



# 10-year analysis of drowning in children 5-14 years in Australia

2011-12 to 2020-21



**ROYAL LIFE SAVING**  
AUSTRALIA

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## ABOUT ROYAL LIFE SAVING

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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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### > OUR VISION

**A water-loving nation  
free from drowning.**



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# Snapshot

105

Children aged 5 – 14 years drowned in Australia between 2011/12 and 2020/21

The fatal drowning rate of children aged 5 – 14 years was **0.35/100,000** population.

Average of **10 child (5-14 years) drowning deaths** per year.

71% were males (2.5 males: 1 female)

## Age groups

62%

### 5-9 years

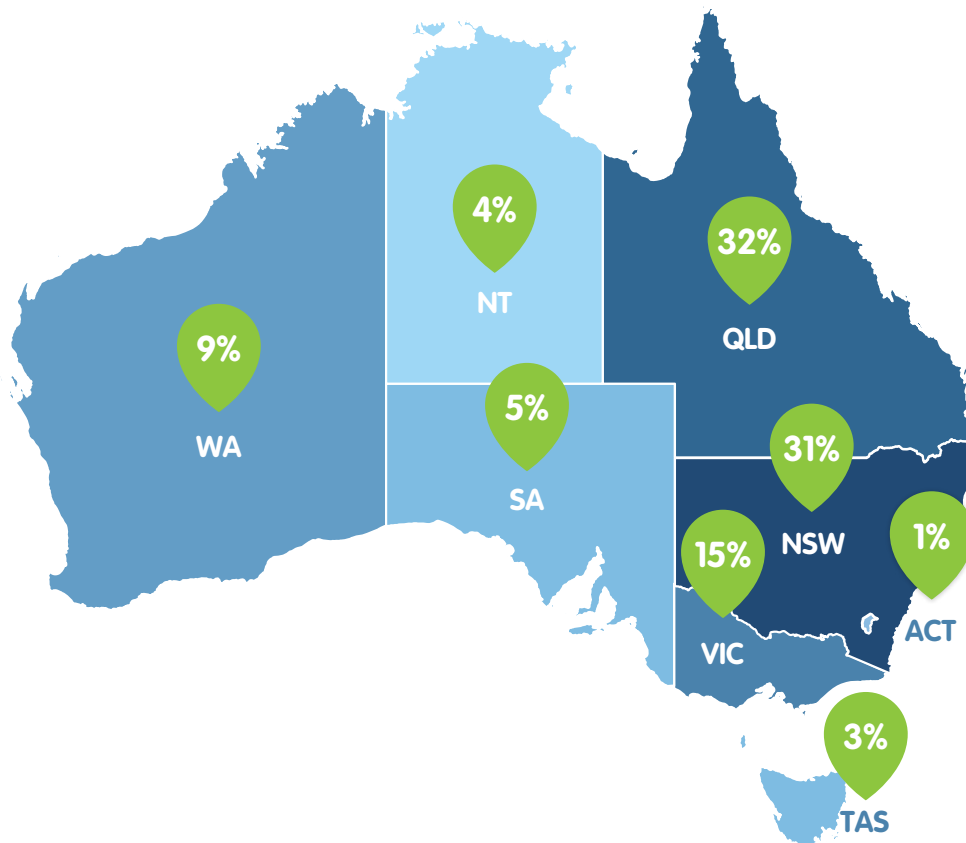
Fatal drowning rate for children aged 5-9 years was **0.42/100,000** population.

38%

### 10-14 years

Fatal drowning rate for children aged 10-14 years was **0.27/100,000** population.

## State and Territory breakdown



Pre-existing medical condition



**26%**  
of children who drowned  
had a pre-existing  
medical condition.

The fatal drowning rate for children aged 5 – 14 with a pre-existing medical condition was **0.09/100,000** population.

Non-Fatal Drowning



estimated  
non-fatal incidents  
in 5-9 years  
**1 fatal: 7 non-fatal**



estimated  
non-fatal incidents  
in 10-14 years  
**1 fatal: 6 non-fatal**

Top three pre-existing medical conditions were

**9%**

Epilepsy or other  
seizure disorder

**6%**

Autism

**4%**

Asthma

Activity



**52%**  
Swimming & recreating

Location



**24%**  
Swimming Pools



**14%**  
Fall



**22%**  
River/Creek



**8%**  
Bathing



**20%**  
Lake/Dam

Swimming pool locations

**60%**

were home swimming  
pools/spas

**28%**

were public pools

**12%**

were communal or publicly  
accessible swimming pools  
(hotel/motel/resort pools)

## EXECUTIVE SUMMARY

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This report adds to a growing body of knowledge about child and adolescent drowning factors [1]. It highlights our research and analysis of fatal drowning of children aged 5 – 14 years across Australia between 1st July 2011 and 30th June 2021. During this time, 105 children aged 5 – 14 years drowned in Australia. On average there were 10 child (aged 5-14 years) drowning deaths per year. The fatal drowning rate of children aged 5 – 14 years was 0.35/100,000 population.

Drowning is rarely the result of a single cause. Key risk factors for drowning among this age group include: Children's growing independence and continuing need for constant adult supervision around water; medical conditions; over-estimation of children's swimming ability; under-estimation of risk at aquatic locations; and rapid changes in weather and/or aquatic conditions.

Risk-taking is a natural, necessary element of human development. The danger is when the perception of ability is not aligned with actual capabilities [2-4]. While unknown aquatic locations are most often where adults can over-estimate their swimming abilities and underestimate the risk present [5], for children aged 5 – 14 years, this report identifies that drowning incidents occur primarily at known aquatic environments: at home or within five kilometers of home (distances children can access independently without using a car or public transport).

By identifying areas where children aged 5 – 14 years are most at risk of drowning, Royal Life Saving Society - Australia hopes to provide a strong evidence base for collaborative water safety and drowning prevention advocacy and action.

### Objectives

This study aims to:

- › Analyse long-term trends of drowning among children 5-14 years
- › Identify key risk factors for drowning among this age group
- › Identify new / emerging issues for drowning among this age group
- › Provide new or enhanced recommendations for prevention strategies





## Results: Who drowns?

One hundred and five children aged 5 – 14 years drowned in this ten-year period. An average of 10 children in this age group drowned each year.

The drowning rate for children aged 5 – 14 years decreased between 2016/17 and 2017/18 but has been increasing since the start of the COVID-19 pandemic (2019/20 and 2020/21).

The lowest fatal drowning rate of children aged 5 - 14 was recorded in 2018/19, at a rate of 0.25/100,000 population. The highest fatal drowning rate of children aged 5 – 14 was recorded in 2011/12, at a rate of 0.5/100,000 population, followed by 2020/21, at a rate of 0.43/100,000 population.

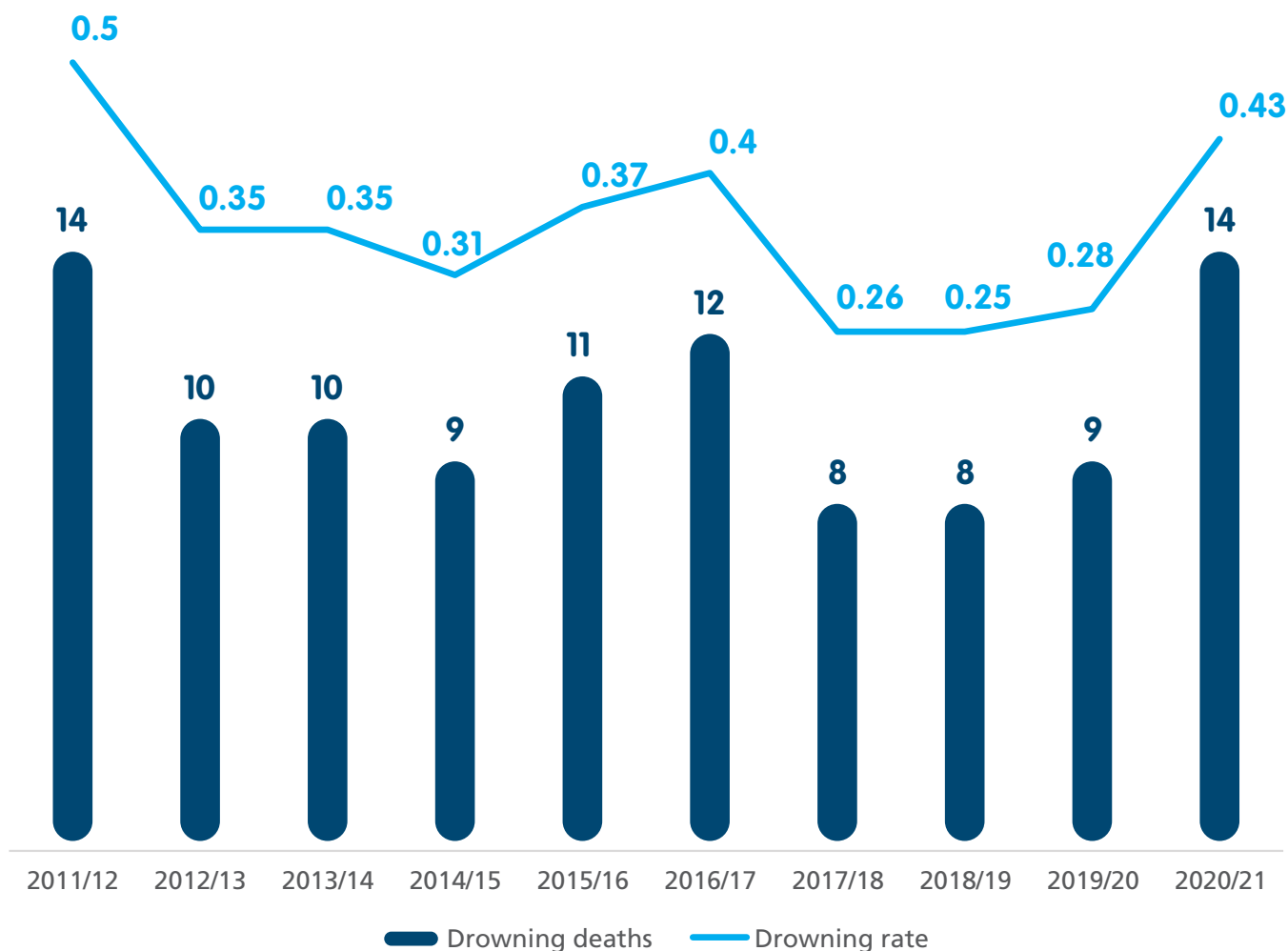


Fig. 1 Drowning deaths among children 5 – 14 years by financial year, 2011/12 to 2020/21



## Age

Children aged 5 – 9 represented the highest number of drowning deaths (62%) (n=65) compared with children aged 10 – 14 (38%) (n=40).

The fatal drowning rate for children aged 5 – 9 years was 0.42/100,000 population. The fatal drowning rate for children aged 10 – 14 years was 0.27/100,000 population.

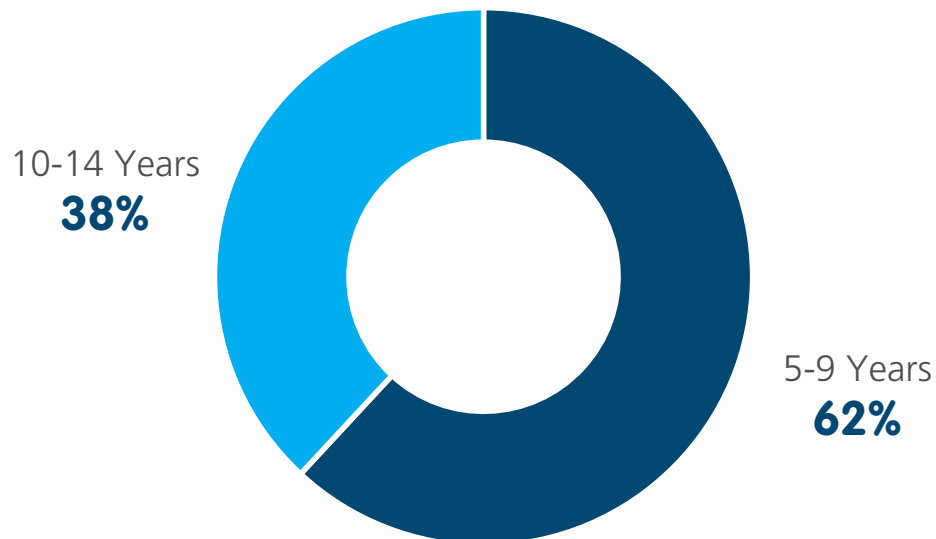


Fig. 2 Drowning deaths for children 5 – 14 years by age groups

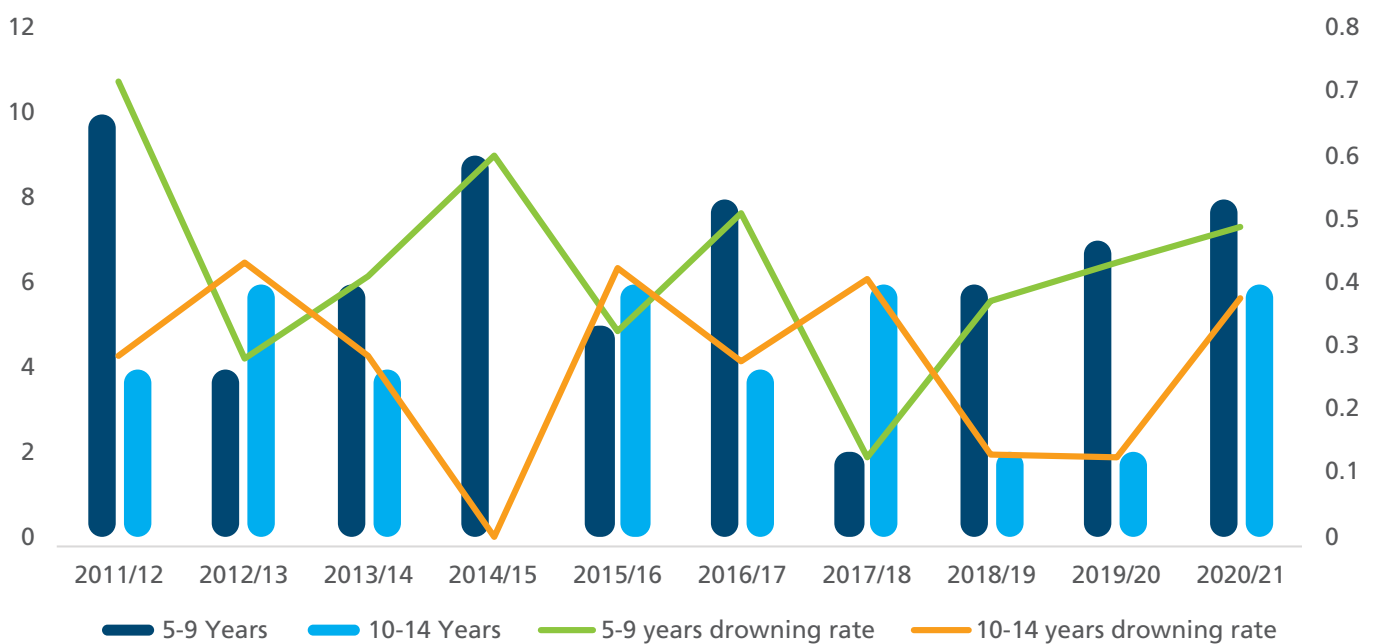


Fig 3. Number of drowning deaths and age-adjusted drowning rate per 100,000 population for children 5 – 14 years by age groups and financial year, 2011/12 to 2020/21

**Sex**

**75 males and 30 females drowned**

Consistent with all other drowning statistics, male children aged 5 – 14 years were overrepresented in the drowning data. Overall, males were 2.5 times more likely to be involved in a fatal drowning incident than females.

Males aged 5- 9 years were 1.8 times more likely to drown than males aged 10 – 14 years.

Females aged 5 – 9 years were 1.1 times more likely to drown than females aged 10 – 14 years

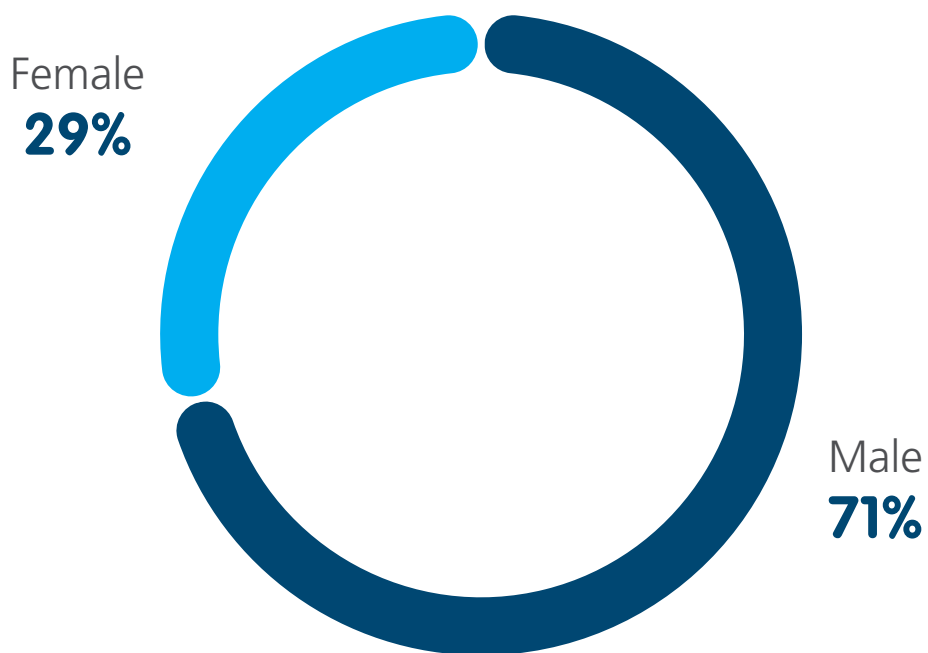


Fig 4. Drowning deaths for children aged 5 – 14 years by sex

### Socio-economic status

Overall, 51% (n=54) of children in mid-decile area (areas of moderate disadvantage) were at the greatest risk of drowning, followed by 34% (n=36) of children in low-decile areas (areas of high disadvantage). Children in high decile areas (areas of low disadvantage) made up 9% (n=10) of drowning incidents with n=5 cases unknown or from overseas.

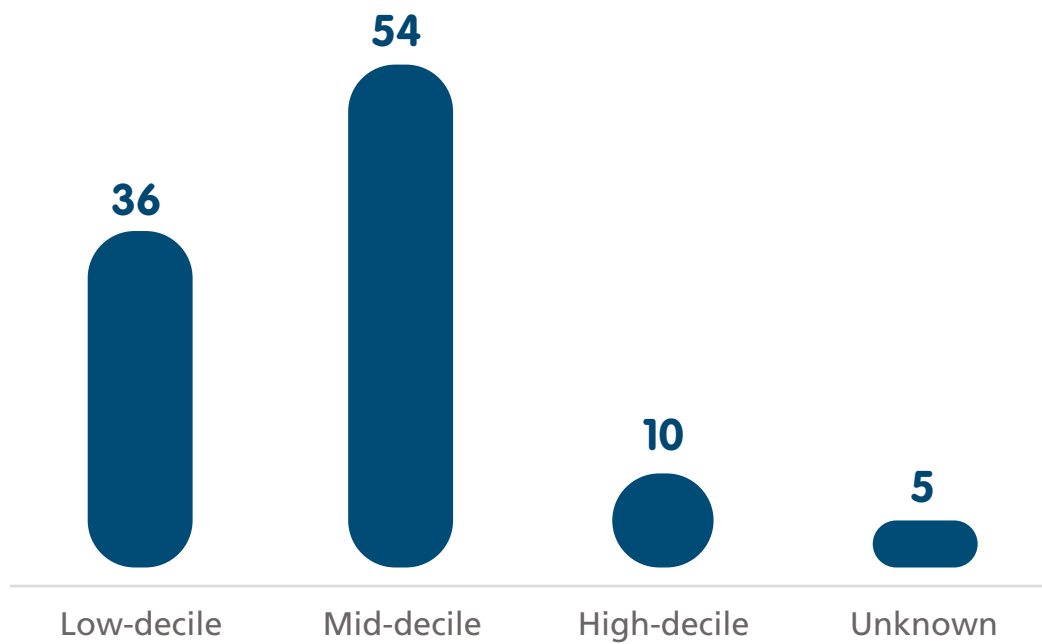


Fig 5. Drowning deaths for children aged 5-14 years by socio-economic status

### Aboriginal and Torres Strait Islander children

Aboriginal and Torres Strait Islander children made up 13% (n=14) of fatal drowning incidents and were 2.4 times more likely to drown than non- Aboriginal and Torres Strait Islander children.

The overall fatal drowning rate for Aboriginal and Torres Strait Islander children aged 5 – 14 years was 0.77/100,000 population. In comparison, the fatal drowning rate of non-Aboriginal and Torres Strait Islander children was 0.32/100,000 population.

The fatal drowning rate for Aboriginal and Torres Strait Islander children aged 5 – 9 years was 5.5 times higher than for Aboriginal and Torres Strait Islander children aged 10 -14 years (1.27/100,000 population compared to 0.23/100,000 population).

As with other drowning data, males are overrepresented in Aboriginal and Torres Strait Islander drowning deaths, with 64% being male and 36% being female.

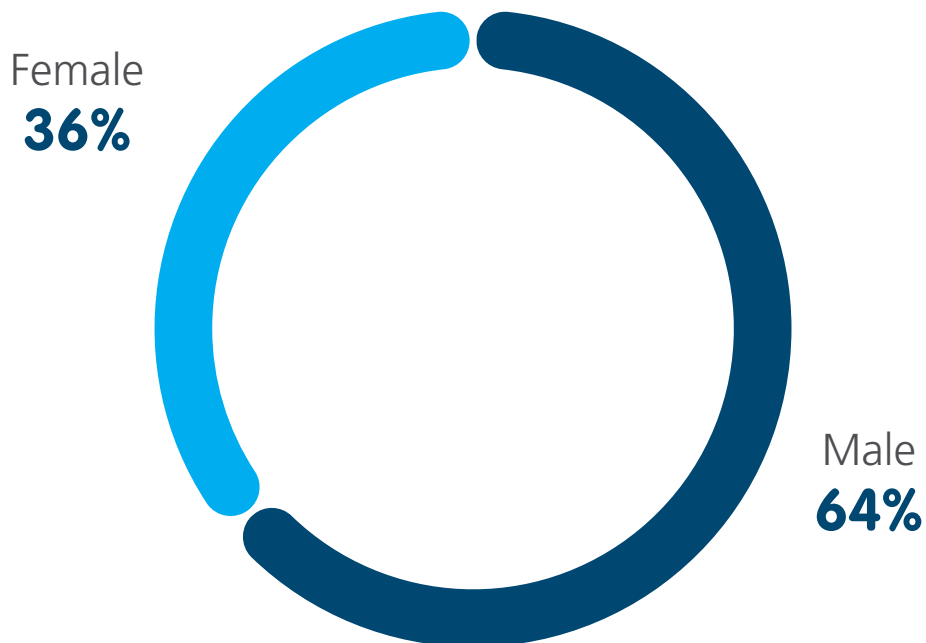
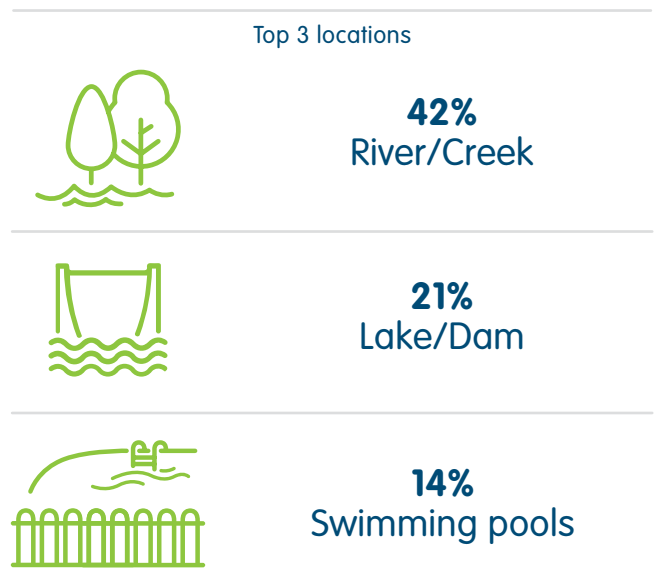


Fig 6. Drowning deaths for children aged 5 – 14 years by Aboriginal or Torres Strait Islander Status and sex

### Born overseas

The majority (71%) of children 5-14 years who fatally drowned were born in Australia, and 12% were born overseas. The remaining cases (17%) have an unknown country of birth.

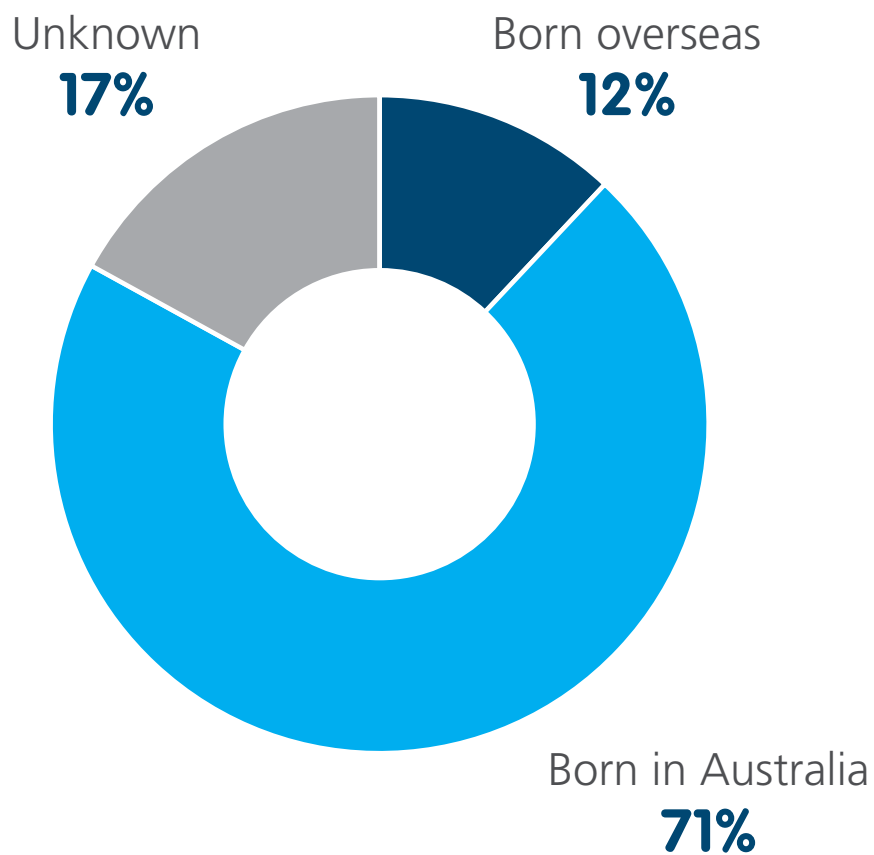
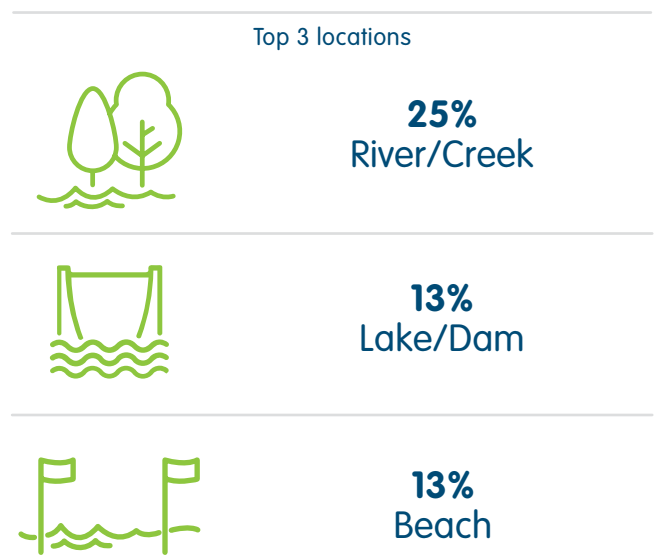


Fig 7. Drowning deaths for children aged 5 – 14 years born overseas



## When did children drown?

Drowning deaths of children aged 5 – 14 years occurred primarily in summer (46%), on Saturdays (25%) in the afternoon (12.01pm - 6pm) (73%).

### Season

Summer was the most common season for fatal drowning incidents (46%), followed by spring (21%), autumn (19%) and winter (14%).

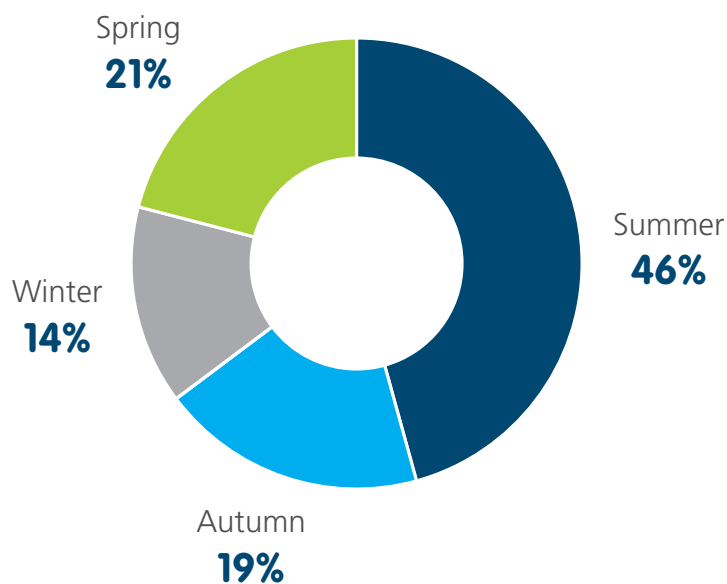


Fig 8. Drowning deaths for children aged 5 – 14 years by season

### Month

The highest number of drowning incidents occurred in December (22%), followed by January (14%) and November (11%).

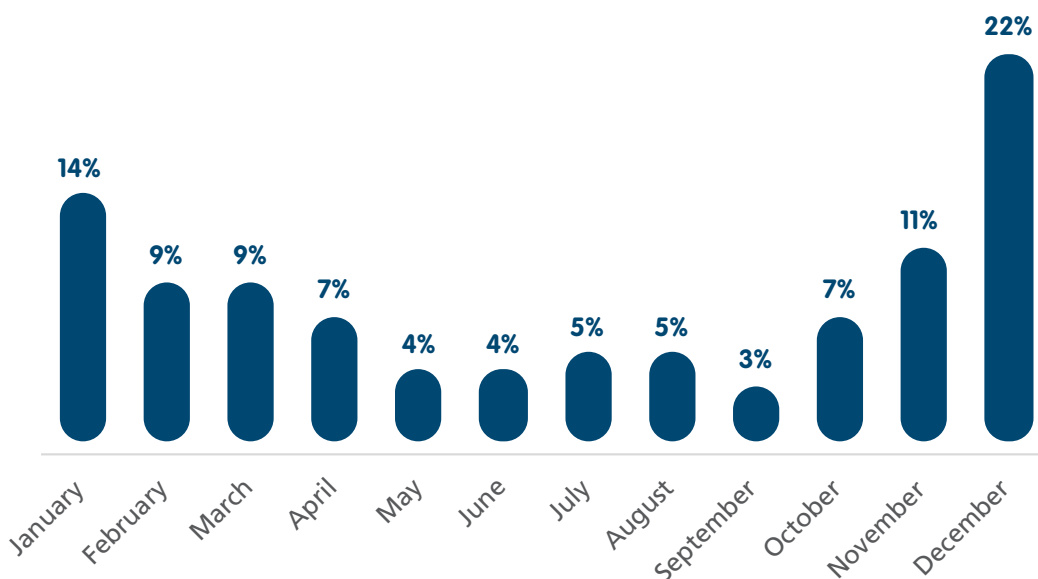


Fig 9. Drowning deaths for children aged 5 – 14 years by month

### Day

Children aged 5 – 14 years are most likely to drown on a Saturday (25%), Friday (18%) and Sunday (17%).

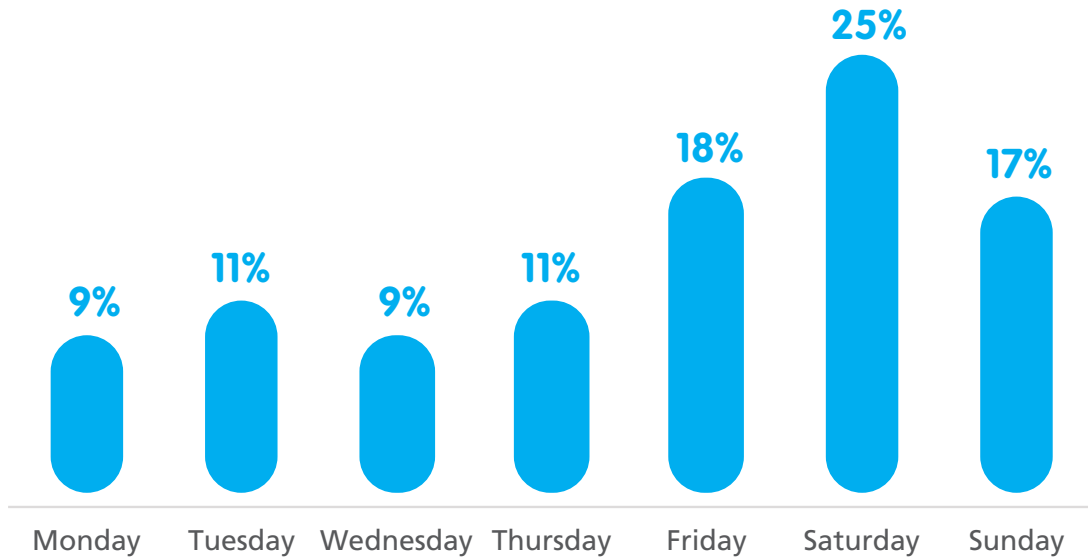


Fig 10. Drowning deaths for children aged 5 – 14 years by day of the week

### Time of day

Children aged 5- 14 years most commonly drowned in the afternoon (12.01pm – 6pm) (74%). Children aged 5 – 9 represented 49% (n=51) of afternoon fatal drowning incidents. Children aged 10 – 14 years represented 25% (n=26) of afternoon fatal drowning incidents. Male children represented 53% (n=56) of afternoon drowning incidents, and female children represented 20% (n=21) of afternoon drowning incidents.

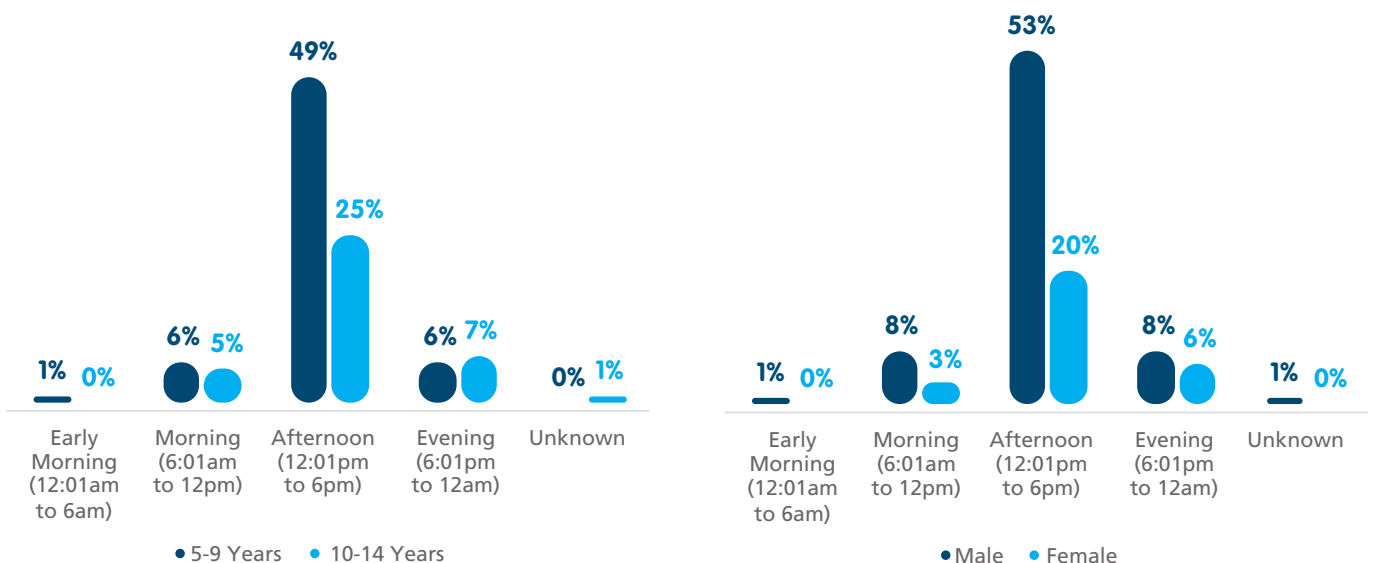


Fig 11. Drowning deaths for children aged 5 – 14 years by time of day

Fig 12. Drowning deaths for children aged 5 – 14 years by time of day and sex



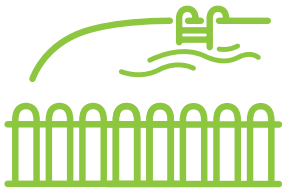




## Where and how did children drown?

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### Top three locations where children are most at risk of drowning

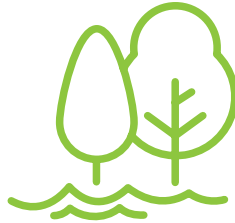


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**24%**

Swimming Pools

- > **25 children drowned in a swimming pool.**
- > 56% were aged 5 – 9
- > 44% were aged 10 – 14
- > 60% were home swimming pools/spas
- > 28% were public pools
- > 12% were communal or publicly accessible swimming pools (hotel/motel/resort pools).

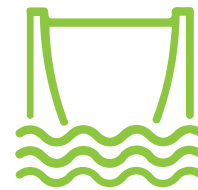


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**22%**

River/Creek

- > **23 children drowned in a river or creek.**
- > 65% were aged 5 – 9
- > 35% were aged 10 – 14
- > Although males represent the highest percentage of drowning deaths for this age group overall, both male and female children are at nearly equal risk of drowning in rivers/creeks.
- > 48% (n=11) Males
- > 52% (n=12) Females



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**20%**

Lake/Dam

- > **21 children drowned in a lake or dam.**
- > 86% were aged 5 – 9
- > 14% were aged 10 – 14
- > 14% of these drowning deaths occurred at a dam, the majority of the dams were close to the child's home.

### Location by age group

Drowning incidents for children aged 5 – 9 years were most common at Lakes/Dams (17%) followed by Rivers/Creeks (14%) and Swimming Pools (13%). Drowning incidents among children aged 10 – 14 years were most common at Swimming Pools (10%), Beaches (9%) and Rivers/Creeks (8%).

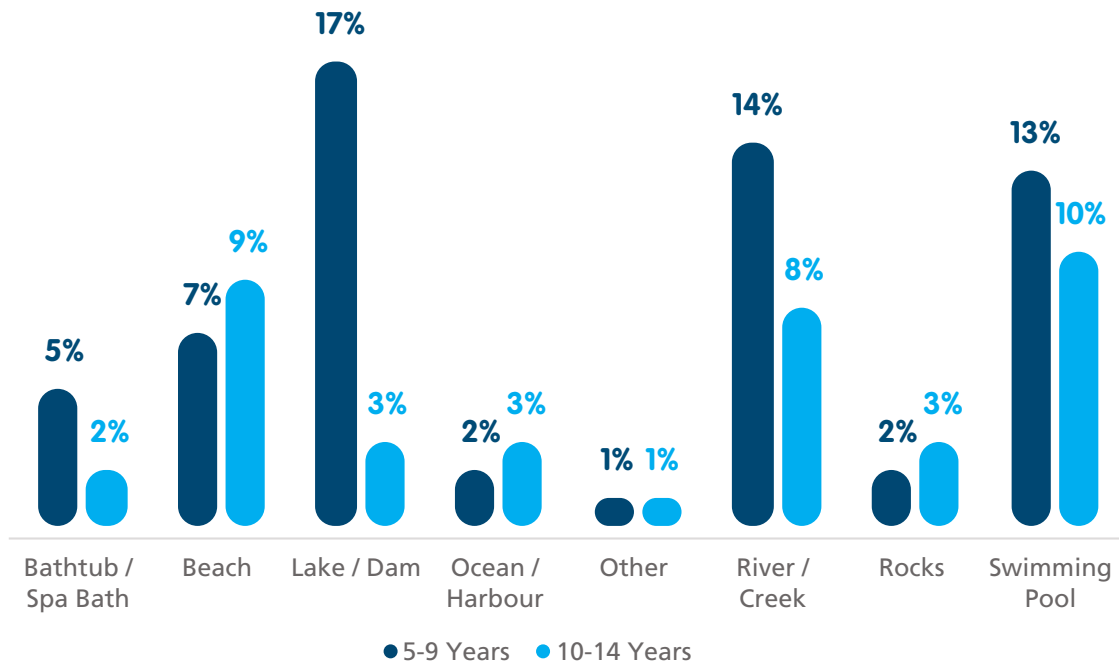


Fig 14. Drowning deaths for children aged 5 – 14 years by location and age group





### Activity by age group

Children aged 5 – 9 were most at risk of drowning when



**52%**  
Swimming & recreating



**22%**  
Fall



**9%**  
Bathing

Children aged 10 – 14 were most at risk of drowning when



**52%**  
Swimming & recreating



**16%**  
Boating & watercraft



**10%**  
Non-aquatic transport

### Activity by Gender

Female children are most at risk of drowning when



**54%**  
Swimming & recreating



**10%**  
Fall



**10%**  
Bathing



**10%**  
Non-aquatic transport

Male children are most at risk of drowning when



**53%**  
Swimming & recreating



**16%**  
Fall



**7%**  
Bathing

### Visitor status

82% of fatal drowning incidents were of children who were not visitors to the area.

Of those children who were visitors to the location where they drowned, 8% were intrastate visitors and 6% were interstate visitors. Overseas visitors made up only 3% of total drowning deaths of children aged 5-14 years.

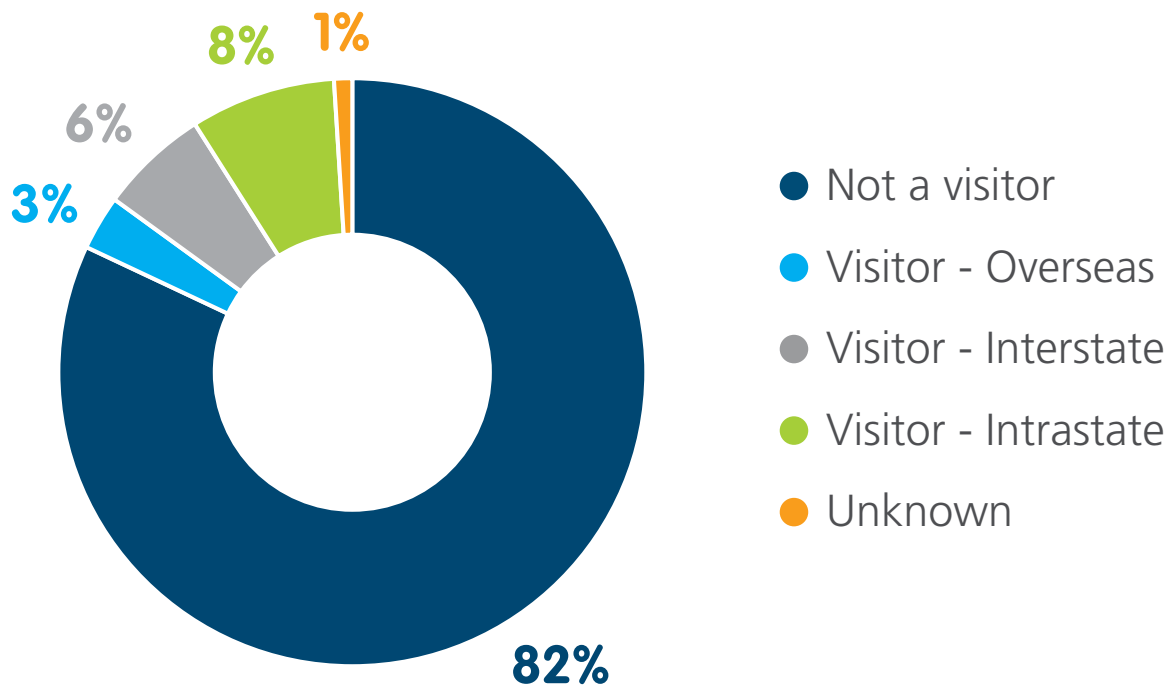


Fig 15. Drowning deaths for children aged 5 – 14 years by visitor status

### Distance of drowning location from home

Of the fatal drowning incidents where driving distance was known (n=79), children aged 5 – 14 years drowned primarily at home (27%) or within 0 – 5 kilometers from home (22%). Overall, 49% of children aged 5-14 years drowned at home or within 5km of their home.

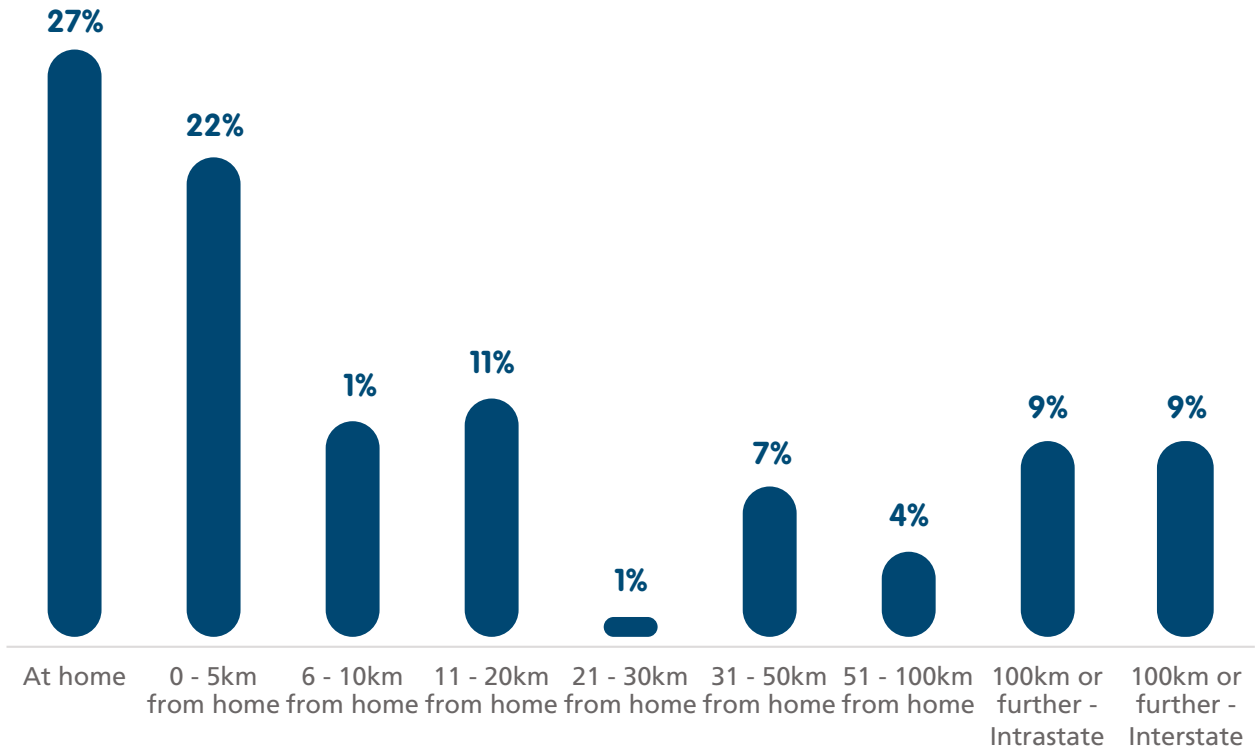


Fig 16. Drowning deaths for children aged 5 – 14 years by distance of drowning location from home

## Risk Factors

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### Swimming ability

Where swimming ability was recorded (n=40), 40% of children were known to be a poor swimmer and 35% of children were reported to be a competent swimmer.

Females across both age groups were equally described as 'poor swimmer' (17%) and 'competent swimmer' (17%). Males across both age groups were more likely to be described as a 'poor swimmer' (15%) than a 'competent swimmer' (12%).

Both males and females aged 5 – 9 years are more likely to be described as a 'non-swimmer' (12%) than males and females aged 10 – 14 (2%).

In 62% of cases (65 cases) swimming ability was unknown.

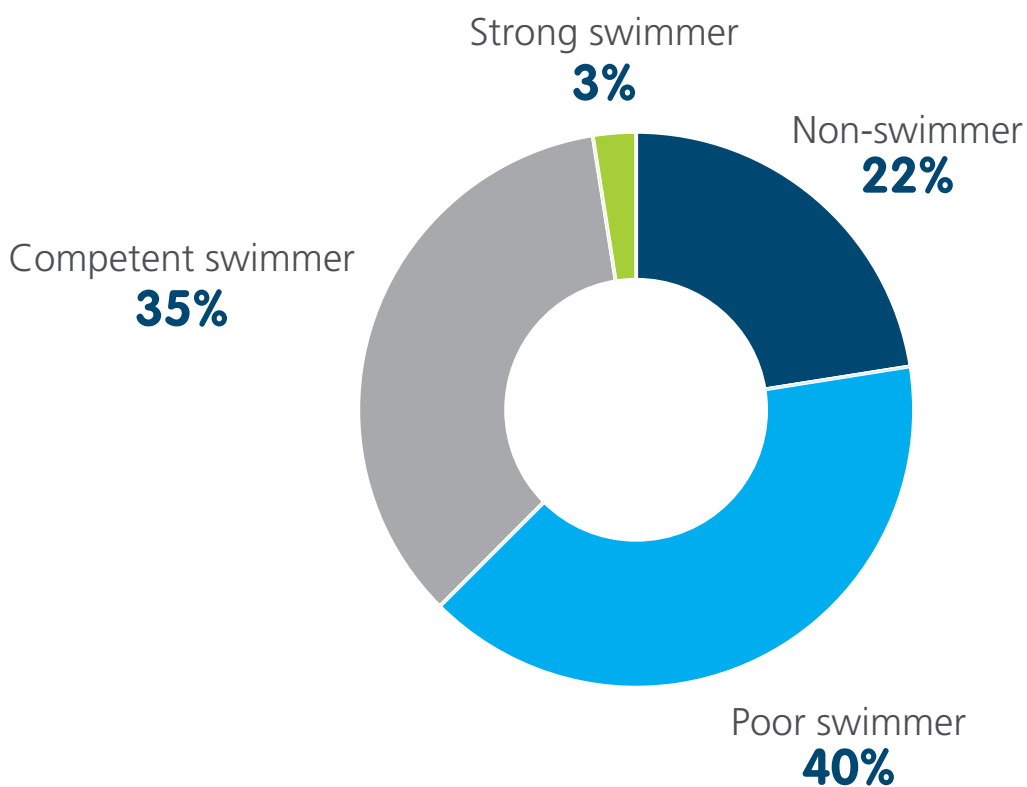


Fig 17. Drowning deaths for children aged 5 – 14 years by swimming ability

### Pre-existing medical condition

26% (n=27) of children who drowned had a pre-existing medical condition.

Children aged 5 – 9 years were more likely to have a pre-existing medical condition (67%) than children aged 10 – 14 years (33%).

The top three known medical conditions were

- Epilepsy or other seizure disorder (9%)
- Autism (6%)
- Asthma (4%).

Of these deaths:

- Ten children were known to have epilepsy or other seizure disorder.
  - 20% of all children who drowned in a swimming pool were known to have epilepsy or other seizure disorder.
- Six children were known to have Autism.
  - 83% of these children drowned in a lake or dam.

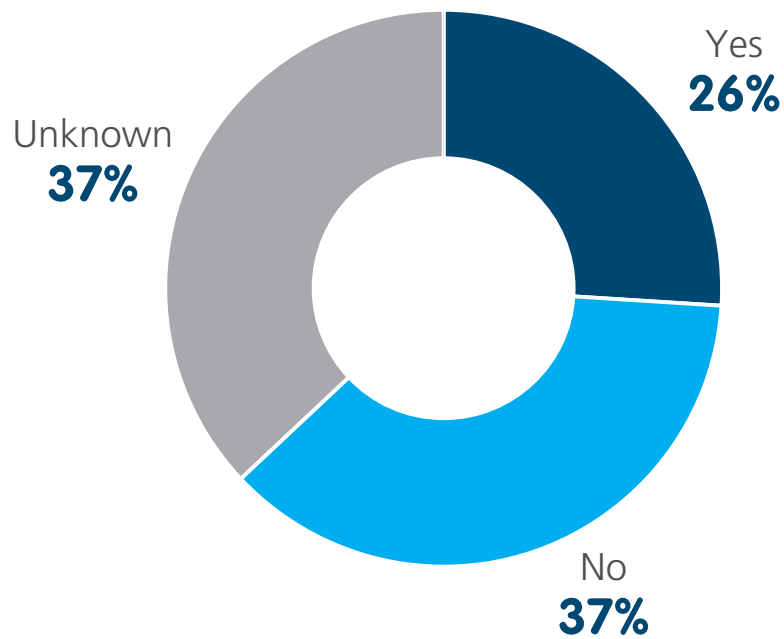


Fig 18. Drowning deaths for children aged 5 – 14 years by pre-existing medical condition

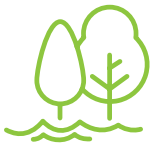


## Multiple fatality



of fatal drowning incidents were a multiple fatality incident, where a total of 45 persons drowned.

**18 of these people were children.**



**33%**  
River/Creek



**16%**  
Ocean/Harbour



**16%**  
Lake/Dam



**38%**  
Swimming & Recreating



**28%**  
Non-aquatic transport



**17%**  
Boating

## Flood and severe weather-related deaths

### Flood

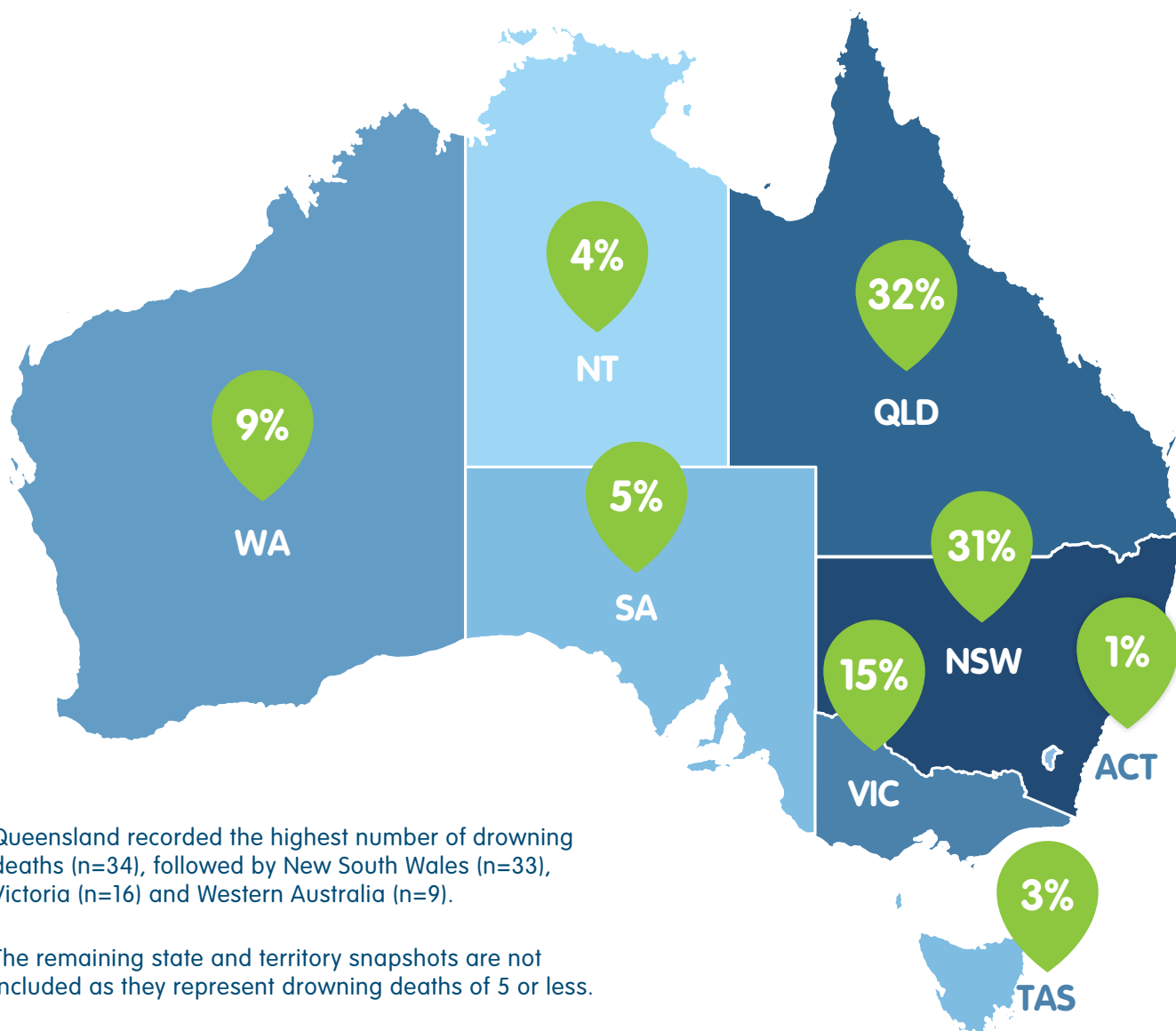
- > 7% of fatal drowning among children aged 5 – 14 years were flood-related.
- > 75% of flood-related drowning occurred at a river or creek.
- > A further 25% occurred in locations classed as 'other' (i.e. storm drains).
- > These deaths occurred in NSW, QLD and NT.
- > 38% Non-aquatic transport - driving through flood waters.
- > 37% Swimming and recreating in flood waters.
- > 25% Walking across flood waters.

### Severe weather

- > 6% were severe weather-related.
- > All of these severe weather-related drowning deaths occurred at a beach.
- > These deaths occurred in QLD, NSW and NT.
- > 71% Swept in by waves from rocks or beach
- > 29% Watercraft or boating.



## DROWNING DEATHS BY STATE



Queensland recorded the highest number of drowning deaths (n=34), followed by New South Wales (n=33), Victoria (n=16) and Western Australia (n=9).

The remaining state and territory snapshots are not included as they represent drowning deaths of 5 or less.



## Queensland

### > Total

Between 2011/12 and 2020/21, 34 children aged 5 – 14 years drowned in Queensland.

Average of three drowning deaths per year for this ten-year period.

### > Sex

71% males and 29% females drowned.

### > Age groups

5-9 years: 74%

10 – 14 years: 26%

### > Activity

The top three activities leading to drowning deaths for children aged 5 – 14 years in Queensland were: Swimming and Recreating (62%), fall (18%) and non-aquatic transport (6%).

### > Overall Location

The locations associated with the greatest drowning risk for children aged 5 – 14 years in Queensland were: Lake/Dam (32%), Swimming Pool (29%) and River/Creek (20%).

## New South Wales

### > Total

Between 2011/12 and 2020/21, 33 children aged 5 – 14 years drowned in New South Wales.

Average of three drowning deaths per year for this ten-year period.

### > Sex

79% males and 21% females drowned.

### > Age groups

5-9 years: 55%

10 – 14 years: 45%

### > Activity

The top four activities leading to drowning deaths for children aged 5- 14 years in New South Wales were: Swimming and recreating (45%) followed by boating (12%), fall (12%) and non-aquatic transport (12%).

### > Overall Location

The locations associated with the greatest drowning risk for children aged 5 – 14 years in New South Wales were Beach (21%), River/Creek (21%) and Swimming Pool (21%).



## Victoria

### > Total

Between 2011/12 and 2020/21, 16 children aged 5 – 14 years drowned in Victoria.

Average of two drowning deaths per year for this ten-year period.

### > Sex

75% males and 25% females drowned.

### > Age groups

5-9 years: 55%

10 – 14 years: 45%

### > Activity

The top four activities leading to drowning deaths in Victoria for children aged 5- 14 years were: Swimming and Recreating (44%) followed by fall (19%) and bathing (19%).

### > Overall Location

The locations associated with the greatest drowning risk for children aged 5 – 14 years in Victoria were Lake/Dam (31%), followed equally by Swimming Pool, River/Creek and Bathtub/Spa Bath (each 19%).

## Western Australia

### > Total

Between 2011/12 and 2020/21, nine children aged 5 – 14 years drowned in Western Australia.

Average of one drowning death per year for this ten-year period.

### > Sex

78% males and 22% females drowned.

### > Age groups

5-9 years: 67%

10 – 14 years: 33%

### > Activity

The top three activities leading to drowning deaths for children aged 5 – 14 years in Western Australia were: Swimming and recreating (44%), fall (22%) and followed equally by bathing, watercraft and unknown (each 11%).

### > Overall Location

The locations associated with the greatest drowning risk for children aged 5 – 14 years in Western Australia were: Swimming Pool (44%), River/Creek (33%), Beach and Lake/Dam (each 11%).







## Where and how did children drown?

This 10-year drowning analysis of children aged 5 – 14 years identified that 105 drowning deaths occurred among children aged 5 – 14 years, and has identified key risk factors, locations and activities for drowning.

### Key risk factors for drowning among children aged 5 - 14 years

#### 1. Children's growing independence and continuing need for constant adult supervision around water: Risks by age and sex

This research found that on average, 10 children aged 5 – 14 years drown every year in Australia. Children aged 5 – 9 years are at higher risk of drowning than children aged 10 – 14 years. A downward trend in drowning was occurring until the last two financial years included in this study, which may reflect the impacts of COVID-19 lockdowns on children's access to pools, swimming lessons and adult supervision.

Seventy-one per cent of the children who drowned are males. Male children are 2.5 times more likely than female children to drown. This ten-year report found that males aged 5- 9 years were 1.8 times more likely to drown than males aged 10 – 14 years. Males consistently represent the highest drowning deaths in Australia across all age groups. While drowning risk of 10 -14 year old males is comparatively low, males aged 15 – 29 years represent an average of 50 deaths per year [6].

Children aged 5 – 14 years are drowning primarily in swimming pools, closely followed by open water environments (rivers/creeks and lakes/dams), highlighting the importance of teaching primary school aged children water safety skills such as floating and sculling (as well as competitive strokes), to ensure water safety in a range of aquatic locations.

In this ten-year report, an estimated 695 children aged 5-14 years experienced a non-fatal drowning incident. Non-fatal drowning describes a drowning incident where the individual survives. It is sometimes incorrectly referred to as 'near-drowning' – this term has been replaced by the World Health Organization and should not be used. Children are at the highest risk of non-fatal drowning.

Increasing awareness of both fatal and non-fatal drowning incidents and risks can enhance adult caregivers' awareness of the need to continue constant supervision around water, regardless of a child's swimming ability or age. It is also a reminder that children's swimming ability may not translate across all aquatic environments, and children of all swimming abilities can drown without constant adult supervision.

#### Drowning risk factors for children aged 5 – 9 years

- › Increased risk of falling into water
- › Having poor swimming ability
- › Pre-existing medical conditions.

#### Drowning risk factors for children aged 10 – 14 years

- › Less constant supervision and more independence when swimming
- › Recreating in pools and open waterways
- › Pre-existing medical conditions.

### Drowning rates for children aged 5-14 years during COVID-19 lockdowns

Financial years 2019/20 and 2020/21

**6** children drowned in a swimming pool in 2019/20 and 2020/21

**67%** of children drowned in a public swimming pool

**33%** of children drowned in a private swimming pool

Drowning deaths of children aged 5 – 14 years in rivers and creeks was the highest in 2020/21, for this ten-year span (n=5).

Drowning deaths of children aged 5 – 14 years in lakes and dams had been on a decreasing trend between 2011/12 and 2018/19.

There were no drowning deaths of children in lakes or dams in 2019/20.

## 2. Medical conditions

This study found that 26% of children who drowned had a pre-existing medical condition. The top three pre-existing medical conditions were epilepsy or other seizure disorder (9%), autism (6%) and asthma (4%). The leading cause of long-term medical conditions among children aged 5 – 14 years in Australia is asthma, anxiety disorders, depressive disorders, conduct disorders and autism spectrum disorders [7].

Ten children were known to have epilepsy or other seizure disorder. Five children with epilepsy or other seizure disorder drowned in a swimming pool. People with epilepsy are known to be at an increased risk of drowning. This risk is thought to be between five and 15 times greater than those without epilepsy [8]. The home environment such as the bathroom and swimming pools are the most common places for epilepsy-related drowning [8]. Children with epilepsy can be very competent and confident swimmers, but need to take extra precautions around all bodies of water.

Six children were known to have autism. Five children diagnosed with autism drowned in a lake or dam. This research aligns with previous Royal Life Saving research which highlighted children aged 5 – 9 with autism are at significant risk of drowning, especially in lakes/dams [9]. Royal Life Saving research shows that children and adolescents with autism spectrum disorder (ASD) are three times more likely to drown than children without Autism, however with the right support and learning environment, people with ASD can learn to swim [9]. It is worth noting that, although people with ASD may have had swimming lessons, they may experience difficulties translating these skills across different environments. Constant supervision, and water safety education, including exposure to different aquatic environments, is essential in preventing drowning among people with ASD.

## 3. Over-estimation of children's swimming ability; under-estimation of risk at aquatic location

As children age, adult caregivers may unintentionally over-estimate their child's swimming abilities and need for constant supervision. A key finding of this research is the need to find an appropriate balance between the needs of primary-school aged children to explore, take risks and play around their home and in their local neighborhoods with the duty of care adults have in preventing children from accessing pools and waterways without constant adult supervision is a key finding of this research.

A survey by Royal Life Saving found that Australian parents believed their child's swimming skills had decreased during the COVID-19 pandemic due to missed swimming lessons [10]. This research also demonstrated that parents of younger children were more likely to enrol their children in swimming lessons than parents of older children [10], however with all children missing out on swimming lessons during COVID-19 swimming pool closures, there is a need for children of all ages to re-enrol in swimming lessons.

## 4. Rapid changes in weather and/or aquatic conditions

Severe weather is an emerging issue for drowning among this age group. Seven per cent of these fatal drowning incidents were flood-related, with 75% of these drowning incidents occurring at a river/creek. Six per cent of these deaths were severe weather related and occurred at a beach. The Australian Water Safety Strategy 2030 identified that 2019 was Australia's warmest year on record, with further increases in intense heavy rainfall throughout Australia predicted to lead to a higher number of floods as well as more frequent storms and large waves in coastal regions [6]. Flood safety messaging urges individuals to never drive through floodwaters and children or adults should never swim in flooded waters. Children need to be prevented from playing in or near flood waters, especially storm water drains. Royal Life Saving is working to integrate water safety and drowning prevention strategies into flood awareness and disaster resilience programs in collaboration with key agencies.





## RECOMMENDATIONS

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### Research

- › Prioritise data collection of children's actual swimming ability and adult's perceptions of their child's swimming ability.
  - Adult supervision behaviour is linked with adult perception of their child's swimming ability. Further understanding of adult's perceptions of their child's swimming ability is needed to enhance existing supervision messaging.
- › Explore ways that adult caregivers engage in supervision around water for female versus male children. A broader understanding of caregiver supervision beliefs and behaviours can support targeted advocacy, education and practice opportunities.

### Policy

- › Land management professionals will need to prepare water safety plans for their waterways in anticipation of increasing severe weather and flooding events. Restricting access to storm drains and restricting visitation to swimming areas downstream of dams and large water catchment systems before, during and after severe weather events is recommended.
  - A Local Water Safety Plan outlines existing and future community-based actions tailored to the local community contexts and emphasises the role of multi-sectoral collaboration and the capabilities and needs of varying stakeholders.
- › Integrate drowning prevention with epilepsy, autism and asthma policies and plans
  - Partner, and align messaging, with epilepsy, autism and asthma support sectors.

### Education & Advocacy

- › Increase adult caregivers' awareness of the need to continue constant supervision around water, regardless of a child's swimming ability or age.
- › Promote the importance of continuing to enrol older children (10 – 14 years) in swimming lessons, alongside the message to enrol younger children (5 – 9 years) in learn-to-swim programs.
- › Encourage swim schools to align their swim lesson curriculum to the National Benchmarks for Swimming and Water Safety, to ensure children are learning survival strokes and other water safety skills, along with competitive swimming strokes.

## Conclusion

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Our previous report on child drowning between 2002/03 and 2010/11 [1] identified children aged 5 – 9 years were more at risk of drowning than children aged 10 – 14 years. This study covering the most recent ten-year period (2011/12 to 2020/21) reported continuing trends across age group, sex and season. Children aged 5 – 9 years continue to be more likely to drown than children aged 10 – 14 years. Male children were also the most at risk of drowning. Summer was the season when the most drowning incidents occurred.

Children aged 5 – 14 years continue to be most at risk of drowning at swimming pool, river/creek and lake/dam locations. Adult caregivers of children at various stages of development may be aware of water safety practices around swimming pools but may not be aware of the water safety risks at open waterways, or vice versa.

Consistent with all other drowning statistics, male children aged 5 – 14 years were overrepresented in the drowning data. This sets up a tragic trend as male children age; males aged 15 – 29 years represent an average of 50 deaths per year [6].

These findings highlight the need to continue raising awareness of the risks for children aged 5 – 14 years and drowning prevention strategies at swimming pools, rivers/creeks and lakes/dams. These findings are also a reminder of the importance of child supervision beyond the first four years; children aged 5 – 14 continue to require constant adult supervision around water.



## Methods

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Data in the Royal Life Saving National Fatal Drowning Database has been collated from the National Coronial Information System (NCIS), State and Territory coronial offices and year-round media monitoring. Information contained within the NCIS is made available by the Victorian Department of Justice and Community Safety. Drowning deaths as a result of suicide or homicide, deaths from natural causes, shark and crocodile attacks, or hypothermia have been excluded from this report. All information presented in this report relates to drowning deaths or deaths where drowning was a contributory cause of death. Figures may change depending on ongoing coronial investigations and findings. This report contains information correct as of 30 January 2022. As of this date, 79% of cases were closed (i.e. no longer under coronial investigation).

Data for socio-economic status was determined using the socio-economic index for advantage and disadvantage (SEIFA) for child's usual place of residence.

Drowning rates per 100,000 population are calculated using population data from the Australian Bureau of Statistics (ABS) publication 'Australian Demographic Statistics' (Cat 3101.0). Percentages and averages are presented as whole numbers and have been rounded up or down accordingly.

Severe weather is defined as any incident mentioning severe weather, hazardous surf, rough seas, or large swells.

### Non-fatal drowning

In the absence of up-to-date data on non-fatal drowning, non-fatal drowning incidents for this report were estimated using the observed ratios of fatal to non-fatal incidents for each age group between 2002/03 and 2014/15. The applicable average ratio of fatal to non-fatal incidents over that period was then used to project the likely number of non-fatal incidents based on the number of fatal incidents for that age group.

### Aboriginal and Torres Strait Islander Population data

Data for Aboriginal and Torres Strait Islander children per 100,000 population was sourced from the Australian Bureau of Statistics (ABS) data download: Estimated resident Aboriginal and Torres Strait Islander and non-Indigenous population, states and territories - 30 June 2016. The authors acknowledge that there are limitations in using population projections.

### Categorisations

'Non-aquatic transport' relates to drowning deaths involving a means of transport that is not primarily designed or intended for aquatic use such as cars, motorbikes, bicycles and aeroplanes among others.

Means of transport primarily used for aquatic purposes are categorised under 'boating' (water-based wind or motor-powered vessels, boats, ships and personal watercraft, such as boats, jet skis, sail boats and yachts). 'Watercraft' refer to water-based non-powered recreational equipment such as those that are rowed or paddled (e.g., rowboats, surfboats, kayaks, canoes, boogie boards).

Within this report, 'swimming pool' includes home swimming pools, public swimming pools, hotel and motel pools, and portable swimming pools among others.

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