



Safety In Public Swimming Pools Incident Evaluation Report 2009 – 2010

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For the last nine (9) years Royal Life Saving has taken a leadership role in the collection of injury reports and the establishment of safety benchmarks for public aquatic centres.

This long term project would not have been possible without the support of individual aquatic centres that have participated in the reporting process. Royal Life Saving acknowledges the integral part played by the following organisations in the preparation of this report.

- Altone Park
- Ballajura Aquatic Centre
- Bayswater Waves
- Belmont Oasis
- Canning Aquatic Centre
- Challenge Stadium
- Claremont Pool
- Fremantle Leisure Centre
- Geraldton Aquarena
- Gosnells Leisure Centre
- Riverton Leisureplex
- South Lakes Leisure Centre
- Swan Park Leisure Centre
- Terry Tyzack Aquatic Centre



1. INTRODUCTION

In Western Australia there are 120 public aquatic centres that provide significant benefit in terms of community development, sport, recreation, health and fitness. In 2010 the Leisure Institute of Western Australia estimated;

- There are 9,815,096 individual entries into public aquatic centres annually. Given Western Australia has a population of in excess of 2 million this represents nearly 5 visits for every man-woman-child in the State.
- Total annual expenditure in aquatic centres is estimated to be \$57,989,307.
- The 120 swimming pools contain 148,832 kL of water that is constantly filtered and disinfected.
- Total annual water consumption is 1,196,543 kL which includes consumption for showers and toilets etc
- The Aquatic Recreation Industry has over 2,500 full, part-time and casual employees that are critical to the success of aquatic facilities.

Report Purpose

“What is the likelihood someone will need to be rescued in a public swimming pool?

How many people will slip over on the concourse?

Who will be there to help?”

This report uses aquatic centre data to quantify the likelihood of an incident occurring and to identify the circumstance of these incidents.

The report covers the period July 2009 – June 2010



Methodology

Participating centres provided data from two sources:

1. Individual incident reports (see Appendix 1)
2. Monthly centre participation/exposure statistics

In 2009 – 2010 the Injury Research Program collected incident reports from 14 metropolitan and regional swimming pools. This adds to the body of knowledge that has been built over the last nine years. The number of incident reports and total centre patronage for each year is listed in Table 1.

Data

Some of the incident reports did not complete all the data fields.

As a result some of the graphs in this report do not add up to 100%.

Table 1. Report Data Sample

| Year | Number of Participating Centres | Number of Incident Reports | Total Number of Patrons |
|--------------------|--|-----------------------------------|--------------------------------|
| 2001 – 2002 | 14 | 550 | 2,290,000 |
| 2002 – 2003 | 12 | 594 | 1,614,423 |
| 2003 – 2004 | 17 | 939 | 2,762,000 |
| 2004 - 2005 | 12 | 913 | 2,752,000 |
| 2005 – 2006 | 9 | 230 | 693,347 |
| 2006 – 2007 | | No data | |
| 2007 - 2008 | 4 | 196 | 705,050 |
| 2008 - 2009 | 7 | 342 | 1,383, 391 |
| 2009 - 2010 | 14 | 723 | 2,000,899 |

Meeting the goals of the Australian Water Safety Strategy

This report contributes to the recommendations of the Australian Water Safety Strategy 2008 - 11 developed by the Australian Water Safety Council.

Key Objective 10.1. Implement programs that minimise risk in aquatic recreation environments.

Key Objective 10.2. Research the role and contribution that safe venues make to drowning prevention and safe healthy communities in Australia.

2. HOW MANY INCIDENTS OCCUR IN SWIMMING POOLS?

Drowning

For the seventh consecutive year there have been no drowning deaths in public aquatic centres.

Major Incidents

Of the 723 incident reports 38 (5%) were identified as Major Incidents.

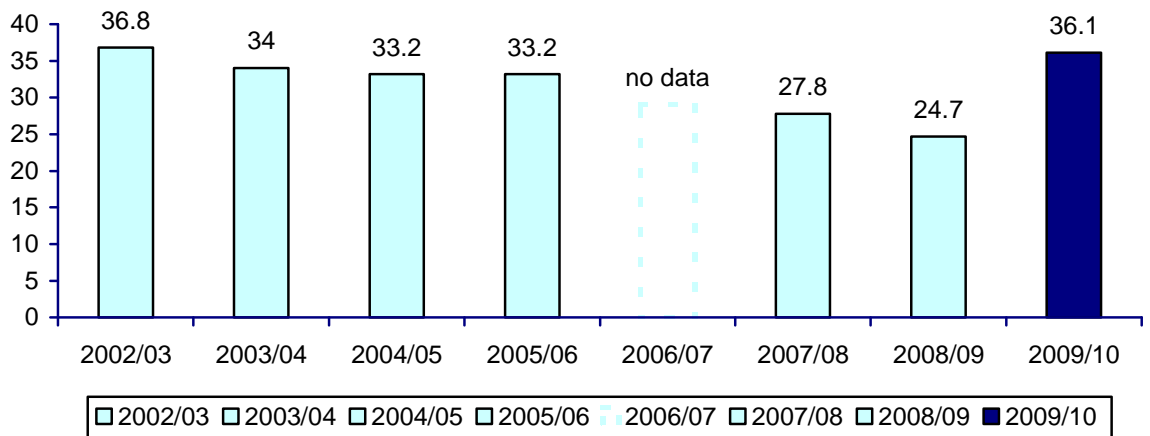
The remaining 685 were identified as Minor Incidents.

Near Misses

Drowning and serious accidents do not just happen. Much can be learnt from monitoring injuries of lesser severity. These minor incidents give an insight into the unsafe actions, conditions and behaviours being experienced in public aquatic centres.

Over the 2009 – 2010 year an average of 36.1 incidents per 100,000 patrons was reported.

Figure 1: Incident Rate/100,000 patrons



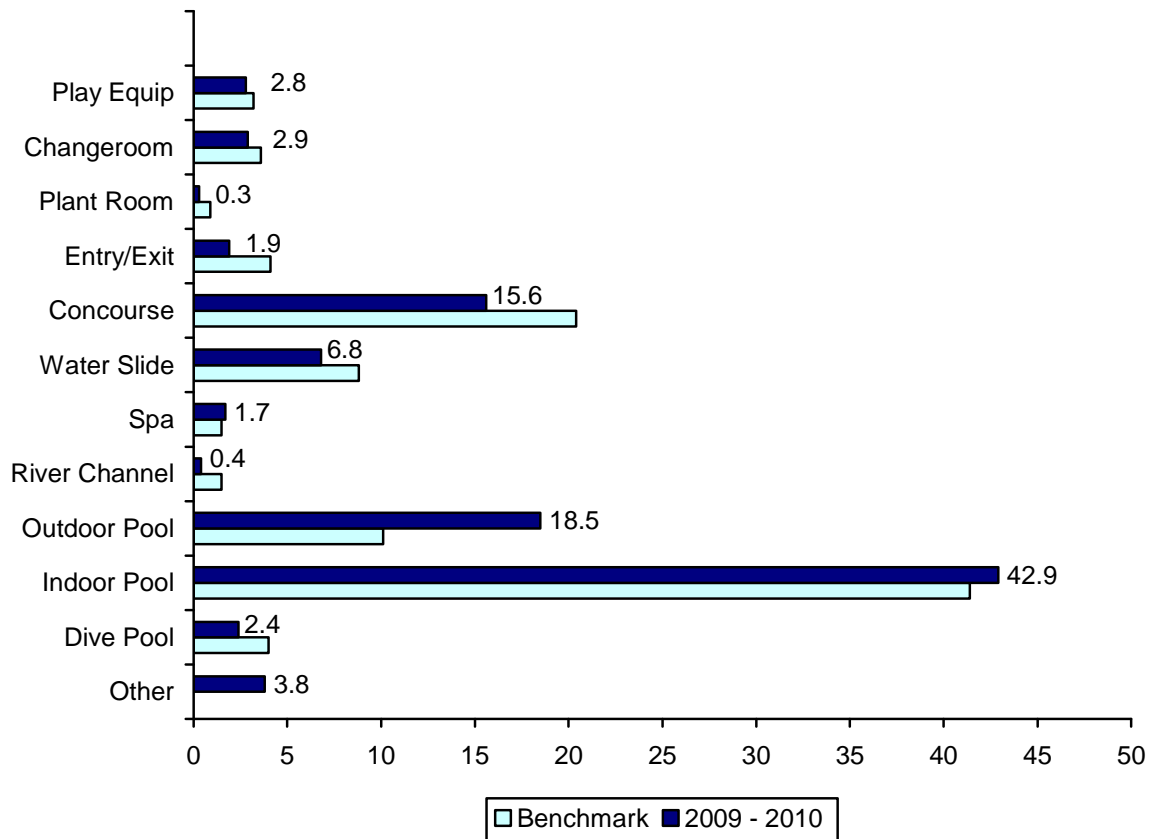
This year's incident rate is higher than the long-term average of 31.6 incidents per 100,000 patrons.

3. WHERE DO INCIDENTS/ INJURIES OCCUR IN SWIMMING POOLS?

Incident Locations

Figure 2 shows where incidents occurred within public aquatic centres;

Figure 2: Location of Incidents (%)



This year the frequency of incidents was lower on the concourse, water slides and dive pools. The frequency of incidents that actually occur in the pool (both indoor and outdoor) was greater this year.

Lifeguards reported that the facility design was a factor in 11.7% of the incidents.

Impact of pool depth

It was more likely that incidents will occur in shallow water (less than 1m) as opposed to deep water (greater than 1m).

- 348 (48%) of incidents occurred in shallow water
- 266 (36%) of incidents occurred in deep water.

4. WHEN DO INCIDENTS / INJURIES OCCUR IN SWIMMING POOLS?

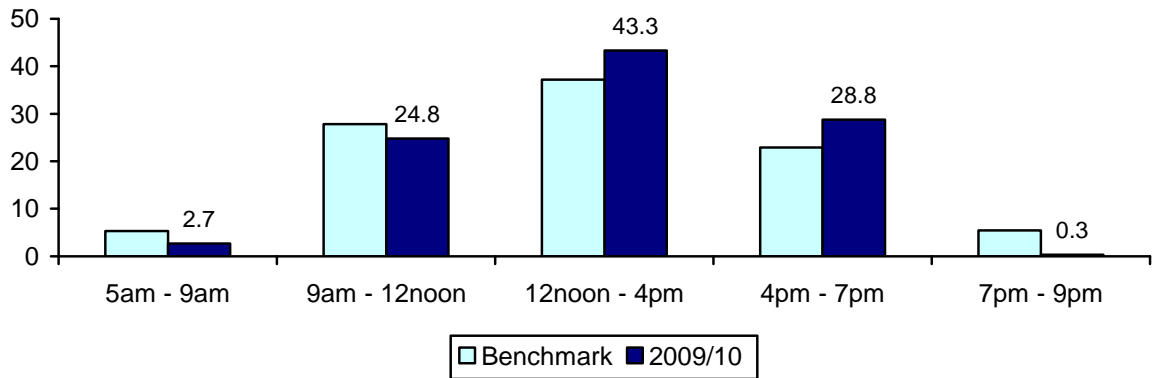
Daily Trends

Figure 3 illustrates the time of day when the recorded incidents occurred.

The higher frequency of incidents during the middle of the day maybe due to patrons being involved in un-structured aquatic activities.

Conversely few incidents occur in the morning during coaching/training sessions. This is also the time when the pool is used by 'regulars'.

Figure 3: Time of Incident (%)

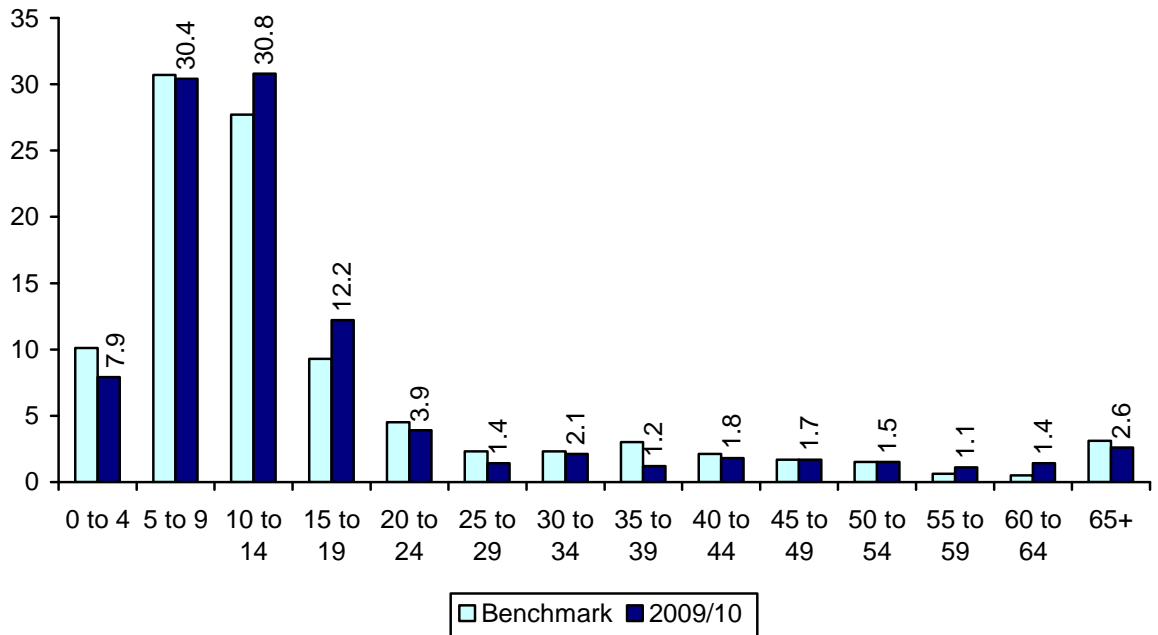


5. TO WHOM DO INCIDENTS / INJURIES OCCUR IN SWIMMING POOLS?

Age trends

Figure 4 illustrates the age of incident victims.

Figure 4: Age of Victim (%)



Children under 14 years of age continue to contribute most significantly to the total number of aquatic centre incidents.

A reduction in frequency of incidents involving young children (0-4) was observed this year. This is evidence of the effectiveness of the Watch-Around-Water message and enforcement by staff of child supervision policies.

This year the frequency of incidents involving children aged 10 – 14 and 15 – 14 increased.

Gender

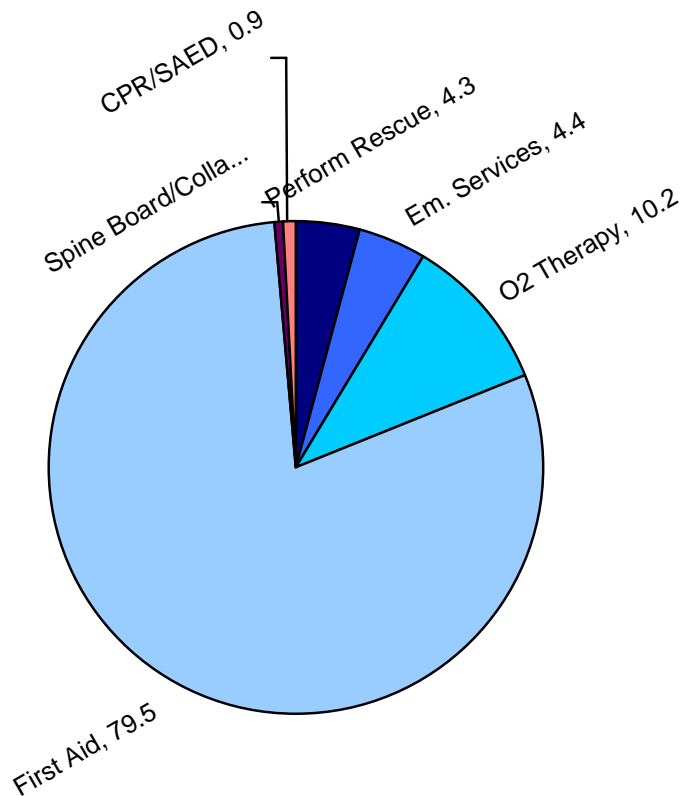
- 55% of the victims were male
- 45% of the victims were female

6. WHAT INCIDENTS / INJURIES OCCUR IN SWIMMING POOLS?

Type of lifeguard response

The frequency of lifeguard actions is illustrated in Figure 5.

Figure 5: Incident Response (%)



■ Perform Rescue ■ Em. Services ■ O2 Therapy ■ First Aid ■ Spine Board/Collars ■ CPR/SAED

The vast majority (79.5%) of the incidents required the lifeguard to provide basic first aid. Administration of oxygen therapy was also common.

It was not common for lifeguards to perform emergency care skills such as CPR, SAED or the use of spine boards and collars. These are fundamental skills of a lifeguard and therefore should be practiced during training sessions to ensure retention of skills/competence.

7. WHY DO INCIDENTS / INJURIES OCCUR IN SWIMMING POOLS?

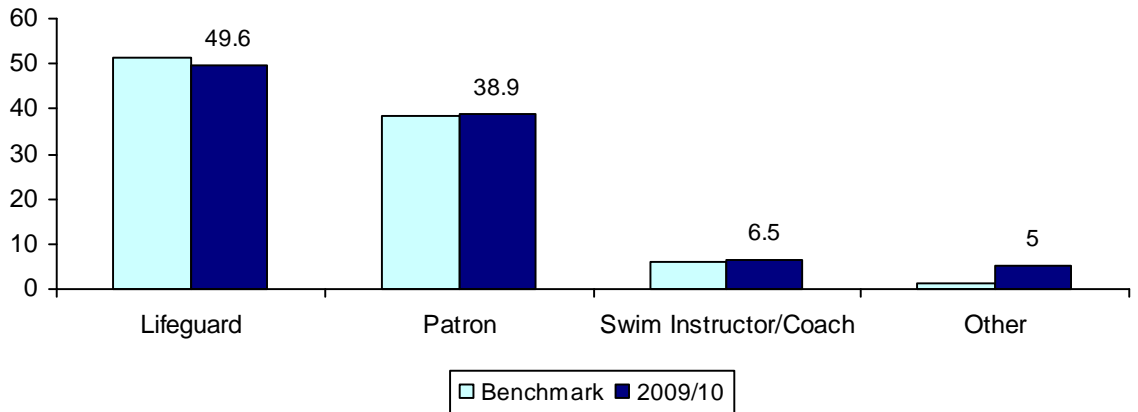
Supervision

The first person to recognise the incidents or respond to the person in difficulty was;

- The Lifeguard 49.6% of the time.
- Another patron 38.9% of the time.
- A Swim Instructor, Coach 6.5% of the time.

The victim looked after them self, or that data point was not recorded in the remaining incidents.

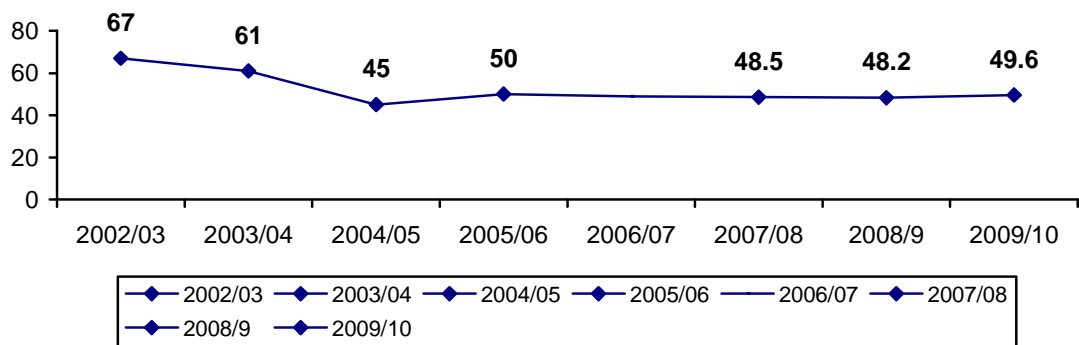
Figure 6: First Responder (%)



A fellow patron being the first person to recognise an incident is a function of proximity rather than a reflection of lifeguard vigilance. It is likely lifeguards would have provided a timely responded in these incidents. While facility managers cannot rely on patrons as supervisions they are nevertheless a useful secondly level of surveillance.

The graph below shows the percentage of incidents recognised by the lifeguard over the long term.

Figure 6: First Responder (%)



Contributing Factors

Table 2 listed factors (sometime multiple) identified as contributing in the 723 incidents.

Table 2:

| Contributing Factors | Frequency | Percentage of total incidents |
|--|------------------|--------------------------------------|
| Inappropriate behaviour by victim | 340 | 47.0% |
| Victim was unaware of behaviour/safety standards | 32 | 4.4% |
| Victim was from non-English speaking background | 7 | 1.0% |
| Victim has medical condition/health issue | 131 | 18.1% |
| Victim was poor swimmer | 49 | 6.8% |
| Lack of parental/carer supervision | 102 | 14.1% |

Historically inappropriate behaviour and lack of parental supervision have been the two most common contributing factors reported by lifeguards.

This year these were the first and third most common factors respectively. The second most common contributing factor was a pre-existing medical condition which has increased significantly from 10.2% last year to 18.1% this year.

With an increasing diverse community, the swimming ability of patrons, or lack of, could also be an emerging issue. The frequency of incidents where this was reported as a factor grew from 4.4% last year to 6.8% this year.



RECOMMENDATIONS

1. Public aquatic centres strive to reduce the incident rate currently experienced by committing to an improvement program that will increase the level of compliance with established safety standards.
2. Lifeguards review their scanning strategies to ensure sufficient focus is placed on the control of children, teenagers and activity in shallow water.
3. Facility managers consider measures to reduce incidents occurring within the actual pool water space.
4. Public aquatic centres continue their commitment to the implementation of the Watch-Around-Water parental supervision program to assist in reducing the frequency of incidents involving young patrons (under 10).
5. Facility managers take steps to ensure emergency procedures in CPR, SAED and spinal management are practiced on a regular basis.
6. Facility managers are conscious of the frequency that a lifeguard is the first person to recognise/respond to an incident and efforts continue to improve lifeguard scanning strategies so that they are frequent enough to ensure incidents are identified and a timely response is initiated by the lifeguards.
7. Strategies are considered to address the rise in incidents where pre-existing medical conditions and poor swimming ability were reported as factors.

Appendix 1.



AQUATIC INDUSTRY INCIDENT RESEARCH PROJECT

Aquatic Centre: _____ Month: _____ Year: _____
 Incident Date: _____ Time: _____ am/pm

Incident Description: Major Minor

Type of assistance provided?

Perform a rescue Call Emergency Services CPR SAED (defibrillation)

First Aid (basic) Spine Board/Collars Oxygen Therapy

Victim Age: _____ Gender: M / F

0-4 yrs 5-9yrs 10-14yrs 15-19yrs 20-24yrs 25-29yrs 30-34yrs

35-39yrs 40-44yrs 45-49yrs 50-54yrs 55-59yrs 60-64yrs 65+yrs

Where did it occur?

Indoor Pool Outdoor Pool Spa Wave Pool Rapid River

Dive Pool Concourse Plant Room Facility Entry Exit Change rooms

Water Slide Play Equipment Other: _____

How deep was the water? Less than 1m Greater than 1m

Did the design/construction of the facility play a role in the incident? Yes No

Who first recognised the incident? Lifeguard Patron LTS Teachers Other: _____

Probable Incident Cause:

Inappropriate victim behaviour Victim of non-English speaking background

Victim unaware of behaviour standards Pre-existing health/medical issue

Poor swimming ability Lack of parental/carer supervision

Please return all incident reports with monthly patronage figures.



Royal Life Saving

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