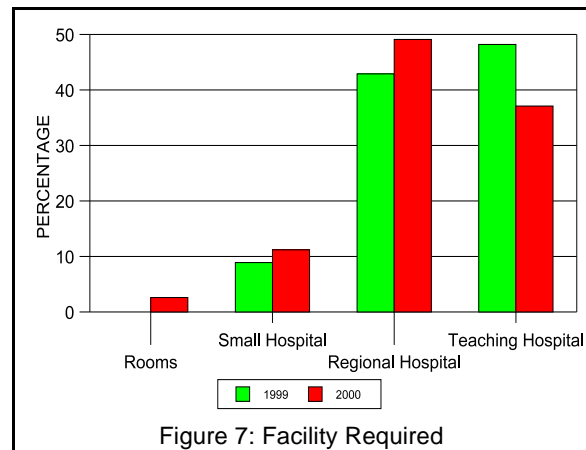
#### 4.2.5.1 Level of Care Required

Although the majority of patients sustained minor injuries, the research team judged that less than two percent could have been adequately managed by a nursing sister. In 2000, about six percent more patients required the services of a medical officer while six percent less needed the services of a specialist doctor (Figure 6).



#### 4.2.5.2 Facility Required

In 2000, the research team judged that more patients could have used smaller trauma services such as doctor's rooms, day hospitals or GF Jooste hospital. However, it should be remembered that GSH does serve as the primary trauma facility for the surrounding suburbs (Figure 7).



#### 4.2.5.3 Placement after Initial Assessment and Care

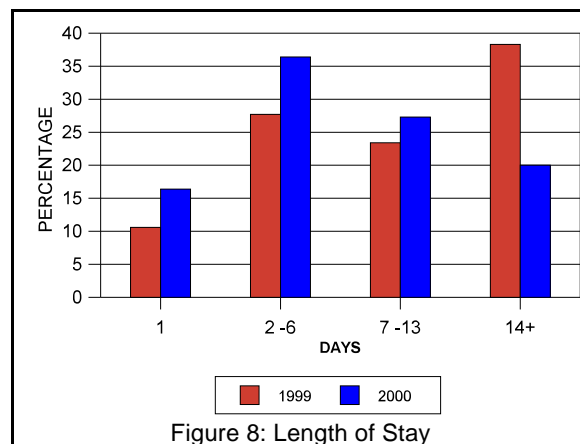
Over the two study periods approximately half of the patients who were seen in the trauma unit were treated and discharged. However, in 2000, nine percent more required admission to a hospital ward or directly to an Intensive Care Unit (ICU) but this difference was not significant (Chisq = 1.8, p=0.17). Fewer patients died while being resuscitated in the trauma unit (Table VIII) but this was not statistically significant.

**Table VIII: Placement after Initial Assessment and Placement 1999 versus 2000**

	1999 n (%)	2000 n (%)
Discharged	59 (52.7)	54 (46.6)
Admit : Ward	41 (36.6)	53 (45.7)
ICU	6 ( 5.4)	6 ( 5.2)
Died	5 ( 4.5)	2 ( 1.7)

#### 4.2.5.4 Length of Stay

As noted previously, nine percent more patients were admitted to either a hospital ward or an ICU over the two study periods. Five percent more patients were discharged after 24 hours while an additional 10% stayed for up to one week during 2000. Fewer patients were hospitalised for more than two weeks (Figure 8).



In 1999 patients admitted required a median of 11 days (IQR 4 - 28 days) in hospital while in 2000 their average length of stay was only 6 days (IQR 2 - 11 days). This difference was highly statistically significant (H=7.3, p=0.007).

#### 4.2.6 Estimated Disability of Patients

Estimated disability was assessed by the research team by judging what the impact of the injury

would have on the patient's quality of life.

#### 4.2.6.1 Severity of Disability

In 2000, 41% of patients were judged to have a mild disability while 60% of them had more disabilities. Two patients died as a result of their injuries (Table IX).

The difference in the number of deaths between the two study periods was not statistically significant (Fisher = 1.44, p=0.23).

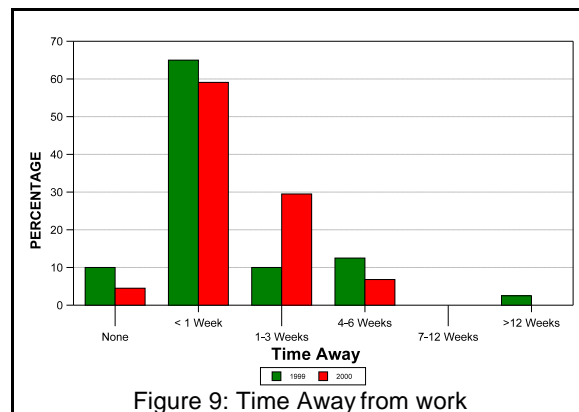
**Table IX: Severity of Disability**  
1999 versus 2000

	1999 n (%)	2000 n (%)
None	6 ( 5.4)	0 ( 0.0)
Mild	57 (50.9)	47 (40.5)
Moderate	25 (22.3)	49 (42.2)
Serious	16 (14.3)	18 (15.5)
Total	3 ( 2.7)	0 ( 0.0)
Dead	5 ( 4.5)	2 ( 1.7)

#### 4.2.6.2 Time Away from Work

In 2000, 38% of patients were employed while 29% were unemployed.

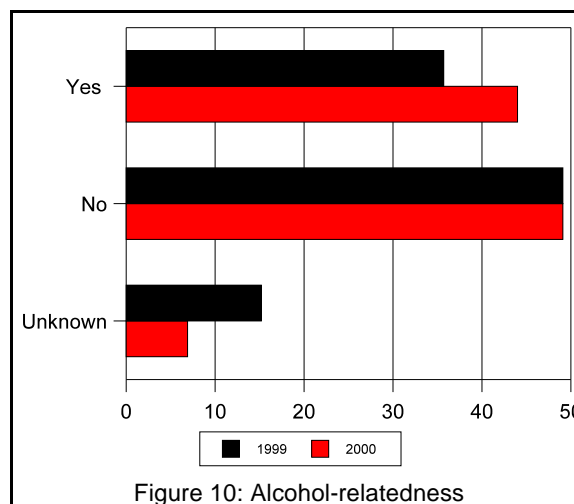
Of those employed, nearly 75% required at least a week off work (compared with 64% in 1999). Only one-quarter of patients required up to 12 weeks off work compared with one-third of patients in 1999 (Figure 9). These differences were not statistically significant.



### 4.3 Alcohol Usage

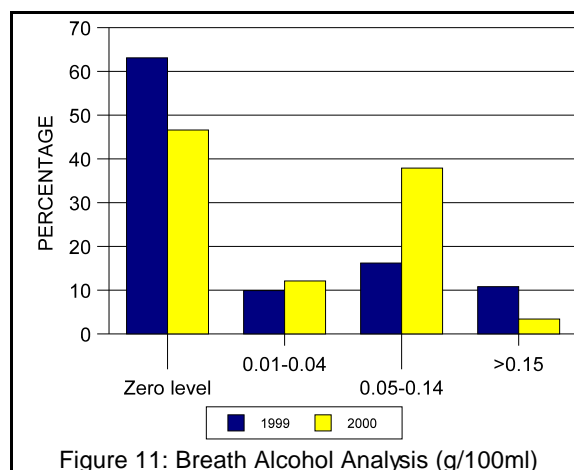
#### 4.3.1 Alcohol-relatedness

This parameter was assessed by either asking the patient whether he/she had used alcohol prior to their injury or by using clinical judgement in unconscious or uncooperative patients. In 2000, nearly 10% more patients said that they had used alcohol prior to their injury (Figure 10). The differences were not statistically significant.



### 4.3.2 Breath Alcohol Analysis

More patients admitted to the trauma unit during the course of the study in 2000 were breath alcohol concentration (BrAC) positive compared to 1999 (Figure 11). In addition, the proportion of patients with BrACs at or above the legal driving limit (0.05 g/100ml), was 14% higher. The mean BrAC for those with positive alcohol levels in 2000 ( $0.08 \pm 0.05$  g/100ml) was significantly lower than that the  $0.13 \pm 0.11$ g/100ml obtained in 1999 ( $t=2.38$ ,  $p=0.02$ ).



Two-thirds of the patients that were injured violently had positive alcohol levels. Patients who were

**Table X: Non-zero Breath Alcohol Levels 2000**

	Positives	%	Mean BrAC (g/100ml)	± Std Dev
Violence	40	64.5	0.08	0.05
Traffic	11	17.7	0.09	0.05
Non-traffic 'Accidents'	11	17.7	0.09	0.07

injured due to traffic and non-traffic ‘accidents’ had mean BrAC levels of approximately 0.09 g/100ml while those injured violently had slightly lower levels (Table X). There were only two drivers who had alcohol levels at or over 0.05 g/100ml.

In comparison with the study conducted in 1999, the 2000 study showed that:

- the proportion of patients who were injured violently and had positive BrAC levels increased by 5%; and
- the proportion of BrAC positive patients injured in motor vehicle collisions decreased by 10%.

### 4.3.3 Chronic Alcohol Usage

In 2000, 11.2% of the patients could not be interviewed because of the severity of their injuries or because they were too intoxicated to answer the four CAGE questions.

Of the remaining 103 patients who could be interviewed, 70% had a total CAGE score of zero compared to 82.6% in 1999 (Figure 12). A staggering 30% of patients had a total CAGE score of two or more indicating problem drinking or possible alcohol dependence. This was significantly higher than the 17.4% recorded in 1999 (ChiSq = 6.3, p=0.012).

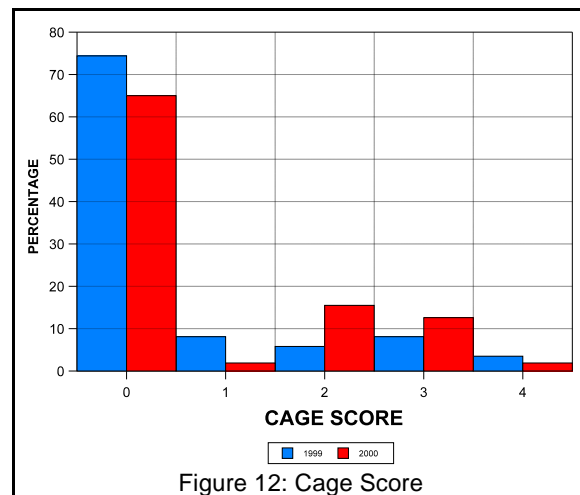


Figure 12: CAGE Score

### 4.3.4 Alcohol Trends

Between 1997, when the pilot alcohol and drug study was conducted at GSH, and the 1999 study period there was a decrease in BrAC positive patients, however, this was probably due to selection bias because the incidence of acute alcohol intoxication increased back to over 50% in 2000 (Figure 13).

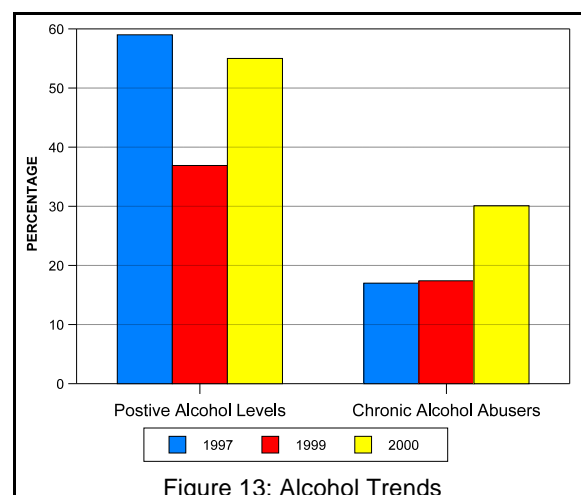


Figure 13: Alcohol Trends

Problem drinking was relatively stable between 1997 and 1999 but in 2000 there was a significant increase. This trend should be monitored in 2001.

#### 4.4 Illicit Drug Usage

Drug usage was assessed by means of self-report, the Multidrug kit and conventional pharmacological methods.

##### 4.4.1 Self-reported Drug Usage

About one in ten patients acknowledged using illicit drugs prior to their injury over the two study periods (Figure 14).

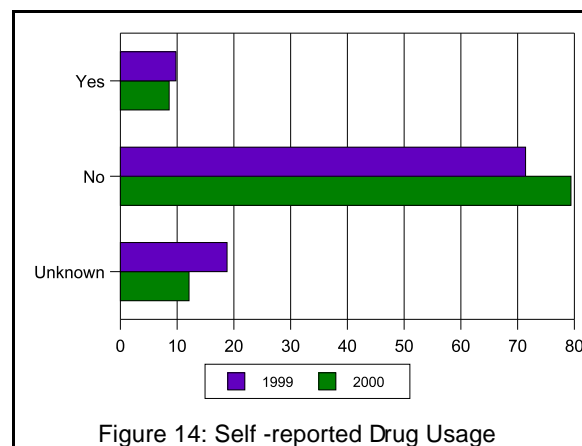


Figure 14: Self-reported Drug Usage

##### 4.4.2 Multidrug Screen Results

Drug screen results were obtained in 104 patients in 2000. The Multidrug kit screen for five drugs using a sample of urine. In 1999, 34.8% of patients were positive for at least one drug (some were positive for a combination of drugs). In 2000, 38.8% of patients were positive for at least one drug. This increase, although clinically significant, was not statistically significant. As can be seen by Table XI the bulk of the

**Table XI: Multidrug Screen Results**  
1999 versus 2000

	1999 n (%)	2000 n (%)
Amphetamine	0 ( 0.0)	1 ( 1.0)
THC	31 (29.5)	40 (38.5)
Morphine	7 ( 6.5)	8 ( 7.7)
Cocaine	6 ( 5.7)	3 ( 2.9)
Methamphetamine	0 ( 0.0)	0 ( 0.0)

increase in drug usage can be attributed to dagga smoking.

Seventy-eight percent of the cases who tested positive for cannabis and 67% who tested positive for cocaine had been injured as a result of violence.

#### 4.4.3 Pharmacological Analysis

Conventional wet analysis was undertaken on a sample of urine. As can be seen from Table XII, this analysis revealed that one-third of patients had used dagga (4% more than in 1999) and that there was a significant drop in the number of Mandrax smokers (ChiSq = 8.2, p=0.004).

**Table XII: Pharmacological Analysis**  
1999 versus 2000

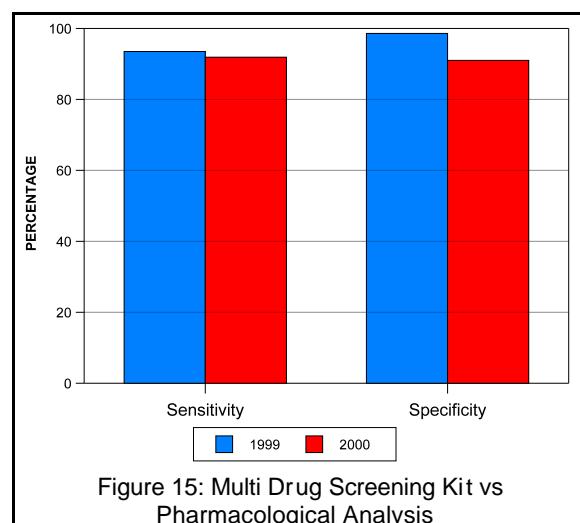
	Positive Result	
	1999 n (%)	2000 n (%)
Dagga	32 (30.8)	37 (33.9)
Mandrax	26 (25.0)	11 (10.1)
White Pipe	24 (23.4)	9 ( 8.3)

In 2000, only nine of the 109 patients (8.3%) had smoked a 'white pipe' prior to their injury compared with 23.4% in 1999. This result was also significantly different (ChiSq = 8.3, p=0.003).

#### 4.4.4 Multidrug Screen Kit versus Pharmacological Analysis

The Multidrug screening kit was found to be valid and accurate.

Comparing the kit to the pharmacological 'gold standard' produced a sensitivity of 93.5% (in 1999) and 91.9% (in 2000) and a specificity of 98.6% (in 1999) and 91.0% (in 2000) as can be seen in Figure 15. Consequently, this kit can reliably be used to assess cannabis in the urine of injured patients.



#### **4.4.5 Drug Trends**

There has been little actual increase in the prevalence of drug usage between 1997 and 2000. There are, however, slightly more cocaine users and less Mandrax users but this could reflect market trends and availability.

## 5. SUMMARY

The following summarises the trend data obtained by the Trauma and Drug Study in 1999 and 2000:

- patients were predominantly young males
- most injuries were due to violence
- most patients who were injured violently abused alcohol and/or drugs prior to their injury
- sharp objects and firearms were still a major cause of violence
- there was an increase in the proportion of firearm violence
- most of the patients who were involved in traffic collisions were pedestrians
- injuries most commonly occur after hours and on weekends
- there was an increase in the frequency of injuries to the upper extremities, face, thorax and abdomen
- there was a decrease in the frequency of injuries to the head, lower extremities and neck
- more than half of the patients seen at GSH trauma unit could have been treated at a less sophisticated medical facility
- patients required significantly fewer days in hospital in 2000 than in 1999
- most patients sustained injuries which were relatively minor and few were left with long-term disabilities
- approximately 60% of patients seen at GSH trauma unit are intoxicated with alcohol at the time of their presentation
- patients seen in 2000 had significantly lower alcohol levels than in 1999
- significantly more patients could be classified as chronic alcoholics in 2000
- there was a slight increase in the number of dagga smokers in 2000
- there was a significant drop in Mandrax and 'white pipe' users in 2000.

## 6. REFERENCES

Ryan R. *Drugs Violence and Governability in the Future South Africa : Crime and Policy Project*. Pretoria: Institute for Security Studies, Occasional paper No 22, May 1997.

Peden MM. Substance Abuse Surveillance among Trauma Patients. *Trauma Review* 1997;**5**(3):7-8.

Peden MM, van der Spuy J, Smith P & Bautz P. Substance Abuse and Trauma in Cape Town. *SAMJ* 2000; **90**:251-255.

Peden MM, Donson HJ, Maziko M. 1999. *Sentinel Surveillance of Substance and Trauma at GSH: The Trauma & Drug Study 1999. Final Report*. Cape Town: MRC, National Trauma Research Programme.