The data related to the cases of drowning in South Africa and the implications of this.

Dhaya Sewduth,
voluntary President: Lifesaving South Africa.
Surf House, Durban, South Africa

The task of compiling statistics on drowning fatalities in South Africa is a challenging one indeed. The difficulty in collecting the data is dependent on the availability of such statistics in state departments and attempts to source data are frustrating and often futile. It would appear as if there is a non-functional central registry, or if there is one that it is not updated.

The most obvious departments to source drowning statistics is the South African Police Services (SAPS) as the legal requirements of the country dictates that the only department which can release statistics of death by unnatural causes is the Police Department. However, the stark reality is that it seems that this is one of the departments whose data base is far from updated. The immediate implication is that the figures released are outdated and unclear. It is also expected that Department of Home Affairs, which has as one of its core functions to keep a registry of births and deaths, would be helpful but that department also seems to be inefficient in keeping analyses of death records.

The drowning reports seem under-reported primarily because there is no national drowning prevention strategy that governs the need to ensure that the statistics are updated and accurate. Furthermore, with the fact that there is no national water safety awareness, the mortality rates due to drowning is not a priority in SA and lags behind in attention to more serious causes of death, such as road accidents, crime and the aids pandemic.

Lifesaving South Africa (LSA), the national authority on water safety and voluntary lifeguard services in South Africa, has a responsibility to reflect on the statistics and advise on the preventative steps that need to implemented. However, the figures that LSA reports on are primarily the one that the SAPS provide.

The most recent report on drowning statistics is contained in a study released in 2004 conducted by the Medical Research Council (MRC) of SA. Relevant to this study is the MRC / UNISA (University of South Africa) unit called the Institute for Injury and Safety Prevention. This unit has established the National Injury Mortality Surveillance System (NIMSS) which has released its broader report on the "Leading causes of death among children in South Africa" (MRC, December 2003). A specific section of that study is "A profile of fatal drownings in South Africa" (2004).

The study has largely been focussed in the urban areas which obviously marginalise the rural areas, where it is believed that the incidents of death by drowning are greater in the inland waterways (dams and rivers) than along the coastline. Again while there is no statistics to back up the assumption, the fact that there is lifeguard services along the main designated beaches along the coastline suggests that the preventive and emergency measures does contribute towards the lower statistics of drowning in the ocean. Whereas in the inland there are extensive lengths of rivers and large tracts of dams and lakes that are not patrolled at all.

It is accepted that the NIMSS acknowledges the difficulty in gathering data and states in its report that information on mortality

> "has been missing from the national vital statistics on causes of death since 1991, and there are no indications that the situation will change in the near future." (NIMSS report, 2004:1).

The researchers involved in the MRC study compiled statistics from mortuary records countrywide. Again, the statistics were largely accessed from the urban based mortuaries with a selection of about 14 mortuaries in rural areas in one province only. The NIMSS advises that the information that it produces and disseminates for deaths due to non-natural causes has to be in keeping with the legislation that is subject to medico-legal investigation which again could rule out accurate figures especially if deaths by drowning are not investigated thoroughly by the relevant authorities.

The following statistics, graphs and inferences are taken directly from the NIMSS fatal drowning report for the period 2001-2004:

Cause of drowning

CAUSE	2001	2002	2003	2004	TOTAL
Homicide	25	37	18	14	94
Suicide	14	11	3	7	35
Unintentional	453	495	416	460	1824
Undetermined	106	118	122	86	432
Total	598	661	559	567	2385

Of the 567 cases of drowning reported in 2004, 81.1% were attributed to unintentional causes, while small percentages were attributed to homicide and suicide. At least 15.2 % were not determined due to the pending court investigations at that time.

Demographics:

YEARS OF AGE	2001	2002	2003	2004	TOTAL
< 1	17	13	14	19	63
1 – 4	87	103	94	89	373
5 – 9	67	42	48	40	197
10 – 14	35	49	37	68	189
15 – 19	38	44	38	36	156
20 – 24	44	46	43	41	174
25 – 29	43	42	33	49	167
30 – 34	32	47	29	40	148
35 – 39	42	47	33	39	161
40 – 44	27	38	33	27	125
45 – 49	25	25	18	25	93
50 – 54	16	26	18	13	73
55 – 59	14	14	5	9	42
60 – 64	9	13	8	9	39
65 +	15	14	13	11	53
TOTAL	511	563	464	515	2053

Children under the age of 15 years accounted for nearly 42% of all fatal drowning cases in 2004. Compared to other statistics of mortality rates among children, it can be seen that drowning is the second highest cause of accidental death after road accidents among children in that age group. From their research the NIMSS also inferred that the most common age for drowning was 2 years old accounting for some 6.4 % and the average percentage for the under 15 age group was 12.5 %

Although not represented in the table above, but the statistical graphs of the NIMSS study shows that the drowning cases was more prevalent among males (80.1%) and even if one had

to examine the age category of under 5 years old, then the bias in favour of the male gender was almost 68.5%.

Scene of drowning

SCENE	2001	2002	2003	2004	TOTAL
Private Residence	129	147	131	102	509
Residential inst.	6	15	14	11	46
Bar / Shebeen	0	1	1	0	2
Amuse/ Public Pl	13	16	10	14	53
Urban Rd	1	12	4	0	17
Railway	0	5	0	0	5
Retail	0	1	1	0	2
School	10	4	1	3	18
Medical Service	3	4	9	0	16
Industrial	5	4	6	6	21
Farm	6	18	11	8	43
Sea/ River/ Dam	383	324	264	349	1320
Open land	5	11	2	0	18
Countryside	1	8	10	0	19
In Custody	0	1	0	0	1
Infor Settlement	6	8	4	16	34
Unknown	26	27	79	58	230
Other	4	10	12	0	26
	598	656	559	567	2380

The majority of drownings occurred in the sea, lake or dams (61.6%) which are quite obvious as these environments pose the most risks. Although not distinguishable in this table, the statistics maintained by Lifesaving South Africa (LSA) shows that the figure is greater for the inland waterways than for drowning cases along the coastline. However 18.0% of the drowning cases occurred in swimming pools in private residences as well as a further 3% in swimming pools in parks or leisure resorts which is an alarming figure as it would be expected that these environments would be serviced by lifeguards. Although the figure for drowning cases in pools of water or streams around informal settlements (slums) is reflected at 3%, our own observations is that this figure is on an increasing trend as more and more informal settlements (slums) sprout up and the victims, often young children, having no recreational facilities often play in rivers and spruits (streams) which often become instant death traps during the rainy seasons.

When drownings occur.

The report concluded that drowning are more common during the summer months in South Africa, and that was quite expected as the hot and sunny weather often drives people to aquatic recreational sites. It was also expected that the highest number of drowning cases occurred on a Sunday (17.8%) as most people engaged in recreational, sporting and leisure activities on that day. But what was inexplicable was that the second highest percentage (16.8%) of drowning cases occurred on a Tuesday.

Alcohol-relatedness of drownings

As post-mortems on all victims of non-natural deaths include analysis for blood-alcohol levels in terms of the relevant legislation in South Africa, particularly if such analysis occurred 12 hours of the injury/ incident and if the victim is older than 10 years old. The findings from the NIMSS study showed that almost 43.6% of the drowning cases had positive

blood-alcohol levels. 40% of the cases had levels at or above 0.05 g/100ml (the proxy level for drivers) at the time of their death. The average BAC levels to be 0.18 +-.0.9g/ 100ml. These results indicate that alcohol has a significant association with drowning.

Implications of the Study:

What has become clear though that is that the mortality statistics reveals a trend that places drowning as the second highest cause of accidental death after road accidents among children after up to the ages of 15 years. Furthermore, some of the inferences from the study show the following trends:

- Each year an unacceptable number of people drown
- 80% of drowning victims are male
- The vast majority of drowning accidents occur in unguarded areas
- 60-70% of SA coastline of some 3500 km is unguarded
- 89% of drowning victims were not wearing personal flotation devices
- Many national and provincial parks have unguarded bodies of water and some sites apply a "No Swimming" or "Swim at your own risk" policy.

The fact that the mortality statistics are unreliable, impacts on the response to curb or reduce the cases of drowning. If the government departments are not proactive in their approaches to prevent drownings, then the matter becomes even more difficult for the non-profit organisations like Lifesaving South Africa, whose operations are directed and implemented largely by volunteers. With the scarce resources available to non-profit and voluntary organisations, the task becomes more challenging to address. Updated and reliable statistics would ensure that such scarce resources are put to effective use to address the drowning problem in the areas that need addressing. In the current context the approach to address the problems related to cases of drowning is largely reactive, ad hoc and more a case of taking "shotgun blasts in the dark."

This dire situation must be examined against a backdrop of other studies conducted in South Africa. The Department of Sport and Recreation commissioned the Human Sciences Research Council (HSRC) study in 2000 on participation rates in sporting activities revealed that only 1 % (one percent) of the South African population participated in swimming activities. While this figure is believed to be "overstated", with participation figures often being estimated at 10-14% of the population who can swim or have access to water safety education, the fact of the matter is the figure of those who can't swim or do not have access to water safety programme is extremely high.

The MRC report does acknowledge that "trained lifeguards has had a positive effect on drowning prevention in South Africa" and there seems to be a growth in state sponsored water safety and learn to swim programmes, but drowning still remains in the top three causes of unintentional death especially among young children.

The years of advocacy work and lobbying of government seems to opening a few doors. Lifesaving South Africa has delivered on water safety programmes in rural areas on behalf of some of the Provincial Sports Ministries, while another sports federation, Swimming South Africa (SSA) has concluded a partnership agreement to run the Rural Splash learn to swim programme for the Department of Water Affairs and Forestry (DWAF).

However while these interventions are laudable, they may represent mere pockets of excellence. The solution lies in more sustainable programmes to meet the nation's needs to become water safe. The biggest criticisms is that a range of organisations such as LSA, SSA, and so on, are all literally "doing their own thing" without co-ordination and joint ventures.

There has to be value of joint initiatives, pooling of resources, working collaboratively rather than in competition and at cross purposes.

Recommendations:

The writer believes that the annual figures of drowning is unacceptably high and can be significantly reduced if the necessary preventative steps can be implemented countrywide. A starting point would be the legislation and policies which compels authorities to ensure that appropriate measures are taken to prevent unnecessary drowning by undertaking such steps, for example:

- Clear and understandable signage where aquatic sites cannot be patrolled
- Provision of competent lifeguards at all aquatic recreational sites
- Fencing off areas of high risk such as canals and dams
- Providing bridges or safe means of crossing rivers and estuaries for schoolchildren who have to travel to and from schools daily by crossing such waterways.

Lifesaving South Africa, with its 73 year history of voluntary lifesaving community service to the nation, expertise in water safety as well as its massive contribution towards youth development and tourism support advocates the establishment of Water Safety Councils (WSC) to address the widespread goals of water safety and drowning prevention.

The Water Safety Councils must be statutory bodies to be given the authority to deal with wide-ranging policies and guidelines. They need to exist at the three tiers of government: national, provincial and local. The representation needs to be composed of a range of stakeholders from:

Government:	Water Affairs, Environmental Affairs, Education, Provincial and Local Government, etc
Emergency & Rescue:	Ambulance Services, Police, NSRI, etc
Voluntary/ Sports:	Lifesaving South Africa, Swimming South Africa, Rowing South Africa, etc

The terms and references of such structures would be captured in broad principles such as advising and developing policies and guidelines on water safety and drowning prevention. This could be the source of the law-makers developing the necessary legislation that is missing in the country's statutes. Furthermore such Water Safety Councils could provide the necessary framework to, inter alia:

- Co-ordinate the efforts of the various "pockets" of water safety and learn to swim programmes to achieve greater levels of efficiencies and throughputs.
- Determine the content that would go into the national schools curriculum on water safety education
- Design and co-ordinate national and provincial water safety campaigns
- Evaluate , monitor and assure the quality of all of the collective efforts of the role players in ensuring that the drowning statistics are curbed and reduced

The details of the role and responsibilities of the WSCs are not outlined here, as there is access to research on the efficacy of similar structures in countries like Australia, New Zealand and Ireland. These could form the international benchmarks against developments in our country can be measured.

References:

Reports:

1. H. Donson (ed). (2004). National Injury Mortality Surveillance Systems (NIMSS) – A profile of fatal drownings in South Africa : 2004. Medical Research Council/ UNISA. Pretoria
2. D. Bradshaw, D. Bourne, N. Nannan. (2003). What are the leading causes of death among South African children. Medical Research Council / UNICEF. Cape Town.
3. South African Police Service. Statistics: Drownings: 2006-10-13

Articles:

a. SA Kids drowning in legacy (20/12/2006)
b. Latest drowning statistics reveal a few interesting emerging trends.
c. Beach tragedy 26/05/2005

Learning Outcomes:

1. **Identify the reasons why available data are so unreliable and how that can be addressed.**
2. **Articulate the need for legislation and policies to be developed that will act as governance measures to act as pro-active measures or prevent drowning incidents.**
3. **Study the implementation of Water safety Councils in countries such as Australia, New Zealand and Ireland and make proposals to the SA government to emulate, even in adapted forms, for the needs in SA.**