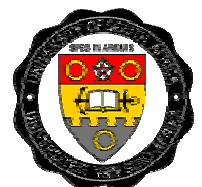


Violence and Injury Surveillance System

DACST Innovation Fund Project Number 11103

RAPID ASSESSMENT OF TRAUMA FACILITIES AT STATE HOSPITALS IN SOUTH AFRICA

Report compiled by
Violence & Injury Surveillance Consortium



May 2000

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Special thanks are due to the Medical Superintendents and nursing staff of the hospitals that participated in this study for compiling and providing us with their valuable trauma statistics. We hope that our envisaged surveillance system will eventually play a part in reducing their substantial workload.

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1. BACKGROUND

Violence constitutes an important public health challenge and in many countries this recognition has resulted in the criminal justice system being complemented by prevention oriented programmes aimed at potential victims and perpetrators of violence. These programmes are aimed not at the act of violence itself, but instead at the risk factors and primary causes of violence. This therefore requires the ongoing availability of accurate, relevant and timely information about factors such as victim age and sex; socio-cultural background; victim-perpetrator relationship; circumstances of attack, and the involvement of weapons, alcohol and drugs.

The information required is most efficiently and accurately obtained from the victims of violence, who therefore represent a key resource in its prevention. While such information is at least in part being collected for administrative purposes by the many mortuaries, hospitals and clinics around the country, its prevention potential has yet to be exploited.

Our proposed surveillance system includes three separate data collection components namely; non-natural mortality surveillance system, non-fatal violence and injury surveillance system and sentinel surveillance of substance abuse. The project is being co-ordinated by a Consortium comprising the Medical Research Council (MRC), the University of South Africa (UNISA) and the Council for Scientific and Industrial Research (CSIR).

The first component is the National Non-Natural Mortality Surveillance System (NMSS), which will produce and disseminate descriptive epidemiological information for deaths due to non-natural or undetermined causes that in terms of the Inquests Act of 1959 are subject to medico-legal investigation. The NMSS is currently running in ten centres in five different provinces, viz. mortuaries in Port Elizabeth and East London in the Eastern Cape, Cape Town in the Western Cape, Kimberley in the Northern Cape, Durban in KwaZulu Natal, and Pretoria, Roodepoort and Germiston in Gauteng. The pilot project is planned to incorporate at least one mortuary in each province prior to the project deadline of December 2000. The NMSS should eventually provide national coverage, and is seen as an integral component of both the wider health and crime information systems. Two papers, which discuss the methodology and preliminary results, were submitted to the South African Medical Journal in February 2000.

The second component is the sentinel surveillance of substance abuse at selected trauma treatment facilities in SA (both alcohol and illicit drugs are significant risk factors for violence and injury). The substance abuse study is currently being conducted in six health facilities in four cities around the coast of SA, viz. Cape Town, Port Elizabeth, Umtata and Durban. Preliminary results show that about 40% of patients test positive for drugs and a staggering three-quarters test positive for a substance (including alcohol).

The final component is the non-fatal violence and injury surveillance system, which will be based at selected state facilities, which treat trauma. The data will be complemented by injury data from sentinel clinics and, where possible, private hospitals and general practices. In order to determine an appropriate (and feasible) sampling frame, it was important to determine the extent of the national trauma caseload and more specifically the number of cases reporting to secondary and tertiary state facilities in each province. The information will be used to select sentinel sites for the non-fatal violence and injury component of the surveillance project. This report describes the results of a rapid assessment conducted to ascertain trauma caseloads for state facilities throughout South Africa.

2. METHODOLOGY

A database of all state secondary and tertiary health care institutions in South Africa was compiled and several data sources were consulted to ensure completeness. These included the Health System database from the MRC's Geographical Information Systems (GIS) unit, the Human Sciences Research Council's ReHMIS database and the Hospital and Nursing Yearbook for 1998. Telephonic calls were also made to all provincial Departments of Health to verify the existence of the facilities and obtain up-to-date facsimile numbers.

A questionnaire was developed (see Appendix A) to answer the following questions;

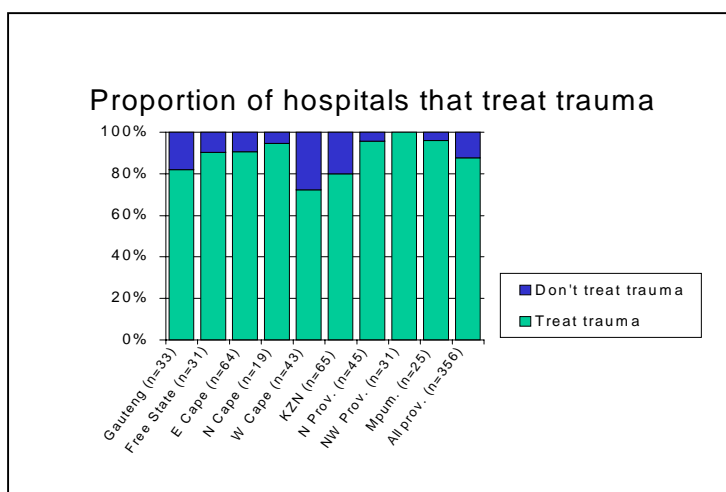
- 1) How many state facilities treat trauma patients
- 2) How many trauma cases are seen annually
- 3) Are routine statistics collected on trauma cases
- 4) What proportion of injuries are due to traffic, violence and other causes.

356 state facilities were identified in South Africa and questionnaires were sent out to all these hospitals on the 25th May 1999. Correspondence included letters to medical superintendents (Appendix B) with the attached questionnaire, a reminder letter dated 5th July 1999 (Appendix C), followed by a phone call and a repeat questionnaire dated 30th July 1999 (Appendix D). Medical Superintendents were asked to fax or post the completed questionnaires to the MRC at their earliest convenience. As the data was received it was captured into a database designed in Quattro Pro (Corel Corporation, 1997). The data was cleaned and analysed by MRC staff using EPI-INFO version 6.04 (Dean et al., 1990) epidemiological database software. No data was captured after the cut-off date of 31 August 1999.

There were several problems with the data. For example, the study was reliant on un-validated secondary data, which had been supplied by medical superintendents. Some of the hospitals completed the questionnaire despite not keeping a register of trauma statistics – some indicated that they had made a special count of trauma patients for the purpose of the study. Secondly, there was a slow response rate from some hospitals due to communication difficulties. Of the 356 questionnaires sent out, only 100 responses were obtained by the 29 June 1999 and by the end of the study period (31 August 1999) 252 responses were received (70.8%). The communication problems were most apparent in rural areas, particularly in the Eastern Cape where some hospitals had no fax machines or their telephone lines were down and others had to report to a higher authority before they could respond to our correspondence.

3. RESULTS

3.1 Distribution of trauma hospitals

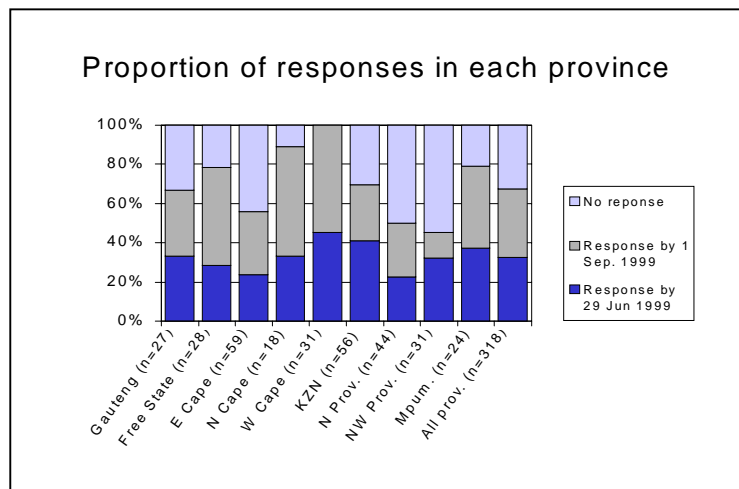


More than 80 % of all hospitals surveyed treated trauma cases. The Northern Province (96%), North-West Province (100%) and Mpumalanga (96%) had the highest proportion of hospitals treating trauma. The

lowest proportion of hospitals treating trauma was found in Gauteng (80%), KwaZulu-Natal (80%) and the Western Cape (72%). This may be because there are many specialist hospitals (for tuberculosis, psychiatric disorders or midwifery) in these regions

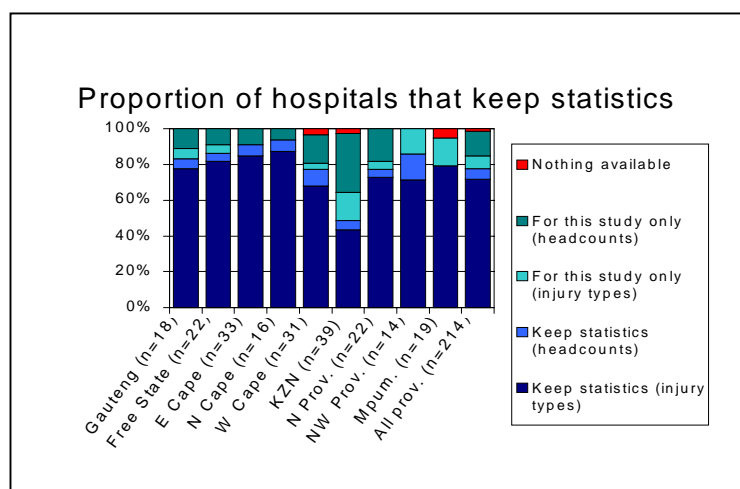
3.2 Distribution of responses

More than 60 % of all trauma-treating hospitals responded to the questionnaire by the deadline. Response rates varied considerably, with very high response rates measured in the Western Cape (100%) and the Northern Cape (89%), but low rates from the Eastern Cape (53%), Northern Province (49%) and the North-West Province (45%).



3.3 Existing hospital trauma surveillance systems

Headcount data were available from 203 of the 207 hospitals that responded to the questionnaire (98%). Most of the data (82%) were available from hospital trauma records, while (18%) of the hospitals collected statistics specifically for the purposes of this study. Injury categories (traffic, violence or other accident) were available for 83% of the facilities that responded.



3.4 Estimate of trauma caseloads

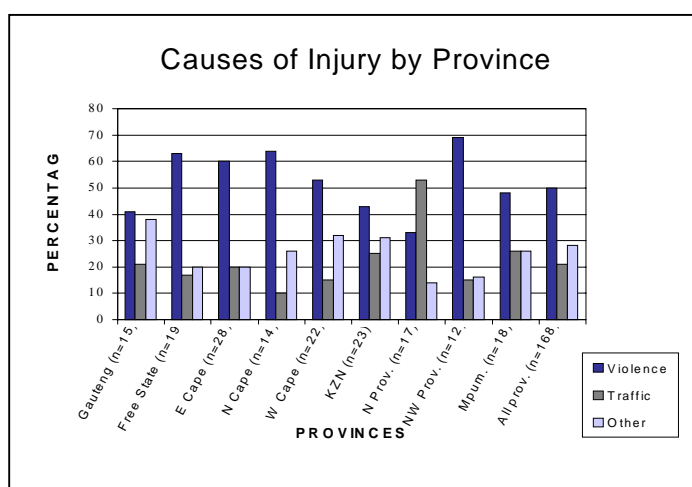
Approximately 1 million trauma cases were reported by the hospitals that responded to our questionnaire. Extrapolating the data by adding the number of missing hospitals multiplied by the median and mean caseloads in each province provided an estimate of between 1.25 million and 1.5 million trauma cases reporting to state hospitals nationally.

Table 1. Trauma caseloads by province

	# hospitals supplying case-load info 1	# trauma cases from questionnaire responses 2	Mean # trauma cases per facility 3	Median # trauma cases per facility 4	No headcount data available 5	Total # trauma cases based on mean 2+ (5x3)	Total # trauma cases based on median 2+ (5x4)
Gauteng	18	198406	11023	7522	9	297613	266104
Free State	21	79626	3792	1821	7	106170	92373
E. Cape	33	150705	4567	2000	26	269447	202705
N. Cape	15	50414	3173	1621	3	59933	55277
W. Cape	30	236032	7868	6297	1	243900	242329
KZN	38	200144	5267	2000	18	294950	236144
N. Prov.	22	52112	2369	949	22	104230	72990
N.W. Prov.	14	36954	2639	1301	17	81817	59071
Mpumalanga	18	41759	2320	2248	6	55679	55247
Sum of all provinces	210	1028896	42549	25964	108	1513739	1282240

3.5 Distribution of type of injury

Inter-provincial differences in the various types of injury are apparent in the table below. The Northern Province is the province with the greatest proportion of non-fatal



trauma cases due to traffic accidents (more than 50%) followed by KwaZulu Natal (25%). The largest proportion of injuries due to violence was recorded in the North-West Province (69%). The Eastern and Northern Cape and the Free State, also featured prominently with violence

accounting for more than 60 percent of all non-fatal trauma cases.

presenting to secondary and tertiary hospitals, reported to day hospitals (J. Bopape, personal communication). Furthermore, in the 1990 Cape Metropolitan Study 25% of trauma patients were treated at private hospitals (van der Spuy, 1996). This indicates that total annual hospitalisations for trauma easily exceed two million cases and are closer to three million cases per annum. This represents a rate of between 50 and 75 per thousand population.

There is a paucity of internationally comparable figures. In Thailand in 1983 nearly two million injured people were treated in hospitals with 31 000 deaths (Berger & Mohan, 1996). In India, with a population of nearly 1 billion people, injury victims occupy 15% of all hospital beds and 1 million disabling injuries annually can be attributed to burns alone. Estimates as to the annual number of injury related deaths range from 130 000 to 650 000 (Mohan D, 1984).

Surveillance systems in first world countries often only consider hospital admissions. New Zealand had 58 457 hospital admissions in 1983. If hospital admissions comprised 20% of all injuries requiring medical attention, the New Zealand total would be approximately 300 000 cases (Langley and McLoughlin, 1987). Similarly, in the United States there are 2.8 million hospital admissions each year. (Baker et al., 1992). Based on the same extrapolation, this means that about 14 million people require attention for injuries annually. As the United States has a population of 250 million, the rate is approximately 56 per thousand population.

The study gives valuable insight on the non-fatal trauma patterns in South Africa's nine provinces. The results will be used to select sentinel hospitals for the collection of more detailed and representative trauma information within each province. Selected facilities will use a data collection form which was developed and piloted at two facilities, GF Jooste Hospital in Cape Town and King Edward Hospital in Durban (Appendix E). Preliminary results from doctors completing the form have yielded positive results.

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VIOLENCE AND INJURY SURVEILLANCE FOR VIOLENCE PREVENTION

RAPID ASSESSMENT OF TRAUMA FACILITIES IN SOUTH AFRICA

To be completed by the Medical Superintendent or Head of Casualty/Trauma Unit for each hospital in South Africa.

DATE OF QUESTIONNAIRE COMPLETION

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HOSPITAL

CITY / TOWN

NAME & DESIGNATION OF PERSON COMPLETING QUESTIONNAIRE

Telephone number

Fax number

PLEASE ANSWER THE FOLLOWING FOUR QUESTIONS

Do you have a casualty department / trauma unit at your facility which treats patients with injuries ?	YES	NO
--	-----	----

If yes,

Approximately how many fresh trauma cases are seen in your casualty department / trauma unit annually? (this need not be an exact number, a good estimate is acceptable)	
---	--

Do you keep statistics on trauma cases treated at your facility?	YES	NO
--	-----	----

If yes, approximately what proportion are due to :

traffic injuries	
violence	
other "accidents"	

Please **fax** this form back to (021) 938 0381 or (021) 938 0410 at your earliest convenience or post it to Dr MM Peden, National Trauma Research Programme, Medical Research Council, PO Box 19070, Tygerberg 7505.

Violence and Injury Surveillance for Violence Technology and Business Development

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MEDICAL RESEARCH
COUNCIL

25 May 1999

The Medical Superintendent
Hospital
Address



Dear Sir/Madam

NATIONAL INJURY SURVEILLANCE STUDY

In line with the prioritisation of violence and injury prevention research by the National Crime Prevention Strategy and the Minister of Health, we are in the planning phase of a National Non-Fatal Injury Surveillance System. It is being funded by the crime prevention focus of the Department of Arts, Science, Culture and Technology's innovation fund, and implemented by a consortium made up of the Medical Research Council, the CSIR and UNISA. The work is closely keyed to the Department of Health activities and forms an integral part of the national health and violence prevention plan coordinated by Prof. M. Feeman, Director of the National Department of Health's Mental Health and Substance Abuse Directorate.

Before deciding on a sampling strategy for the above surveillance system it is essential that we have a trauma "head count" from all hospitals in South Africa which treat injuries. To this end, we would appreciate it if you (or the head of your casualty department) could indicate on the accompanying questionnaire whether your facility sees trauma patients and if so, approximately how many patients you see annually (the latter do not have to be exact figures).

We would appreciate it if you could fax or post the questionnaire back to the MRC at your earliest convenience (see contact details on the questionnaire).

We appreciate your time and effort and look forward to your reply. Should you have any queries, please contact Margie Peden on 021 938 0407 or 082 468 7354 or mpeden@mrc.ac.za.

Your sincerely

Alex Butchart
Professor and Deputy Director
Project Leader : Violence and Injury Surveillance for Violence Prevention

cc. Prof. M. Freeman, DOH
Mr Anthony Cooper, CSIR
Dr M. Peden, MRC



UNISA



MEDICAL RESEARCH
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5 July 1999

The Medical Superintendent
Hospital
Address

Dear Sir/Madam

REMINDER : NATIONAL INJURY SURVEILLANCE STUDY

Late in May we sent you a letter outlining the proposed national non-fatal injury surveillance system which forms part of the National Department of Health's activities in violence prevention.

We requested that you complete a short questionnaire on the number and type of trauma patients seen at your facility so that we could develop a representative sampling strategy for the above surveillance system. To date our records show that this *Rapid Assessment of Trauma Facilities in South Africa* questionnaire has not been returned by your hospital.

We would appreciate it if you could fax or post the questionnaire back to the MRC at your earliest convenience (see contact details on the questionnaire).

We appreciate your time and effort and look forward to your reply. Should you have any queries or should you require another copy of the questionnaire please contact Margie Peden on 021 938 0407 or 082 468 7354 or mpeden@mrc.ac.za.

Your sincerely

Dr Margie Peden
Acting Project Leader : Violence and Injury Surveillance for Violence Prevention

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Prof A. Butchart, UNISA