



TRENDS IN CHILD DROWNING OVER THE LAST 25 YEARS

Research Report



ROYAL LIFE SAVING
AUSTRALIA

ABOUT ROYAL LIFE SAVING

Royal Life Saving is focused on reducing drowning and promoting healthy, active and skilled communities through innovative, reliable, evidence based advocacy; strong and effective partnerships; quality programs, products and services; underpinned by a cohesive and sustainable national organisation.

Royal Life Saving is a public benevolent institution (PBI) dedicated to reducing drowning and turning everyday people into everyday community lifesavers. We achieve this through: advocacy, education, training, health promotion, aquatic risk management, community development, research, sport, leadership and participation and international networks.

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Australian Government

TRENDS IN CHILD DROWNING OVER THE LAST 25 YEARS

Worldwide, children under five remain the age group at highest risk of unintentional fatal drowning. This is also true in Australia, where, over the past 25 years, a total of 965 children under the age of five have died from drowning. While these figures are horrifying, during this time, we have seen the rate of unintentional fatal drowning among children under five, has declined by 67%.

Such reductions have been possible due to a concerted effort in areas such as government policy and enforcement, public awareness and education, advocacy and research. The introduction and subsequent strengthening of pool fencing legislation, including the introduction of swimming pool registers and inspection regimes, has contributed to making the home pool environment, safer for young children.

Parent and care giver education on the importance of active adult supervision and CPR skills, communicated through programs such as Royal Life Saving's Keep Watch program, have also strengthened awareness of the risk factors and strategies for prevention of child drowning.

Over the next 25 years, and into the future, Royal Life Saving will continue to advocate for the strengthening of pool fencing legislation across Australia's States and Territories, educate parents and carers on the importance of active adult supervision through the Keep Watch program and train community members in safe rescue and resuscitation skills. Together, we can continue to reduce drowning among this at-risk age group, and spare families and loved ones the pain of losing a child to drowning.

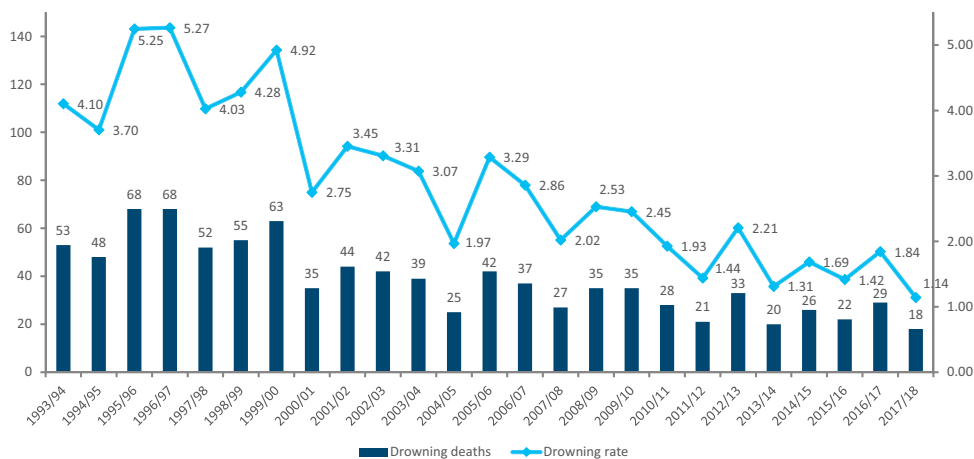
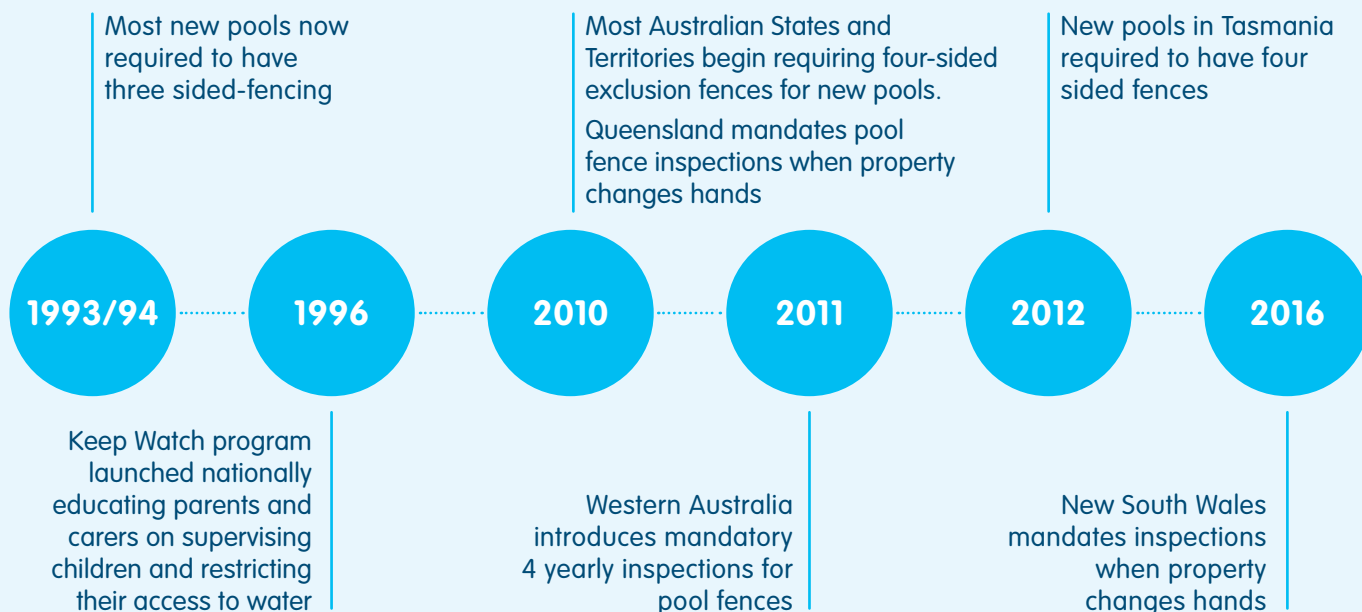


Figure 1: Drowning deaths among children 0-4 years by financial year, 1993/94 to 2017/18

Swimming Pool Legislation Timeline



CASE STUDY: LIVES SAVED

We can estimate the number of drowning deaths averted as a result of the reduced drowning rate by comparing actual numbers of drowning deaths to the projected numbers had the average drowning rate in the five years between 1993/94 and 1997/98 continued to prevail over the twenty years to 2017/18.

For the five years between 1993/94 and 1997/98, the average rate of child drowning was 4.35 per 100,000 persons. Over the following 20 years, the average drowning rate fell to 2.49 per 100,000 persons, a 43% reduction in the rate of child drowning.

Over the 20 financial years between 1998/99 and 2017/18, the reduction in drowning rates has saved an estimated 567 children's lives, compared to what would have happened had rates observed in the first five years of the study period remained in effect.

Figure 2 sets out the estimated annual lives saved as a result of the reduced rate of child drowning. While initial gains were relatively small (and actually negative in 1999/2000), Figure 2 shows how the gradual decline in child drowning rate has led to dozens of lives saved each year over the last decade.

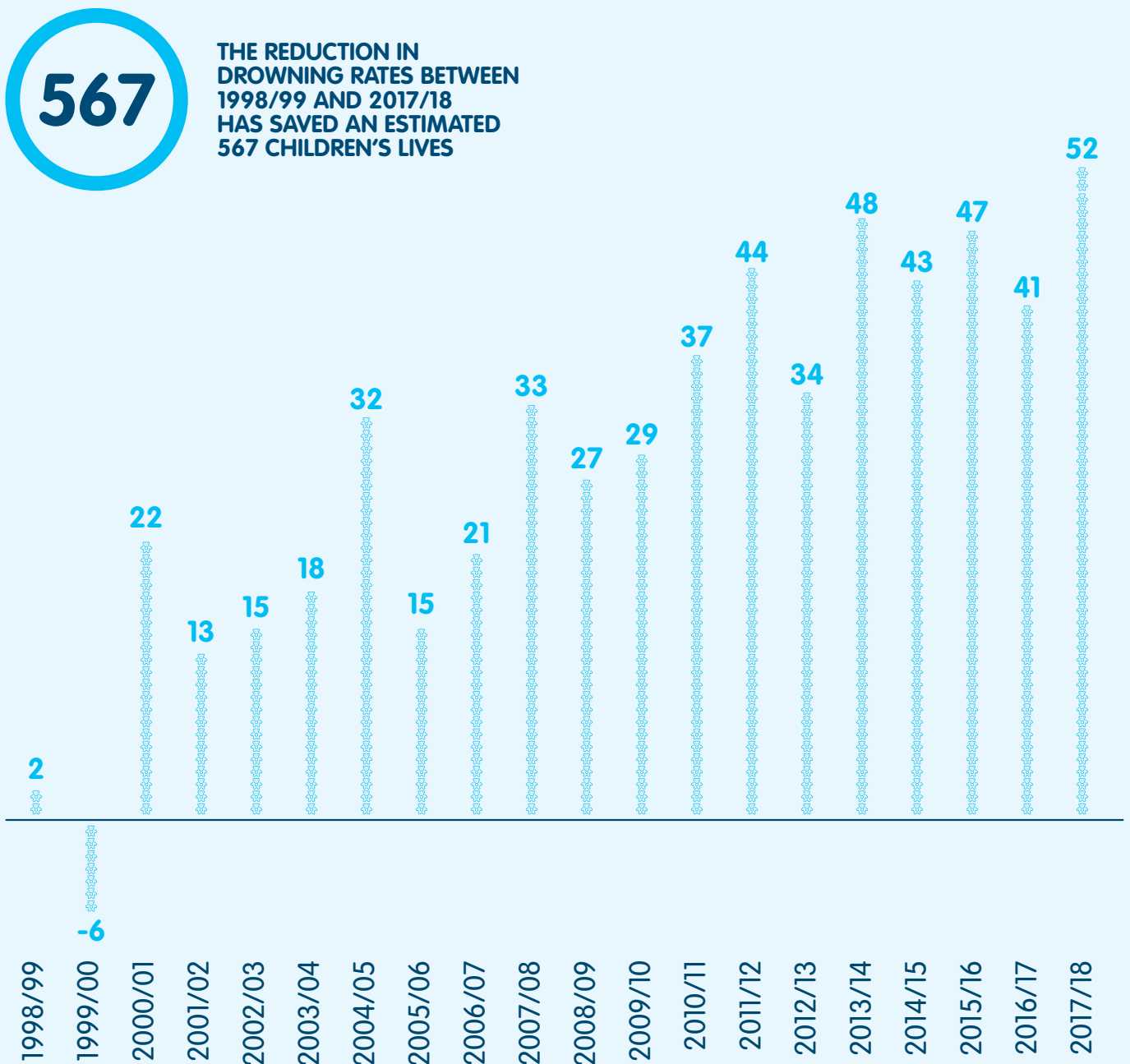


Figure 2: Lives saved relative to 93/94 to 97/98 drowning rates, by year



ANALYSIS OF 16 YEARS OF CHILD DROWNING – 2002/03 TO 2017/18

For an in-depth analysis of the demographics and causal factors for unintentional fatal drowning among children 0-4 years in Australia, the most recent 16 years of data (2002/03 to 2017/18) drawn from the Royal Life Saving National Fatal Drowning Database has been used. This data is primarily drawn from the National Coronial Information System (NCIS) which provides in-depth data through a combination of coroner's reports, police reports, autopsy and toxicology reports.

Demographics

For the 16 years under analysis, 479 children under the age of five drowned in Australia. Males accounted for 61% of all drowning deaths. The risk of drowning peaks at the 1-2 years age band, with 66% of all drowning deaths occurring among children of this age. Drowning risk peaks at this age, due to children being more mobile and exploring their surroundings, without the swimming skills nor understanding of risk.

State and Territory

When examining child drowning deaths by State and Territory, Queensland recorded the highest number of drowning deaths with 156, closely followed by New South Wales with 149. As a drowning rate, the Northern Territory recorded the highest rate at 3.38 drownings per 100,000 population, followed by Queensland with a rate of 3.36. Tasmania recorded the lowest number of drowning deaths (6) and drowning rate (1.21).

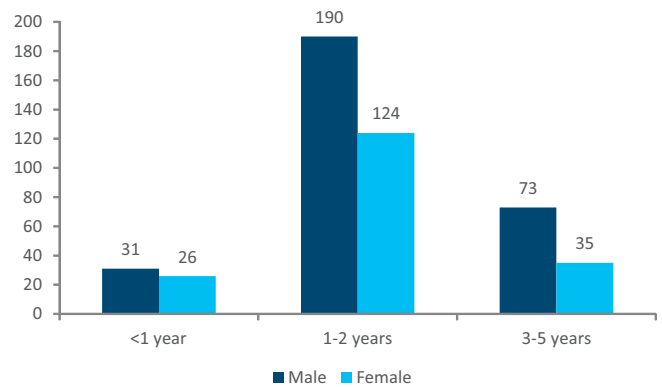


Figure 3: Drowning deaths among children 0-4 years by sex and specific age 2002/03 to 2017/18

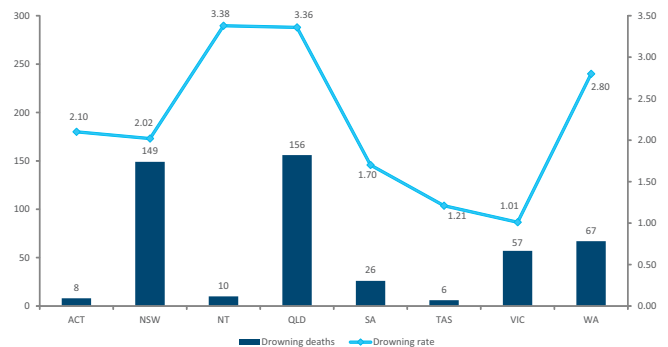


Figure 4: Drowning deaths and crude drowning rate per 100,000 residents among children 0-4 years by State or Territory, 2002/03 to 2017/18

CASE STUDY: NON-FATAL DROWNING IN CHILDREN UNDER FIVE IN AUSTRALIA

Research conducted by Royal Life Saving shows that, for every fatal child drowning, there are several non-fatal incidents leading to hospital visits and, in 7% of cases, permanent disability.

An examination of 13 years of non-fatal drowning data between 2002/03 and 2014/15 shows that there were 7.6 non-fatal drowning incidents per fatal drowning in under 5s over that period. This ratio takes into account all hospital visits categorised as primarily relating to drowning or submersion, and uses a sampling approach to capture the estimated 17% of non-fatal child drowning cases who are incorrectly classified in hospital admission data.

If we assume that the same ratio of non-fatal to fatal drowning held during the years for which we do not have non-fatal drowning data, we can estimate the likely number of cases of non-fatal child drowning over the 25 year study period. Our methods suggest that there were 3,713 non-fatal incidents between July 1993 and June 2002, and 527 incidents between July 2015 and June 2018. In addition to the 3,121 incidents recorded in hospital admissions data between 2002/03 and 2014/15, this implies that there were around 7,361 victims of non-fatal child drowning over the 25 year period studied, or an average of 294 per year. As with fatal drowning, our modelling suggests a significant fall in the frequency of non-fatal child drowning, with estimated highs of 520 incidents in 1995/96 and 1996/97 and a low of 138 in 2017/18.

Location of drowning incident

Swimming pools are the leading location for drowning deaths among young children in Australia, accounting for 52% of all drowning deaths.

This was followed by bathtub/spa baths, which accounted for a further 16% of deaths. Locations classified as 'other' include fish ponds, irrigation channels, troughs, eskies and buckets among others.

Activity immediately prior to drowning

Unintentional entry into water, in the forms of accidental falls were the leading activity being undertaken immediately prior to drowning among children under five, accounting for 77% of all drowning deaths. Bathing accounted for 16% of all drowning deaths.



OF DROWNING DEATHS AMONG YOUNG CHILDREN IN AUSTRALIA OCCURED IN SWIMMING POOLS



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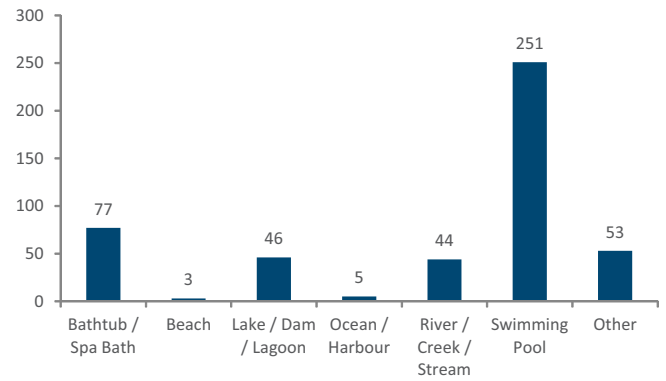


Figure 5: Drowning deaths among children 0-4 years by location, 2002/03 to 2017/18

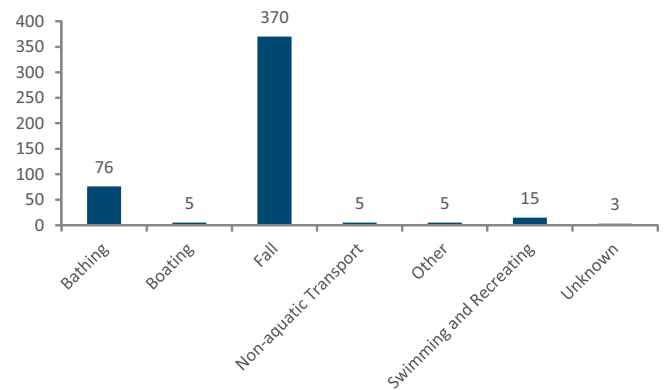


Figure 6: Drowning deaths among children 0-4 years by activity, 2002/03 to 2017/18

CASE STUDY: KEEP WATCH

The Keep Watch program is Australia's most comprehensive drowning prevention and water safety program for parents and carers of children under five. For over 20 years, the Keep Watch program has been educating Australian parents and carers on how to keep their children safe when in, on or around the water across locations such as the swimming pool, the bathtub, on farms and at public pools.

The program has four key drowning prevention actions. These should not be used individually but together to maximise child safety.

If one line of defence fails, the other prevention measures will be actively working to prevent your child from drowning.

The four key actions are:

- Supervise
- Restrict Access
- Water Awareness
- Resuscitation

For more information visit: keepwatch.com.au

METHODS

Cases of unintentional fatal child drowning included in this report from 2002/03 are drawn from the Royal Life Saving National Fatal Drowning Database, which in turn draws detail primarily from the National Coronial Information System (NCIS), media, police and lifesaving club reports. Data on drowning prior to 2002/03 was sourced from state and territory coronial services, police departments, the Australian Bureau of Statistics, Royal Life Saving State and Territory offices and media reports.

National, and State and Territory drowning rates are calculated using population data from the ABS. Non-aquatic transport incidents refers to drowning deaths involving means of transport not primarily designed or intended for aquatic use such as cars, motorbikes, bicycles and aeroplanes among others. The category of 'swimming pool' includes home swimming pools, public swimming pools, hotel and motel swimming pools and portable pools among others.

Lives saved were calculated using the average child drowning rate per 100,000 for the five years between 1993/94 and 1997/98. Lives saved were calculated by comparing the difference between the projected and the actual rates of child drowning.





CASE STUDY: **POOL FENCING LEGISLATION**

Backyard pools represent a major cause of drowning among children under 5. The passage and enforcement of home pool fencing regulations, the most demanding of which require four sided isolation fencing and mandate regular inspections, has greatly reduced the rate of drowning in home pools.

Risk of child drowning in home pools is measured using the Swimming Pool Drowning Index, or SPDI, which measures the number of fatalities against both the size of the under 5 population and the proportion of them who have access to a home pool. In 2002/03, the earliest year for which home-pool specific data is available, there were 18 under 5 fatalities from a population of 1,269,008, 10.65% of whom had access to a pool at their home. In 2016/17, fatalities had fallen to 12, despite under 5 population growing to 1,600,397 and rates of pool ownership rising to 12.97%.

This means that the SPDI for Australia, measuring the rate of drowning per child with access to a home pool, fell from 13.32 in 2002/03 to 5.78 in 2016/17 – a fall of 56.6%.

In Western Australia, which has adopted best practice pool fencing regulation, including both mandating four sided fencing and regular inspections, rates of compliance with fencing laws are more than twice as high as in States without regular inspections and the SPDI is even lower, at 4.78 per 10 million children with pool access.



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