



Drowning Deaths In Victoria from 1 July 2016 to 30 June 2017

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"THIS YEAR SAW INCREASES IN FATAL DROWNING RATES ACROSS **A NUMBER OF KEY DEMOGRAPHICS** (COMPARED TO THE 10 YEAR AVERAGE 2006/07-2015/16)."



This year we again find ourselves

reporting an increase in the

Victorian drowning toll, with

45 people losing their lives to

drowning in 2016/17. We can

attended 54 non-fatal drowning

number of drowning incidents

also note that paramedics

incidents, bringing the total

across Victoria to 99.

This year we saw increases in fatal drowning rates across a number of key demographics (compared to the 10-year average 2006/07-2015/16), including:

- A 6% increase for children aged 0-4 years;
- A 25% increase for young adults aged 15-24 years;
- An 18% increase for adults aged 25-44 vears; and

A 45% increase for adults aged 65 years and over.

The increase of drowning in older adults is being addressed through the Play is Safe by the Water campaign. Over summer this age group will continue to be targeted with TV, radio and online advertisements. These advertisements aim to prompt adults 65+ not to overestimate their abilities and to understand the risks of their chosen aquatic environment. This campaign will be supported with targeted practical water safety programs, for example the Grey Medallion program. We hope to see some improvement in the numbers for this demographic in the future.

The most common activity immediately prior to a Looking forward and thanks to funding drowning in 2016/17 was swimming/paddling/ wading, representing 29% of fatal and 26% of non-fatal drowning incidents. These figures highlight the importance of all Victorians having the opportunity to learn swimming and water safety skills. Staying calm, floating or treading water are the keys to saving many lives.

The Victorian Government announcement (November 2016) that swimming and water safety education would become a compulsory part of the Victorian school curriculum, has been a significant milestone in LSV's long-term work toward addressing the lack of swimming competency of Victorian school children. We hope that this initiative will also provide greater benefits into the future, by allowing these children to enjoy aquatic activities safely, for many years to come.

In an area where we have seen very little change, men remain four times more likely to drown than women. This year's fatal drowning statistics were made up of 35 males, compared Dr Nigel Taylor ESM to 10 females.

Similarly, alcohol has been a continuing trend in drowning incidents. It was a factor this year in 22% of cases. Notably there has been an average of nine drowning alcohol related deaths each year over the past decade (2006/07 to 2015/16).

Meanwhile, differing from the past two years, the majority of drowning deaths in 2016/17 occurred in inland waterways (42%, 19). This is a 48% increase, when we compare to the 10-year average. Over the past three years, LSV has been partnering with the Royal Life Saving Society - Australia and the Australian Government to deliver the Respect the River campaign to promote safety in inland waterways. These alarming statistics certainly highlight the importance of this campaign as it continues into 2017/18.

Two new inclusions in this year's report provide further snapshots of drowning in public swimming pools as well as children drowning in home pools. Both of these areas have been identified as key priorities for action and will be areas of significant focus in our drowning prevention activities for 2017/18.

announced by the Victorian Government earlier this year, LSV will lead an industry partnership in developing a formal approach to public pool safety; meanwhile changes are expected for Victorian pool fencing laws when the replacement Victorian Building Regulations are finalised and come into effect by June 2018.

I present the 2016/17 Drowning Report with the reminder that drowning deaths are highly preventable and therefore, needless.

I hope that perusal of this report helps you to better understand the Victorian drowning issues we are faced with. Together with our Community/Government partnerships, we will continue to strive to prevent future aquatic deaths and injuries.

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CEO

FATAL DROWNING IN 2016/17







PLAYING NEAR WATER



KEY FATAL DROWNING STATISTICS IN 2016/17







NON-FATAL DROWNING IN 2016/17

NON-FATAL DROWNING INCIDENTS ATTENDED BY PARAMEDICS



LOCATION (NON-FATAL)

22% PUBLIC AND 1% RESIDENTI POOLS)

ACTIVITY (NON-FATAL)



KEY FATAL DROWNING STATISTICS OVER THE PAST DECADE



OF DROWNING DEATHS OF CHILDREN AGED 0-4 IN HOME POOLS/SPAS INVOLVED LACK OF MAINTENANCE OF THE POOL/SPA BARRIER AS A CONTRIBUTING FACTOR.



Every day, visitors to Victoria's 811 kilometres of ocean beaches, 259 kilometres of bay beaches, 85,000 kilometres of rivers, 13,000 natural wetlands and 450 public and commercial swimming pools, engage in a wide variety of recreational aquatic activities (Short, 1996; DSE, 2011; VAIC, 2001). Our prevention efforts span this setting.

REDUCE DROWNING

Reduce Victorian drowning rate

Drowning deaths in Victoria in 2016/17. This is eight more than the 10 year average 2006/07 to 2015/16.

Crude fatal drowning rate per 100,000 persons in Victoria in 2016/17; a 9% increase compared to the 10 year average (2006/07 to 2015/16).



Non-fatal drowning incidents attended by paramedics in Victoria in 2016/17. A crude non-fatal drowning rate of 0.86 per 100,000 persons in Victoria in 2016/17.

Decrease in the fatal drowning rate in Victoria since the start of the Play it Safe by the Water campaign in 1998 (baseline is the three year average 1996/97-1998/99 compared to the follow-up 2014/15-2016/17 average).

Direct cost to society of lives lost (where the value of a statistical life is estimated at \$4.2 million; Office of Best Practice Regulation, 2014).

PROGRESS

The following table outlines Victoria's progress against the Victorian Water Safety Strategy 2016-2020 and Australian Water Safety Strategy 2016-2020, with respect to fatal drowning incidents. While the overall drowning rate has decreased by 13% from the baseline, this is well short of the target of a 50% reduction in drowning by 2020.

SFRVICES

Expand to meet public need/ sustainability/ membership development, growth and support

Rescues by lifesavers and lifeguards on patrolled beaches on average per year from 2006/07 to 2015/16.

Rescues per 100,000 beachgoers on average per year from 2006/07 to 2015/16.

First aid assistance by lifesavers and lifeguards on patrolled beaches on average per year from 2006/07 to 2015/16.

Volunteer members, patrolling our beaches and providing education and training in lifesaving activities, to ensure the safety of Victoria's waterway users.



Estimated total value of coastal services in Victoria per year (PWC, 2011).

KEY LIFE STAGES	BASELINE 3 YEAR AVERAGE (2004/05-2006/07)	FOLLOW-UP 3 YEAR AVERAGE (2014/15-2016/17)	PROGRESS
Reduce drowning in children aged 0-4 years	3	4	High concern
Reduce drowning in children aged 5-14 years	4	1	On track
Reduce drowning in young people aged 15-24 years	5	4	Some concern
Reduce drowning in people aged 65+	8	11	High concern

EDUCATION & TRAINING

Continue development to ensure efficiency and expansion of delivery

Participants took part in water safety education state-wide in 2016/17; a 1.2% increase compared to the five year average (2011/12-2015/16).

Culturally and linguistically diverse participants took part in LSV programs in 2016/17; a 19% increase compared to the five year average (2011/12-2015/16).

People trained in CPR or other First Aid related courses in 2016/17.

Participants in Pool Lifeguard, Community Surf Life Saving, or water rescue courses in 2016/17.

Aquatic facilities were registered Watch Around Water facilities in 2016/17. This represents an estimated 53% of aquatic facilities in Victoria.

HIGH RISK LOCATIONS	BASELINE 3 YEAR AVERAGE (2004/05-2006/07)	FOLLOW-UP 3 YEAR AVERAGE (2014/15-2016/17)	PROGRESS
Reduce drowning in inland waterways	15	13	Some concern
Reduce drowning in coastal waters	14	18	High concern
Reduce drowning by strengthening the aquatic industry*	0	1	Some concern

* Includes drowning deaths at public swimming pools. **Includes boats and watercraft, rock fishing, other fishing and diving.





AQUATIC RISK & RESEARCH

Striving for excellence/ evidence based practice



Reduce boating, watercraft

*** Includes Aboriginal and Torres Strait Islanders, people from culturally and linguistically diverse (CALD) backgrounds, international tourists and international students.

INCREASE IN THE DROWNING RATE OF OLDER ADULTS AGED 65+ YEARS

There were a total of 99 drownin incidents in Victoria in 2016/17, includi 45 drowning deaths and 54 non-fatal incidents. Children aged 0-4 years have the greatest overall risk of drowning, with the highest age-specific combined rate of fatal and non-fatal drowning. However, older adults aged 65+ years had the highest age-specific rate of fatal drown in 2016/17.

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DEATHS

The 45 drowning deaths in 2016/17 represent a 20% increase (eight deaths) compared to the 10 year average from 2006/07 to 2015/16. The crude fatal drowning rate was 0.72 per 100,000 persons in 2016/17, this is a 9% increase compared to the 10 year average (0.66 per 100,000 persons from 2006/07 to 2015/16).

Of the 45 drowning deaths in Victoria in 2016/17, 35 (78%) were male. Males are consistently overrepresented in drowning statistics, overall they are four times more likely to drown than females.

Four children aged 0-4 years died as a result of drowning this year in Victoria, with a drowning rate of 1.00 per 100,000 population. There was a for non-fatal drowning, an average of 55 (72%) 6% increase in the fatal drowning rate of children aged 0-4 years in 2016/17 compared with the 10 year average (2006/07-2015/16). There was also a 25% increase in the fatal drowning rate of young adults aged 15-24 years, an 18% increase in the fatal drowning rate of adults aged 25-44 years and a 45% increase in adults aged 65 years and over.

NON FATAL INCIDENTS

There were 54 non-fatal drowning incidents attended by paramedics in 2016/17. This represents a crude non-fatal drowning rate of 0.86 per 100,000 persons in 2016/17.

Hospital Admissions, 2006/07 to 2015/16

Over the previous decade there were 761 hospital admissions for non-fatal drowning, which is an average of 76 hospital admissions for non-fatal drowning per year. The annual crude hospital admissions rate was 1.34 per 100,000 persons per year (2006/07-2015/16). The rate of admissions increased over the 10 year period from 2006/07-2015/16.

A total of 551 males were admitted to hospital hospital admissions per year. The rates of admission decreased with increasing age. Children aged 0-4 years had the highest rates of admission, with 5.66 per 100,000 population annually, followed by those aged 5-14 years (1.38 per 100,000 population) and those in the 15-24 year age group (1.36 per 100,000 population).

Emergency Department (ED) Presentations, 2006/07 to 2015/16

There were 772 ED presentations in the 10 year period from 2006/07-2015/16, which is an average of 77 ED presentations for non-fatal drowning annually. The average annual rate of ED presentations was 1.31 per 100,000 persons per year. The rate of ED presentations varied over the 10 year period from 2006/07-2015/16, but trended toward an overall increase.

The majority of the 772 ED presentations were males (508, 66%), Similar to hospital admissions. ED presentations decreased with increasing age.

INCREASE IN THE NUMBER OF DROWNING **DEATHS COMPARED TO** THE 10 YEAR AVERAGE.









DROWNING DEATHS OF CHILDREN AGED 0-4 YEARS IN HOME SWIMMING POOLS (AND OUTDOOR SPAS) **OVER THE PREVIOUS 10 YEAR** PERIOD (2006/07 TO 2016/17).

Drowning Deaths of Children 0-4 Years of Age in Home Pools

Two young children (aged 0-4 years) drowned in home pools in 2016/17. In addition there were 13 drowning deaths of children aged 0-4 years in home swimming pools (and outdoor spas) over the previous 10 year period (2006/07 to 2016/17). Of the drowning deaths over the past 10 years all occurred on a weekday, with nine occurring in the afternoon. The majority of deaths (8) occurred in the summer and 10 occurred in Greater Melbourne.

Coronial records indicate that the deaths primarily resulted from a combination of inadequate carer supervision immediately prior to the drowning, lack of adequate safety barriers between the child and the pool/spa, and availability of an entry point. Examples of inadequate safety barriers and available entry points include: safety barrier gate left propped open or door left open, faulty gate lock, safety barrier fence not maintained or adaptations to the fence or surrounding area made so it no longer complied with the Australian Standards. There were also cases where a climbing point allowed easy access to the swimming pool.

In nine of the 13 drowning deaths of children aged 0-4 in home pools and spas in Victoria in the past 10 years, the coroner found lack of maintenance of the pool fence or gate was a contributing factor to the child's death. These figures highlight the need for mandatory barrier inspections for home pools, to ensure that barriers are being properly maintained and prevent further drowning deaths. Evidence from other states demonstrates the success of mandatory barrier inspections in reducing drowning (Royal Life Saving Society - Western Australia, 2016). Furthermore the World Health Organization stresses that low compliance and weak enforcement of legislation can lead to pool barriers alone being ineffective (World Health Organization, 2017).

There were also 39 non-fatal drowning incidents of young children (0-4 years) in home swimming pools attended by paramedics in the five year period from 2012/13 to 2016/17.



OF DROWNING DEATHS OF PEOPLE FROM CALD COMMUNITIES OCCURRED AT BEACHES

CULTURAL AND LINGUISTIC DIVERSITY

This year six individuals that drowned were reported as being from culturally and linguistically diverse (CALD) communities (13%). This is a 15% decrease when compared to the 10 year average (seven per year from 2006/07 to 2015/16).

These figures may be even higher, as from 2006/07 to 2015/16 it is estimated that country of birth or ethnicity were unknown in 68% of drowning deaths. In addition, country of birth was unable to be determined for non-fatal drowning incidents.

Of those individuals where country of birth was recorded, 23 drowning victims (21%) also had the number of years they had been living in Australia reported. Of those 23 individuals, the median number of years living in Australia was six years. This highlights the importance of providing water safety messages and education to those newly arrived in Australia.

On average over the past 10 years, 19% of drowning deaths were of individuals known to have been born overseas. Of those, the majority were males (84%), with many aged 25-44 years (42%) or 15-24 years (28%). Incidents typically occurred in open waterways, with 42% at beaches and 21% in rivers/creeks/streams. The most common activities victims were undertaking prior to the drowning incident included swimming/wading (38%), walking/recreating near water (16%), or rock fishing/rock walking (11%).



*Country of birth known in 32% of fatal drowning cases.





Individuals from a CALD background are recognised as those who identify as 'having a specific cultural or linguistic affiliation by virtue of their place of birth, ancestry, ethnic origin, religion, preferred language, language(s) spoken at home, or because of their parents' identification on a similar basis' (Department of Human Services Multicultural Strategy Unit, 2002).

ncident Location Excess Risk Based on Postcode



RELATIVE RISK ≥ 1 2006/07 - 2010/11

RELATIVE RISK ≥ 1 2011/12 - 2015/16



Drowning by **Incident Location** from 2001/02 to 2015/16

These maps outline excess risk of drowning incidents in Victoria over a 15 year period from 2001/02 to 2015/16. Values are considered excess risk where the observed count exceeds the expected count of events, given the underlying population for each postcode.

Each map contains different analysis timeframes. The first three maps illustrate excess risk rates using postcode and population counts for consecutive five year periods, 2001/02 to 2005/06, 2006/07 to 2010/11 and 2011/12 to 2015/16. The fourth map uses the same data over the whole 15 year timeframe (2001/02 to 2015/16).

Risk Based on Postcod Place of Residence









RELATIVE RISK ≥ 1 2006/07 - 2010/11

Drowning by Place of Residence from 2001/02 to 2015/16

These maps outline excess risk of drowning by place of residence in Victoria over a 15 year period from 2001/02 to 2015/16. Values are considered excess risk where the observed count exceeds the expected count of events, given the underlying population for each postcode.

Each map contains different analysis timeframes. The first three maps illustrate excess risk rates using postcode and population counts for consecutive five year periods, 2001/02 to 2005/06, 2006/07 to 2010/11 and 2011/12 to 2015/16. The fourth map uses the same data over the whole 15 year timeframe (2001/02 to 2015/16).

RELATIVE RISK ≥ 1 2001/02 - 2015/16

WHEN DID THEY DROWN?

Month and Season

What

When, Where,

Over a third (36%, 16) of drowning deaths occurred in the summer months last financial year. There was an increase in drowning deaths in spring, representing 32% (14) of the total drowning deaths.

In the previous decade (2006/07 to 2015/16) the majority of drowning deaths occurred in summer (34%), followed by autumn (23%), spring (22%) and winter (20%). There were significant increases in drowning deaths in July, September, October, December and March in 2016/17 when compared with the 10 year average from 2006/07 to 2015/16.

Similar to fatal drowning, non-fatal drowning incidents were more common in summer (44%, 31). This was followed by autumn (16%, 11), spring (14%, 10) and winter (3%, 2).

WHERE DID THEY DROWN?

Region

In the last financial year 51% of drowning incidents (23) occurred in major cities in Victoria, this is a 30% increase when compared with the 10 year average from 2006/07 to 2015/16.

When accounting for the differences in the distribution of the population, the drowning rate decreased for those residing in regional areas in Victoria. There was an 8% decrease in the drowning rate of those residing in regional areas of Victoria this year (0.85 per 100,000 population in 2016/17) compared with the 10 year average (0.92 per 100,000 population from 2006/07 to 2015/16). However, of concern is the 16% increase in the drowning rate of those residing in metropolitan areas of Melbourne.

Waterways

Differing from the past two years, in 2016/17 the majority of drowning deaths occurred in inland waterways (19, 42%). This represents a 48% increase in drowning deaths in inland waterways, compared with the average over the previous decade (13, 34% from 2006/07 to 2015/16). This increase was driven by an increase in drowning in lakes, with eight deaths in lakes in 2016/17 compared to an average of three per year over the past decade. The number of drowning deaths occurring in coastal waterways was 15 in 2016/17 and 16 on average over the previous decade.

A third of non-fatal drowning incidents in 2016/17 occurred in swimming pools, (22% public and 11% residential pools). The other key waterways for nonfatal incidents were bay/beach/ocean environments (32%), which is consistent with previous years.



ERCENTAGE OF FATAL DROWNING BY REMOTENES REA OF INCIDENT IN VICTORIA, 2006/07 TO 2016/13

2006/07-2010/11 2011/12-2015/16 2016/17



2006/07-2010/11 2011/12-2015/16 2016/17

REQUENCY OF FATAL DROWNING PER YEAR By Body of Water 2006/07 to 2016/17



INCREASE IN DROWNING DEATHS IN INLAND



WHAT WERE THEY DOING? Activity

The most common activity immediately prior to a fatal drowning in 2016/17 was swimming/ paddling/wading (29%, 13), followed by walking/ playing near water (18%, 8) or bathing/having a spa bath (11%, 5).

There was a 76% increase in those that fatally drowned while swimming/paddling/wading in 2016/17, compared to the 10 year average from 2006/07 to 2015/16 (7, 20%). Similar to fatal drowning, the greatest proportion of non-fatal drowning incidents involved those swimming (26%, 14). These figures highlight the importance of the recent Victorian Government initiative making swimming and water safety mandatory in the primary school curriculum.

Unintentional water entry (slips/trips/falls) accounted for 40% of fatal drowning incidents last year (18). This is a 46% increase compared to the past decade, with an average of 12 (36%) per year from 2006/07 to 2015/16.



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OF DROWNING DEATHS **INVOLVED** UNINTENTIONAL WATER ENTRY.



INCREASE IN THOSE THAT FATALLY DROWNED WHILE IN 2016/17, COMPARED TO THE **10 YEAR AVERAGE.**

DROWNING DEATHS AT PUBLIC SWIMMING POOLS IN VICTORIA OVER THE PAST 25 YEARS.

Drowning Deaths at Public Swimming Pools

There were 35 drowning deaths at public swimming pools in Victoria in the past 25 years, an average of 1.4 deaths per year. Of these 35 drowning deaths, 71% (25) occurred at a council owned aquatic and leisure facility, while the other 29% (10) occurred at non-council owned pools (typically privately owned health and fitness centres, or hotels/resorts).

The majority (86%, 30) of people who drowned were male and the median age was 27 years. The majority of cases (66%, 23) occurred in the period 1991-2000, however 20% of cases (7) occurred in the two year period from 2014-2015, this is the highest since 1998-1999 (20%, 7).

Key factors that contributed to drowning deaths at public swimming pools were a lack of supervision and pre-existing medical conditions. Parent or carer supervision was lacking in five out of seven child drowning cases. In 37% of cases (13) there was evidence of a pre-existing medical condition, such as heart disease or epilepsy.

Drowning deaths in public swimming pools represented 3% of the total unintentional drowning deaths in Victoria over the last 25 years. In addition, there were 86 non-fatal drowning incidents in public swimming pools that were attended by paramedics in the five year period from 2012/13 to 2015/16. This is an average of 17.2 non-fatal incidents per year.



ALCOHOL-RELATED DROWNING DEATHS

Alcohol is a common factor in drowning, representing 22% of the drowning toll annually over the past decade (an average of 9 deaths per year from 2006/07 to 2015/16). Consistent with previous years, nine lives were lost in 2016/17 when an individual reportedly consumed alcohol prior to drowning, representing 20% of the total drowning toll.

OF LIVES LOST IN 2016/17 WHEN AN INDIVIDUAL REPORTEDLY CONSUMED ALCOHOL PRIOR TO DROWNING.

LACK OF LIFEJACKET USE

Lack of a lifejacket use when boating has potentially claimed many lives in Victoria. Of the 50 boating related deaths over the past decade (2006/07 to 2015/16), lifejacket use was known in 39 cases. Of these 39, in 29 incidents (74%), the deceased was not wearing a lifejacket at the time. A further 15 (6%) had an incorrectly fitted lifejacket or were wearing the incorrect type recommended for the conditions.

Wearing a lifejacket when rock fishing could also have saved another six lives over the past decade (2006/07 to 2015/16), with all individuals who drowned while rock fishing found to not be wearing a lifejacket.

74%

OF PEOPLE THAT DROWNED IN BOATING INCIDENTS OVER THE PAST DECADE WERE NOT WEARING A LIFEJACKET.



CORONIAL FINDINGS WHERE RECOMMENDATIONS WERE MADE FOR DROWNING **PREVENTION ACTIONS.**

The role of the coroner in Victoria is to investiga reportable deaths, which include drowning, in order to determine the identity of the person who died, the cause of the death and in some situations, the circumstances surrounding the death. As part of this process the coroner may recommend ways to help prevent similar deaths in the future.

There were seven coronial findings where recommendations were made relating to drowning deaths in 2016/17. The following is a summary of the incidents and the recommendations made by the coroner as contained in the coronial findings. Please note, these are not exact replications from the findings. Full coronial findings can be accessed from the Coroners Court of Victoria website:

http://www.coronerscourt.vic.gov.au/home/ coroners+written+findings/

2014

On 2 February 2014, Paul Rayudu was located at the bottom of the 50 metre pool at a public swimming pool in Greensborough. He was unconscious when pulled from the water. Cardio-pulmonary resuscitation (CPR) was initiated and he was transferred by ambulance to hospital. He was admitted to intensive care but failed to improve. He died on 8 February 2014.

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- 1. I recommend that Belgravia Leisure Pty Ltd implement a system, not limited to, but which may be in the form of signage, requesting patrons to inform a staff member of their vulnerabilities before entering the water.
- 2. I recommend that Belgravia Leisure Pty Ltd in consultation with Banyule City Council explore the options and means for best communicating with and encouraging patrons who have English language challenges, to inform a staff member of their vulnerabilities before entering the water. The communication option may take the form of, but not be limited to, visual imagery on a monitor at the reception area and multilingual written material.
- 3. I recommend that Chris Eccles, Secretary of the Department of Premier and Cabinet, work with the appropriate area of Victorian Government to establish a central oversight and regulation body for public swimming pool operation in Victoria, to ensure safety standards are applied and upheld consistently across the industry.

2014

Mr Gao was a 20-year-old student who arrived in Australia from China in 2013 to study. He drowned on 21 December 2014, while collecting crabs at Number Four Beach in Venus Bay. The beach was unpatrolled at the time and it is unclear if Mr Gao could swim.

The coroner noted that Mr Gao's death "... highlights the particular vulnerability of foreign-born individuals to accidental drowning in Victorian (and Australian) coastal waters." Furthermore that "... beach safety signage is an important tool for providing information about risks and hazards on coastal beaches and waterways," but that "... signage, though valuable, is unlikely in isolation to wholly manage the risks presented by coastal waters ... water safety education is, therefore, another important tool through which to minimise unintentional drowning in coastal waters for this cohort."

Recommendation

I endorse the comments made by Coroner Jamieson ... that all education and training institutions that have international students enrolled annually seek the services of Life Saving Victoria to deliver water safety information to their students. Building water safety awareness among this group may promote the adoption of protective behaviours and a more accurate assessment of risks posed by different aquatic environments.



2015

endations

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Coronial Recom

Paul Gendre, aged 61 years, died as a result of drowning while on a fishing trip between 6-11 July 2015. He was on his own in his scance (a cance with a square transom) at Lake Dartmouth. He was considered to be a very competent seaman and strong swimmer, however his current fitness level was moderate. Toxicological analysis detected alcohol at a concentration of 0.23g/100mL. In addition, he was not wearing a lifejacket at the time his body was recovered from the water.

The coroner noted that "... by taking his scanoe to a relatively remote area, loading it with bulky items, travelling with no lifejacket or personal floatation device, apparently consuming alcohol, and failing to obtain a Recreational Boating License and associated education, Mr Gendre was exposed to considerable risk of injury."

With the aim of reducing the risk of harms and preventing like deaths through the provision of appropriate information about the risks associated with boating and associated water activities, I recommend that Goulburn Murray Water erect additional safety signage adjacent or proximate to the boat ramp at Lake Dartmouth.

2015

On 14 September 2015, a two-year-old boy (Child E) drowned in a backyard swimming pool at a rental property where he lived. The child was unsupervised at the time and the pool safety barrier did not comply with building regulations. The coroner noted that "... both pool safety barriers were badly damaged and faulty." Further, the coroner made the following comments regarding the death:

"The tragic deaths of three children; Chanel Peckham, Jacob (Yakkov) Ovadia Ben Zur, and Lauren Harris in backyard swimming pools of rental properties, should be an impetus for regulatory change in Victoria. However, while we have waited for the Victorian Government's reform of the Building Regulations 2006, and the response to Deputy State Coroner lain West's recommendations following the Inquest into the Death of Lauren Harris, Child E has died. The regulation of backyard swimming pools in Victoria is inadequate, and the evidence indicates that tenants are made especially vulnerable by the status quo. There is a theme wrought by the devastating deaths of these children, and an intransigent response or lack of reform will keep the Victorian public at an unacceptable level of risk."

Recommendations

- 1. With the aim of improving Victoria's pool safety regulation framework and preventing like deaths, I recommend that during the review of the Building Regulations 2006, the Minister for Planning consider adopting elements of the framework enacted in Queensland, including but not limited to, requiring that a pool safety certificate be obtained prior to a property with a pool being sold or leased.
- 2. With the aim of improving Victoria's pool safety regulation framework and rigorously monitoring compliance, I recommend that, as anticipated in the recommendation made by Deputy State Coroner lain West in the Finding following the Inquest into the death of Lauren Kayley Harris dated 14 October 2014, the Minister for Planning consider the creation of a state-wide pool register.
- 3. With the aim of emphasising and enhancing the role of real estate agency staff in detecting malfunctioning pool safety barriers in rental properties, I recommend that the Minister for Consumer Affairs, Gaming and Liquor consider that Consumer Affairs Victoria also produce a pro forma Routine Inspection Report document, which incorporates reference to 'pool fence and gate' and 'spa fence and gate', as in its condition report.

2015

On 9 October 2015, 78-year-old Geoffrey and his 71-year-old friend Ed died from drowning while fishing in a boat off Warrnambool. They were both experienced fishermen. Geoffrey lived in Warrnambool. Ed was a Canadian national who lived in Ontario and was on holiday in Australia. He was a keen fisherman and an experienced boatsman, but not a strong swimmer. Witnesses noticed their capsized boat and they were recovered from the water, deceased. Neither man was wearing a lifejacket or personal flotation device (PFD).

Recommendation

- 1. If it has not already done so, Maritime Safety Victoria should conduct a systematic review of existing safety markings of Victorian coastal reefs to assess their adequacy and where necessary, to provide additional signage and cardinal markers.
- 2. The legislation regulating the use of PFDs should be reviewed, in particular as to the adequacy of the definition of 'heightened risk' and whether it should include boating in coastal reef areas and adverse weather or water conditions other than the ones currently specified.
- 3. That Maritime Safety Victoria produce and disseminate educational information about the dangers of coastal reefs and the advisability of wearing PFDs at all times, particularly given the unpredictability of weather and water conditions.

2016

Darren, aged 41 years, drowned on or about 17 January 2016, in Dandenong Creek, while on a bike ride. It is most likely he entered a bend at speed and the bicycle contacted with raised marker posts before running off the path into the creek.

Recommendation

With the aim of preventing injuries and like deaths, I recommend that the ConnectEast Group conduct a risk assessment of the EastLink Trail's footbridge which crosses the Dandenong Creek and review any opportunities for safety improvements, such as, but not limited to, warning signs regarding speed bumps and additional fencing.

Murray River Drowning 2006/07 to 2015/16

The Murray River has been identified as the number one river drowning blackspot in Australia (Peden & Queiroga, 2014). At 2,508 km, The Murray River is Australia's longest river. It forms a majority of the border length between Victoria and New South Wales and stretches down into South Australia. Due to state government legislation, drowning incidents that occur in the Murray River are under New South Wales jurisdiction and are therefore reported in New South Wales drowning statistics. However, many of the drowning victims resided in Victoria. Therefore the key trends of Victorians drowning in the Murray River are a focus for this report.

Analysis found that 24 Victorians drowned in the Murray River over the 10 year period from 2006/07 to 2015/16. Of those 19 (79%) were males, and the median age of the deceased was 30 years. Four (17%) of the individuals that drowned were reported as being from CALD communities.

Half of the incidents occurred on a weekend (12, 50%). The majority of deaths occurred in summer (10, 42%), followed by autumn (7, 29%). The most common activity just prior to drowning was swimming (9, 38%) or walking/playing near water (4, 17%). Other typical activities included boating, and driving or recreating on a houseboat. In 38% (9) of drowning deaths in the Murray River, the person had reportedly consumed alcohol prior to the incident.

It was found that 42% (10) of those that drowned did not intend to enter the water, they slipped or fell into the water. Equally 42% (10) intentionally entered the water (swimming/paddling or wading in water) In the other four (17%) incidents the person was found floating and the type of entry was unknown.



Snapsho



Ballarat Statistical Area 4 - Drowning Statistics 2006/07-2016/17



Bendigo Statistical Area 4 - Drowning Statistics 2006/07-2016/17 Bendigo SA4 resider hospitalised due to 26 non-fatal drow 5 digo SA4 residents more drowning deaths occurring in Bendigo Jrowned in Victoria ligo SA4 dr Demographics Proportion of drowning deaths and population by age group (years) 30% 20% 10% **N**% 15-24 25-44 45-64 0-4 5-14 65+ Bendigo SA4 Population Bendigo SA4 Drowning Geelong Statistical Area 4 - Drowning Statistics 2006/07-2016/17 na SA4 re



Demographics

Proportion of drowning deaths and population by age group (years)





Location and Activity



Lake, river/creek/stream

Home swimming pools

齐 Walking/recreating near water

- ×
- Transport (for work/recreation)

Males were 6.0 times more likely to drown than females.





Walking/recreating

near water

Diving (SCUBA/Snorkelling)

were 1.9 times more likely to drown than females.



Latrobe-Gippsland Statistical Area 4 - Drowning Statistics 2006/07-2016/17



×

方

Walking near water/ rock walking



Melbourne-North West



Melbourne-North East

Drowning Statistics For All Melbourne SA4s

Statistical Area 4	Drowning deaths in SA4	Drowning deaths of residents in SA4	Residents in SA4 hospitalised	Emergency Department Presentations of residents in SA4	Likelihood of one or more drowning deaths within SA4 in any given year	Likelihood of one or more residents drowning in any given year
Melbourne - Inner	35	33	69	67	97%	96%
Melbourne - Inner East	14	21	37	44	75%	88%
Melbourne - Inner South	25	20	54	48	92%	86%
Melbourne - North East	11	16	35	40	67%	80%
Melbourne - North West	10	17	31	38	63%	82%
Melbourne - Outer East	16	26	56	57	80%	93%
Melbourne - South East	19	42	80	61	85%	99%
Melbourne - West	18	28	60	77	83%	94%



Proportion of Drowning Deaths and Population by Age Group (years)												
	0-4		5-14		15-24		25-44		45-64		65+	
Statistical Area 4	Population	Drowning										
Melbourne - Inner	5%	3%	7%	3%	15%	11%	42%	43%	20%	31%	11%	9%
Melbourne - Inner East	5%	0%	12%	14%	15%	7%	26%	14%	25%	7%	17%	57%
Melbourne - Inner South	6%	8%	12%	8%	12%	8%	28%	32%	25%	12%	16%	32%
Melbourne - North East	7%	27%	12%	9%	14%	36%	30%	0%	25%	9%	13%	18%
Melbourne - North West	7%	30%	14%	10%	14%	0%	29%	10%	24%	40%	13%	10%
Melbourne - Outer East	6%	6%	13%	19%	13%	25%	27%	25%	27%	13%	14%	13%
Melbourne - South East	7%	26%	13%	5%	15%	0%	29%	21%	24%	42%	13%	5%
Melbourne - West	8%	22%	13%	0%	14%	11%	33%	6%	23%	39%	9%	22%

Inner, Inner East, Inner South, North East, North West, Outer East, South East, West Melbourne Statistical Area 4 - Drowning Statistics 2006/07-2016/17

Melbourne

Outer East

Drowning Profiles By Victorian Statistical Areas 2005/06 To 2015/16

Latrobe-Gippsland SA4 Population

0-4

5-14

15-24

25-44

45-64

Latrobe-Gippsland SA4 Drowning

65-

0%



Location and Activity

#	Rivers/creeks
•	

- Beaches
- **1** Bathtubs
- Ē Home swimming pools
- * Walking/recreating near water
- **a**.
- **1**6~



North West Statistical Area 4 - Drowning Statistics 2006/07-2016/17 North West SA4 due to non-fatal ns of North st SA4 residents for North West ihood of one or 5(lest SA4 urring in North West od of one or more lents of North West SA4 drowning in any Location and Activity Demographics Proportion of drowning deaths and population by age group (years) Males ***** Lakes/dams/ irrigation channel were 7.0 30% times more Rivers/creek/stream likely to 20% Home swimming pools drown than ĸ 10% females. 2. 0% 5-14 15-24 25-44 45-64 0-4 65+ a rescue

North West SA4 Drowning

Shepparton Statistical Area 4 - Drowning Statistics 2006/07-2016/17



Proportion of drowning deaths and population by age group (years) 40% 30% 20% 10% 0% 15-24 25-44 0-4 5-14 45-64 65+ Shepparton SA4 Population Shepparton SA4 Drowning

Warrnambool and South West Statistical Area 4 - Drowning Statistics 2006/07-2016/17



Demographics





North West SA4 Population

- **Boating**

than females.



Location and Activity



Males were 13.0 times more likely to drown than females.

This report includes unintentional fatal and non-fatal drowning incidents reported in Victoria. Australia. An overview of fatal drowning for 1 July 2016 to 30 June 2017 is provided and compared with non-fatal drowning incidents for the same time period. Comparisons between the latest financial year and five, 10 or 15 year averages were calculated from fatal and non-fatal drowning data in Victoria from 1 July 2001 to 30 June 2016.

FATAL INCIDENTS

Information on fatal drowning incidents was collected from the Coroners Court of Victoria. and the National Coroners Information System (NCIS). Deaths due to natural causes, suicide, or homicide are excluded from this report.

Coronial information relates to both open and closed cases. While all care is taken to ensure that the results are as accurate as possible, these figures are provisional only as coronial investigations and findings relating to open cases may alter the reported drowning figures. At the time of compilation 89% of suspected unintentional drowning cases in 2016/17 remained open on the NCIS.

NON-FATAL INCIDENTS

Information on non-fatal drowning in 2016/17 was provided by Ambulance Victoria (AV). Cases of non-fatal and immersion related injuries attended by AV paramedics were extracted from the VACIS® clinical information system. Potential drowning data for this report was identified via a database search for all drowning related dispatch codes identified at the emergency call-taker level, as well as cases in which paramedics reported a final assessment of 'post immersion'. Only patients reported as suffering respiratory compromise or vomiting as a result of immersion were included in analyses.

Information on non-fatal drowning from 2006/07 to 2015/16 was provided by the Victorian Injury Surveillance Unit (VISU). Data included non-fatal and immersion related injuries extracted from the Victorian Emergency Minimum Dataset (VEMD) and Victorian Admitted Episodes Dataset (VAED) for the period 1 July 2006 to 30 June 2016.

The VEMD is a dataset containing records of emergency department presentations in Victorian hospitals with 24-hour emergency services. 100% state-wide coverage of these hospitals applies from 2004. Data were selected if the cause of injury was 'drowning/near drowning' or the terms 'drown', 'submerged', 'immersion' and their variations were included in the "Description" variable. Further to this, all injuries coded to drowning or immersion were also selected. Finally any injury coded to a drowning or non-fatal drowning cause code with the mention of 'decompression illness' in the description was also chosen.

These cases were then manually screened to ensure that they were submersion or non-fatal drowning cases. Cases were retained if the "Human Intent" was coded to "Non-intentional harm". Cases were limited to incidence (excludes return visits and pre-arranged admissions).

The VAED is a record of all hospital admissions in the state of Victoria. VAED data is coded to the International Statistical Classification of Diseases and Related Health Problems. Tenth Revision. Australian Modifications (ICD-10-AM). VAED records were initially extracted if the principal diagnosis was a community injury (S00-T75 or T79 ICD 10 AM code). Cases were then extracted if there was a drowning injury diagnosis (ICD 10 AM code of T75.1 "Drowning and non-fatal submersion") anywhere in the 40 diagnosis codes or the external cause code was in the range W65-W71 (accidental drowning and submersion) or V90 (accident to water craft causing drowning and submersion) or V92 (water-transport-related drowning and submersion without accident to watercraft). Admissions as a result of transfer from another hospital or due to a statistical separation from the same hospital were excluded. Readmissions for day-treatments within 30 days of initial admission were excluded.

Drowning deaths from either AV or VISU data were excluded to avoid an overlap with Life Saving Victoria fatal drowning data.

INCIDENCE CALCULATIONS

Incidence calculations were performed using population figures published by the Australian Bureau of Statistics, 2016 (Australian Bureau of Statistics [ABS], 2016a)

RELATIVE RISK MAPS

Relative risk maps were created to illustrate the degree to which observed drowning risk is greater than or less than the expected drowning risk at that location. Relative risk ratios were calculated using grouped event counts (incident and residence) and population counts within each postcode. This method was applied across multiple timeframes for time-based comparative analysis.

The maps illustrate excess risk rates using postcode and population counts for consecutive five year periods, as well as an overall 15 year timeframe (2001/02 to 2015/16). The underlying population counts were taken from three separate censuses, 2006, 2011 and 2016. The following counts were used for the aggregate event timeframes:

- 2006 census for events from 2001/02 -2005/06 (ABS, 2016a)
- 2011 census for events from 2006/07 -2010/11 (ABS, 2016b)
- 2016 census for events from 2011/12 -2015/16 (ABS, 2016b)

For the overall 2001/02 to 2015/16 aggregated relative risk calculation an average of the three censuses was used. This approach was used in order to factor changing population counts across the 15 years specific to each postcode.

PROBABILITY CALCULATIONS

Probabilities for Victorian Statistical Area Level 4 (SA4) regions were computed demonstrating the likelihood of at least one drowning event occurring within each of the 17 Victorian regions. Probabilities were calculated based on yearly means (spanning 10 years from 2006/07 to 2015/16) for each SA4 region. Using yearly means provides the ability to devise the likelihood of one or more drowning events in each SA4 in any given year.

Probabilities were computed based on the incident location of events and based on the resident location of events. Incident location and resident location events were geocoded and counted within each Victorian SA4 for the given 15-year period. This process enabled a mean for each SA4 to be devised, then the calculation of the different SA4 probabilities for each event type (Incident and Resident).

GEOGRAPHICAL CLASSIFICATION

Geographical classification of fatal and non-fatal drowning variables used the Australian Statistical Geography Standard (ASGS; ABS, 2016c). The ASGS is the Australian Bureau of Statistics' geographical framework. Data were categorised into Remoteness Areas and Statistical Areas. Data were extracted from the Census DataPack applicable to each census time period. These can be accessed from the Australian Bureau of Statistics website:

http://www.abs.gov.au/websitedbs/D3310114. nsf/home/ABS+Geography+Publications

MURRAY RIVER FATAL DROWNING ANALYSIS

This year's report includes analysis of Victorians who drowned in the Murray River from 2006/07 to 2015/16. This research was conducted as part of the Inland Waterways Drowning Prevention project by Royal Life Saving Society - Australia and funded by the Australian Government.

Information on incidents was collected from the Royal Life Saving National Fatal Drowning Database and the NCIS. Methods for reporting these incidents is as per all Victorian fatal drowning incidents as reported above.

AGENCIES

GOVERNMENT ENTITIES

Life Saving Victoria
Aquatics & Recreation Victoria
Australian Sailing
Australian Volunteer Coast Guard
AUSTSWIM
Belgravia Leisure
Boating Industry Association of Victoria
Canoeing Victoria
Coroners Prevention Unit
Dragon Boating Victoria
Kidsafe Victoria
Kiteboarding Australia
Surfing Victoria
Swimming Pool and Spa Association of Victoria
Swimming Victoria
Triathlon Victoria
Victorian Municipal Building Surveyors Grou
VRFish (Victorian Recreational Fishing Peak Body)
YMCA Victoria

Country Fire Authority Department of Education and Training Department of Environment, Land, Water & Planning Department of Justice and Regulation Emergency Management Victoria Emergency Services Telecommunications Authority Fisheries Victoria (Department of Economic Maritime Safety Victoria (Transport Safety Victoria) Municipal Association of Victoria Parks Victoria Royal Children's Hospital Safety Centre Tourism Victoria Victoria Police Victorian Building Authority Victorian Multicultural Commission Victorian Coastal Council

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Development, Jobs, Transport and Resources)

LOCAL GOVERNMENT AREAS AND LAND MANAGERS

(financial contributors to the Victorian Paid Lifeguard Service)

Barwon Coast Committee of Management INC Bass Coast Shire Council Colac Otway Shire Council East Gippsland Shire Council Glenelg Shire Council Great Ocean Road Coast Committee Greater Geelong City Council Mornington Peninsula Shire Council Movne Shire Council Parks Victoria (Wilsons Promontory National Park) Queenscliffe Borough South Gippsland Shire Council Surf Coast Shire Council Warrnambool City Council Wellington Shire Council



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- Department of Justice and Regulation
- Emergency Management Victoria
- National Coroners Information System
- Royal Life Saving Society Australia
- Surf Life Saving Australia
- Victorian Injury Surveillance Unit

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Dr Bernadette Matthews is the Principal Research Associate for Life Saving Victoria. Bernadette specialises in aquatic injury prevention research, from epidemiology of fatal and non-fatal drowning, injuries at public swimming pools and patrolled beaches, and aquatic safety signage recognition and recall, through to evaluation of education programs and major public awareness campaigns. Bernadette has a background in health science, completing her doctoral thesis in 2004.

Rhiannon Birch is the Project Coordinator - Risk and Research for Life Saving Victoria. Rhiannon assists in the planning and coordination of LSV's research on injury prevention and water safety issues, including inland waterways drowning prevention, the water competency of children and older adults in Victoria, public pool safety, multicultural campaigns and international drowning prevention research. Rhiannon holds organisations, including managing LSV's a Bachelor of Environmental Science and Graduate Diploma in Education.

Robert Andronaco is the Risk and Spatial Analysis Specialist at Life Saving Victoria. In his role he focuses on quantifying drowning risk and assisting land managers in mitigating assessed risks specific to recreational drowning and injury. Robert uses both traditional statistical approaches and spatial statistical analysis approaches in quantifying drowning risks. Robert holds a Masters in Sport and Recreation Management and a Post Graduate Diploma in Risk Management. He is a current PhD candidate at RMIT in the School

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Grace Strugnell is the Project Officer - Risk and Research at Life Saving Victoria. Grace's role involves observational, gualitative and quantitative data collection, monitoring, evaluation and ethical storage for a range of water safety and drowning prevention programs. This encompasses a vast range of environments and demographics including inland waterways, metropolitan and regional schools, older adults, public pools and coastal regions. Grace is nearing completion of her Bachelor of Public Health and Health Promotion at Deakin University, Melbourne.

Jennifer Arch is the Communications -Project Manager for Life Saving Victoria. Her role involves managing communications for aquatic risk and research projects, including conducting evaluation and reporting of the Respect the River and Play it Safe by the Water campaigns. Jennifer's background is in media and communications for emergency services and not-for-profit media and communications team for five vears. Jennifer holds a Bachelor of Arts (Media Studies) and Graduate Diploma (Public Relations).

"TWO NEW INCLUSIONS IN THIS YEAR'S REPORT, PROVIDE FURTHER SNAPSHOTS OF DROWNING IN PUBLIC SWIMMING POOLS AS WELL AS CHILDREN DROWNING IN HOME POOLS. BOTH OF THESE ISSUES HAVE **BEEN IDENTIFIED AS KEY PRIORITY AREAS** FOR ACTION AND WILL BE AREAS **OF SIGNIFICANT FOCUS IN OUR DROWNING PREVENTION ACTIVITIES FOR 2017/18.**"

Dr Nigel Taylor ESM Chief Executive Officer. Life Saving Victoria





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