

Conclusion

Health sector research focusing on injury mortality and morbidity is critical for the effective design, coordination and implementation of health interventions, policy formulation, and service delivery (Global Forum for Health Research, 2001)¹. In short, effective intersectoral development cannot occur without a firm and rigorous research foundation, including the provision of timely injury surveillance data on the 'who', 'what', 'when' and 'how' of fatal and non-fatal injuries. This synergistic relationship between research and development thus implies that the funding of health sector research would realise the following foreseeable outcomes:

1. The development of improved technologies with which to engage the health concerns and conditions of South Africa in relation to data-described magnitude;
2. Increasing quality in the administration of health care delivery and rigour in the development of preventive and curative interventions; and
3. Enhanced engagement with potential cross-sectoral health-related issues.

The urgent need for quality empirically generated data on South Africa's injury burden of disease should not be ignored. Demand for data on resource flows is varied. Some sectors require the data to inform policy and ultimately guide action; others require data for advocacy, and yet others as indicators of neglected areas². The certainty is that health sector injury data are in demand.

Current major policy decisions tend to be informed by limited data, skewed media reports and political considerations. President Mbeki's call to revisit South Africa's programme for containing the country's burden of disease provides a fertile and timely opportunity to link the production of viable knowledge-driven services to significant socio-political and institutional processes. Such linkages can help science to forge creative roles and contributions in a society desperately in need of empirically driven policies and services.

Knowledge accessibility that traverses the traditional rubrics between Government, academia and the private sector introduces new possibilities for a knowledge-driven service guaranteed by science that is available to both the private and public health sectors in South Africa.

Following a worldwide trend, various South African sectors are echoing a demand for data as a means for rigorous policy calibration and intervention. The South African health sector is no exception an extended and sustainable NIMSS will therefore respond to such a demand.

The importance of this project has recently been highlighted by two key developments. The first was the launch of the World Health Organisation's World Report on Violence and Health in Port Shepstone in December 2002, at which the Minister of Health, Dr Manto Tshabalala-Msimang extensively quoted statistics from the NIMSS and undertook to continue prioritising and improving the collection of injury surveillance data in South Africa. The other important initiative is the ratification of this World Report by the African Union, which has also requested that member states declare 2005 an "African Year of Prevention of Violence".

In short, the expanded and fully developed NIMSS will contribute to the phased development of improved morbidity and disability data for South Africa. The information system would also ultimately lend itself to, among others, studies on risks and determinants of injury morbidity and mortality, burden of injuries and the costs of injuries, and to the development of projection models.

It is at the city level, however, that the rapid translation of injury data to prevention may be most efficiently engineered. The nature of city governance, with its comparatively streamlined information infrastructure and relatively fluid systems for decision- and ultimately policy- making locate cities as receptive sites for the dissemination of evidence-based reporting mechanisms. City-wide evidence-

1. Global Forum for Health Research. (2001). Monitoring Financial Flows for Health Research. WHO: Geneva.

2. Global Forum for Health Research. (2001). Monitoring Financial Flows for Health Research. WHO: Geneva

based injury reports are crucial to the development of effective city-level injury prevention programmes.

This report has established both the substantial prevalence and magnitude of injuries in South Africa's four largest metropolitan cities (Johannesburg, Durban, Cape Town and Pretoria/Tshwane), which impose a significant social and economic burden that threatens development strategies and undermines South Africa's potential as a general visitation and tourism destination.

Information is, however, only a single component in progressing towards safer and injury-free cities. This report therefore represents a challenge to local government, non-governmental organisations, community-based organisations, researchers, practitioners and other stakeholders to discuss ways through and by which such information can — and indeed must — be translated into the creation of concrete injury prevention policies and practices, in addition to strengthening existing safety promotion responses.

The World Health Organisation's World Report on Violence (2002) and the United Nation's report on the Global Road Safety Crisis (Item 162 of 2003) provide recommendations to mobilise action in response to violence and injury, and it is with reference to these two reports that we propose the following:

- A systemic review of the South African violence and injury sector should be conducted along the lines of the two World Health Organisation World Reports on Violence (2002) and Road Traffic Injuries (2004). Such a review will provide information on the magnitude and risks for injuries and the many social responses that require evaluations. The proposed review may also serve to highlight gaps between data and action.
- Effective resource allocation to treat and prevent injuries can only be optimised through a coordinated national, provincial, and city or regional programmes. These programmes should be housed within the health departments, which can act as focal points, but should also include interdepartmental collaboration with directorates at all levels to ensure ownership, and multi-sectoral partnership with the non-governmental, research and private sectors. See programme depicted in Table XXIII.
- Prevention programmes should be underpinned by comprehensive fatal and non-fatal injury registration systems.
- Research and implementation priorities should be defined on the causes, consequences, costs and prevention of violence and injuries.

- Primary and secondary prevention responses should be strengthened.
- Prevention should be integrated into social and educational policies, thereby promoting gender and social equity.
- Collaboration and exchange of information on injury prevention should be increased.
- Adherence to international treaties, laws and other mechanisms to protect human rights should be promoted, and practical, internationally agreed responses to the global drugs and arms trades should be sought.
- Prevention programmes should draw on international bench-marked best practices, especially those shown to be effective in low-to-middle income countries.

Public health interventions in the USA, Canada, Europe and Australia have already demonstrated that deaths due to violence, traffic and other unintentional incidents (such as fires, falls or drowning) are preventable. The core public health strategies or platform that may be directed at injury reduction and prevention includes legislative, engineering, education, environmental and community mobilisation.

These strategies are supported by rigorous epidemiological or information-gathering strategies that inform the different stages in public health prevention programming. The utility of the NIMSS Annual Report can only be measured by the extent to which the information generated is effectively translated into injury prevention and safety promotion action and policy-making.

Information on the prevalence, magnitude, patterns, causes and consequences of injury has value if it is effectively used to prevent injury and save lives.

Table XXIII

Examples of prevention strategies for violence, traffic and child injuries by ecological context

	Violence	Traffic	Child burn injuries
Individual	<ul style="list-style-type: none"> • Social development programmes • Incentivising education • Vocational training • Firearm control 	<ul style="list-style-type: none"> • Strict enforcement of drunk driving and speeding laws • Pedestrian visibility campaigns • Harm reduction approaches (e.g. sensible drinking, designated driver) • Rehabilitation of chronic offenders • Behaviour modification, skills transfer and psycho-educational support • Rehabilitation of substance abusers and individuals with impulse control disorders. 	<ul style="list-style-type: none"> • Educational campaigns: "Stop, drop and roll" and the "learn not to burn" programmes
Relationship	<ul style="list-style-type: none"> • Training in parenting • Home visitation • Mentoring programmes • Family therapy 	<ul style="list-style-type: none"> • Increase responsibility and provide child traffic safety skills to caregivers • Training in parenting • Family therapy • Encourage safe and responsible behaviour on an interpersonal level • Promote accompaniment of younger children by parents or older siblings 	<ul style="list-style-type: none"> • Parenting skills: child development and safety product operation • Home visitation
Community	<ul style="list-style-type: none"> • Monitoring levels of lead and other toxins • Increase the availability of child-care facilities and pre-school enrichment programmes and extracurricular activities for children • Community policing • Reduce availability of alcohol • Adult recreational programmes 	<ul style="list-style-type: none"> • Monitor magnitude and severity of injuries • Increase the availability of child-care facilities and pre-school enrichment programmes and extracurricular activities for children • Reduce availability of alcohol • Traffic calming • Increase separation of vehicles and pedestrians • Provide safe recreational areas (and safe access) • Improve public transport • "Safe routes to school" initiatives • Scholar patrols • Address other social problems that impact on traffic safety (e.g. crime and municipal services) 	<ul style="list-style-type: none"> • Monitoring safe home construction • Make available accessible, quality child-care facilities
Societal	<ul style="list-style-type: none"> • Deconcentrate poverty • Reduce income inequality • Reduce media violence • Public information campaigns • Reform educational systems • Strengthen and improve police and judicial systems • Reform education systems 	<ul style="list-style-type: none"> • Monitor magnitude and severity of injuries • Deconcentrate poverty • Curriculum development • Reduce income inequality • Public information campaigns • Encourage responsible societal norms and value systems 	<ul style="list-style-type: none"> • Poverty alleviation • Reducing income inequality • Public information campaigns • Legislation development and enforcement: Clothing and cigarette flammability standards; stove design; safe home construction.

NIMSS data collection form

Mortuary _____ Police No. _____ Officer collecting body (Surname) _____

PM no. _____ PM Date

d	d	m	m	y	y	y	y
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 Pathologist (Surname) _____

Date & Time of Injury

d	d	m	m	y	y	y	y
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h	h
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 Race

A	B	C	W	U
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 Sex

M	F	U
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Date & Time of Death

d	d	m	m	y	y	y	y
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h	h
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 Age Years

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 Months

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Medical treatment of injury prior to death (check only ONE) 1 None 2 Emergency care at scene 3 Hospital care

Province of injury (may differ to province of death) **Scene of injury** (may differ to scene of death)

1	Gauteng	7	Mpumalanga	1	Private house & yard (inc. pool)	9	Medical service area
2	W. Cape	8	Northern Province	2	Residential institute	10	Industrial & construction area, mine
3	K.Z. Natal	9	North West	18	Informal settlement/squatter camp	11	Farm, primary production area
4	E. Cape	10	Unknown	3	Bar, shebeen, N'Club, disco	12	Sea, lake, river, dam
5	N. Cape	11	Other (specify) _____	4	Amusement park, sports area	13	Open land, beach
6	Free State			5	Road/street/highway	14	Countryside
				6	Railway track, station	15	In custody, prison
				7	Shop, bank, retail area	16	Place unknown
				8	School, educational area	17	Other (specify) _____

Town of Injury _____

Suburb or District _____

External Cause or Circumstance of Injury

1	Firearm Discharge	9	Fall/push/jump from height	17	Motor vehicle Driver	24	Abandoned baby
2	Sharp Object	10	Other fall/push/jump	18	Motor vehicle Unspecified	25	Electrocution
3	Blunt Object	11	Crushing	19	Railway casualty	26	Explosive blast
4	Strangulation, suffocation, asphyxia	12	Choking, aspiration	20	Bicycle, motor cycle	27	Natural cause
5	Hanging	13	Drowning, immersion	30	Aviation casualty	28	Unknown
6	Poisoning, ingestion	14	Lightning	21	Medical Procedure	29	Other Specific Cause
7	Poisoning, gassing	15	Motor vehicle Pedestrian	22	Sudden infant Death		
8	Burn	16	Motor vehicle Passenger	23	Abortion, still birth		

Apparent Manner of Death

1 Homicide 2 Suicide 3 Accident 4 Natural 5 Undetermined

Samples Taken (check all)

1 None 2 Blood 3 Tissue 4 Other fluid

Alcohol and Other Substances (for completion by surveillance consortium staff)

Blood Alcohol Level

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 Eye Fluid Alcohol

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 Other Substances (Specify) _____

Appendix II

Participating mortuaries, 2003 (N = 24 600)

Province	City	Mortuary	TOTAL [#]	City data [§]
Eastern Cape	East London	Mdantsane	421	
		Woodbrook	983	
	Port Elizabeth	Gelvandale	549	
		Mount Road	327	
		New Brighton	727	
Gauteng	Johannesburg	Diepkloof	1663	1567
		Germiston	2489	363
		Johannesburg	2470	2369
		Roodepoort	1338	462
	Pretoria/Tshwane	Bronkhorstspuit	173	
		MEDUNSA	633	367
		Pretoria	1838	1657
KwaZulu-Natal	Durban	Chatsworth	838	836
		Gale Street	2382	2052
		Phoenix	1403	1338
Mpumalanga		Balfour	53	
		Barberton	11	
		Carolina	2	
		Delmas	40	
		Ermelo	133	
		Groblersdal	41	
		Hazyview	109	
		Komatipoort	143	
		Nelspruit	212	
		Piet Retief	99	
		Sabie	48	
		Secunda	24	
		Standerton	8	
	Volksrust	71		
Northern Cape	Kimberley	Kimberley	402	
North West*	Klerksdorp	Klerksdorp	197	
		Wolmaranstad	10	
		Potchefstroom	136	
Western Cape	Cape Town	Salt River	2403	2370
		Tygerberg	1962	1935
	Stellenbosch	Stellenbosch	262	
TOTAL			24 600	

* Only five months' data for North West Province.

The total includes undetermined deaths.

§ Data from outside the city boundaries were excluded from the city analysis in chapters 2-6.

Population data

The provincial population growth estimates from 2001 to 2003 are summarised in Table XXIV below.

Table XXIV

Provincial population growth estimates based on ASSA projections, 2001 to 2003*

	2001 (Census)	2003 (actuarial)	% growth
Western Cape	4 478 733	4 615 965	3.06
Kwa-Zulu Natal	9 348 732	9 556 833	2.23
Gauteng	8 927 110	9 142 158	2.41

Table XXV shows the city populations that were used in the calculation of the fatal injury rates.

Table XXV

Projected city populations based on ASSA provincial growth estimates, 2001 to 2003

	Province	2001 (Census)	Estimated growth (%)	2003 (projected)
Cape Town	Western Cape	2 893 247	3.06	2 951 842
Durban	Kwa-Zulu Natal	3 090 122	2.23	3 133 006
Johannesburg	Gauteng	3 225 812	2.41	3 337 138
Tshwane	Gauteng	1 985 983	2.41	2 054 521

*www.assa.org