

# Non-Fatal Drowning in Australia

---

Part 1: Non-fatal drowning  
trends over time



**ROYAL LIFE SAVING**  
AUSTRALIA

Research Partner



Supported by



**Australian Government**

**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.

© 2021 Royal Life Saving Society – Australia This publication is copyright. Except as expressly provided in the Copyright Act 1968 and the Copyright Amendment Act 2006, no part of this publication may be reproduced, stored in any retrieval system or transmitted by any means (including electronic, mechanical, microcopying, photocopying, recording or otherwise) without prior permission from Royal Life Saving Society – Australia.

**For enquiries concerning reproduction, contact RLSSA on:**

Phone **02 8217 3111**

Email **info@rlssa.org.au**

Every attempt has been made to trace and acknowledge copyright, but in some cases this may not have been possible. Royal Life Saving apologises for any accidental infringements and would welcome any information to redress the situation.

The drowning prevention research of the Royal Life Saving Society – Australia is proudly supported by the Australian Government.

**> Suggested citation**

Mahony, A, Pidgeon, S (2021) Non-Fatal Drowning in Australia. Part 1: Non-fatal drowning trends over time. Royal Life Saving Society – Australia: Sydney.

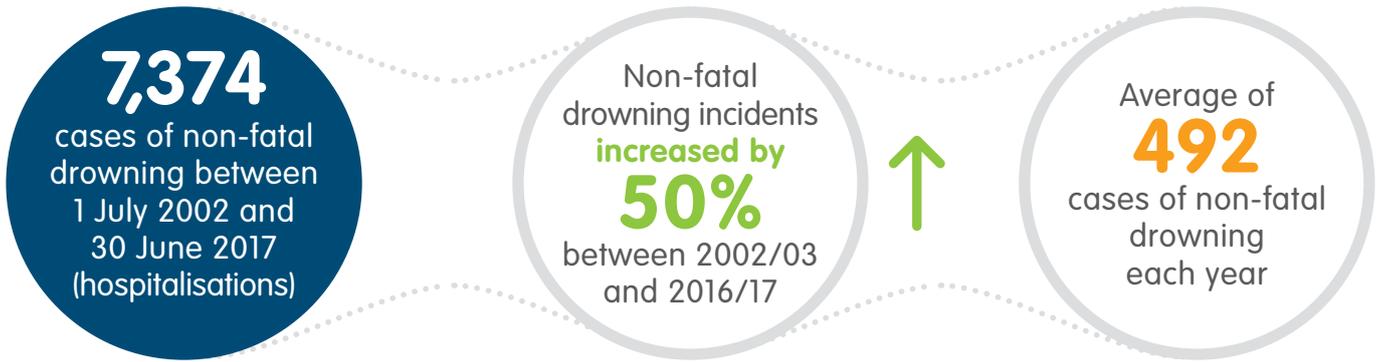
The authors would like to acknowledge Dr Amy Peden for data acquisition.

**> OUR VISION**

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

royallifesaving.com.au

# NON-FATAL DROWNING IN AUSTRALIA



## Sex



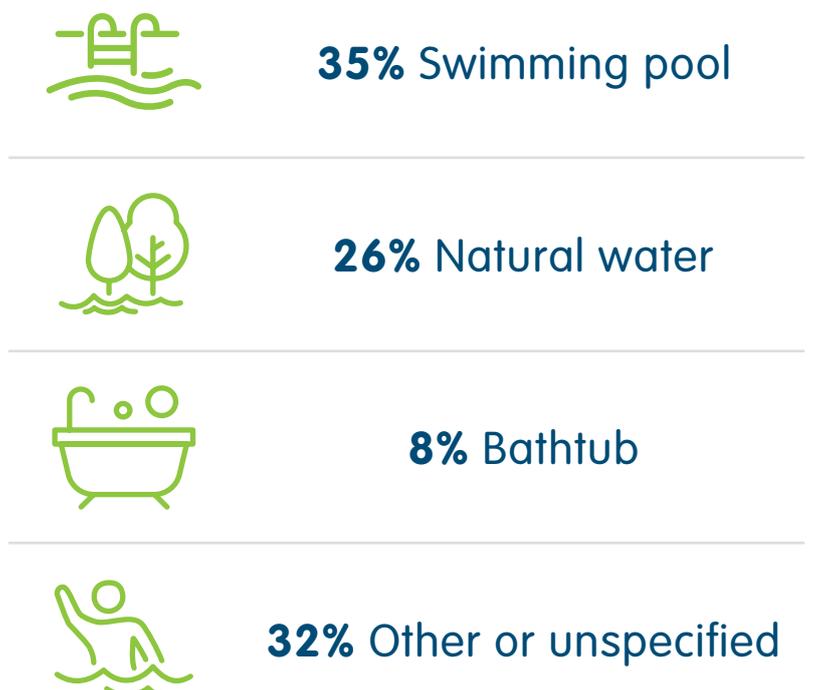
## Remoteness classification



## Age



## Locations



## BACKGROUND

---

Fatal drowning has long been the focus of the drowning prevention community. In Australia, Royal Life Saving Society – Australia (RLSSA) and Surf Life Saving Australia (SLSA) collect, analyse and report on unintentional fatal drowning, including historical trends and factors such as age, sex, location, remoteness classification and activity. However, many more non-fatal drowning incidents occur each year.

The updated definition of drowning incorporates three possible outcomes: death, morbidity and no morbidity, signifying the continuum of possible consequences following a drowning incident (1). It should be noted that 'non-fatal drowning' is the correct terminology and phrases such as 'near-drowning' are inappropriate for use.

The Australian Water Safety Strategy (AWSS) 2030 encourages a continued focus on the full burden of drowning, with research and policy activities designed to further our understanding of non-fatal drowning and its impacts (2).

Previous research investigated hospitalisations in Australia, reporting 6,158 cases of non-fatal drowning over a 13-year period (3). Over the course of the study, non-fatal incidents increased by 42% (3). In Australia, for every one fatal drowning, a further three people are admitted to hospital following a non-fatal incident (3). Among children aged 0-4 years, this ratio increases to eight non-fatal incidents (3).

Building on this previous study, additional data has been obtained to continue monitoring non-fatal drowning over time. This study examines hospitalisations in Australia over a 15-year period, revealing trends in sex, age, location, remoteness classification and activity.



## METHODS

---

### Non-fatal drowning data

The non-fatal drowning data used in this report were made available by the Australian Institute of Health and Welfare (AIHW). The authors are responsible for the use made of the data in this report.

Non-fatal drowning incidents that occurred in Australia between 1 July 2002 and 30 June 2017 were collated using hospitalisation data. Hospital separations (a process by which an episode of care for an admitted patient ceases, for example, due to their discharge from hospital or their transfer to another facility) were used to calculate the number of hospitalisations related to a non-fatal drowning event.

Data were obtained from the Australian Institute of Health and Welfare's (AIHW) National Hospital Morbidity Database (NHMD). Hospital separations where the principal diagnosis was any code in ICD-10-AM Chapter XIX Injury, poisoning and certain other consequences of external causes (S00-T98) and the first reported external cause of morbidity was Accidental Drowning and Submersion (W65-W74) were included. For further information on these classifications, see below.

### Accidental drowning and submersion includes the following subdivisions:

- › Drowning and submersion while in bathtub (W65)
- › Drowning and submersion following fall into bathtub (W66)
- › Drowning and submersion while in swimming pool (W67)
- › Drowning and submersion following fall into swimming pool (W68)
- › Drowning and submersion while in natural water (W69)
- › Drowning and submersion following fall into natural water (W70)
- › Other specified drowning and submersion (W73)
- › Unspecified drowning and submersion (W74)

### These subdivisions were then combined in the following way for the resulting analysis:

- › W65 and W66 – Bathtub
- › W67 and W68 – Swimming Pool
- › W69 and W70 – Natural Water
- › W73 and W74 – Other or Unspecified location

Data were provided in aggregate format by the AIHW, whereby individual drowning events could not be distinguished. As such, no identifying data or case histories were available.

Hospitalisations related to a drowning incident were excluded for one of two reasons. Firstly, if the patient died in hospital, and secondly, if the patient was transferred from another acute care facility. The mode of separation field was used to exclude patients who died in hospital.

This was done to avoid an overlap between fatal and non-fatal drowning cases. The mode of admission field was used to exclude patients who were transferred from another acute care hospital. This was done to avoid double counting drowning cases where the patient was admitted to one hospital but then transferred to another facility, within the same episode of care.

# RESULTS

## Overall

### Non-fatal

Between 1 July 2002 and 30 June 2017, there were 7,374 cases of non-fatal drowning in Australia (hospitalisations). This is an average of 492 non-fatal incidents each year. Since the beginning of the study, non-fatal incidents have increased by 50%. The crude non-fatal drowning rate reached a high of 2.63/100,000 in 2015/16 (Figure 1).

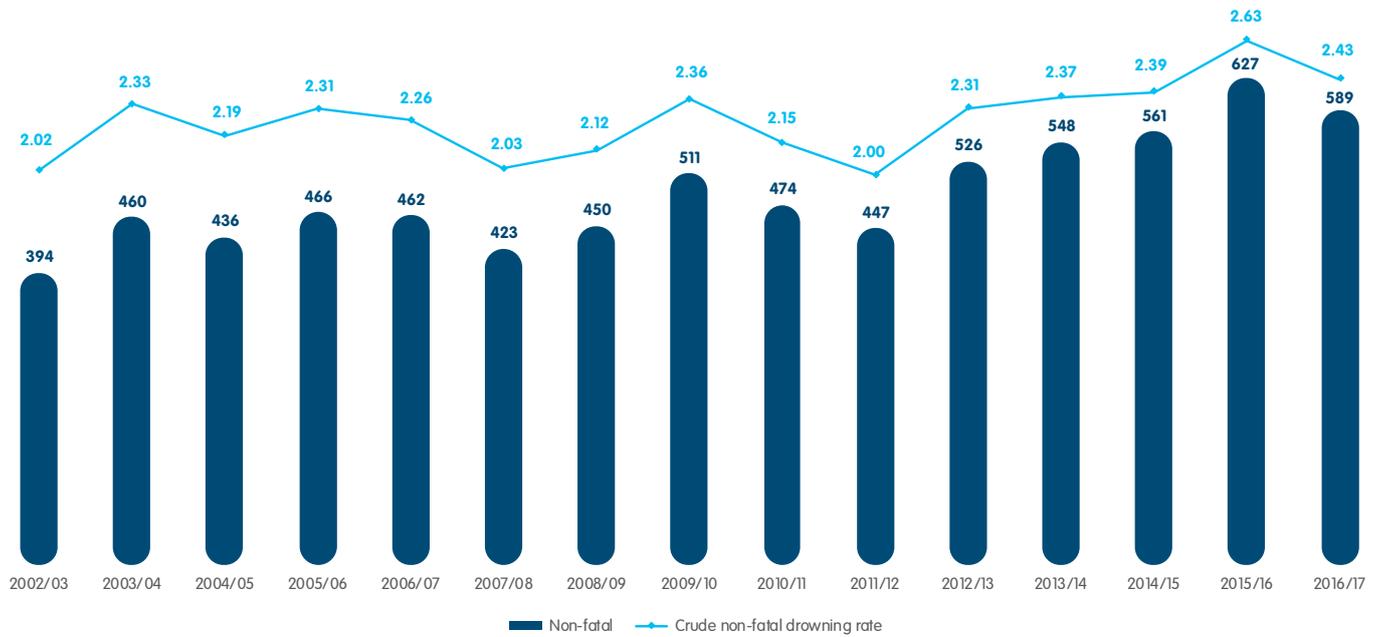


Figure 1: Non-fatal drowning by year with crude drowning rate, 2002/03 to 2016/17, n=7,374

### Sex

Across the 15 years of the study, males accounted for 66% of all non-fatal drowning cases, with females accounting for 34% (Figure 2).

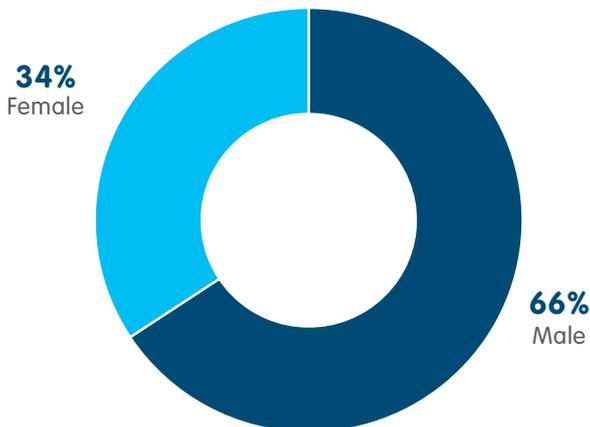


Figure 2: Non-fatal drowning by sex, 2002/03 to 2016/17

### Age

Children aged 0-14 years accounted for more than half of all non-fatal drowning incidents (54%). Adults aged 55 years and over accounted for the smallest proportion of incidents (11%) (Figure 3).

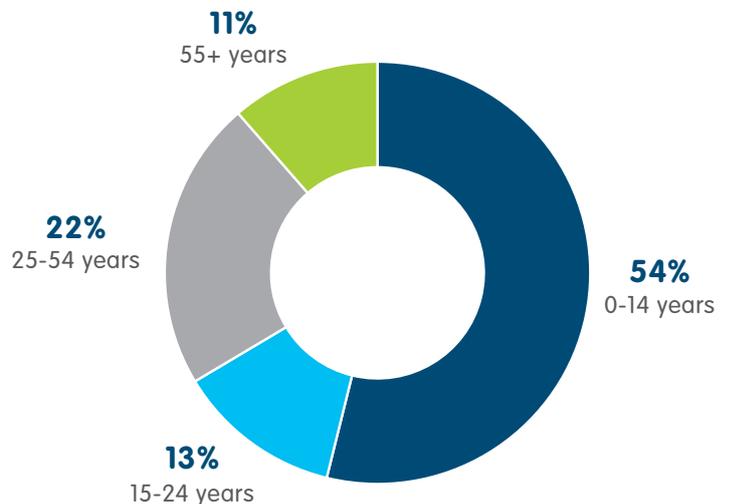


Figure 3: Non-fatal drowning by age, 2002/03 to 2016/17

## Location

Swimming pools were the leading location for non-fatal drowning (35%), followed by natural water (26%). The location of non-fatal drowning was classified as 'other or unspecified' in 32% of cases (Figure 4).

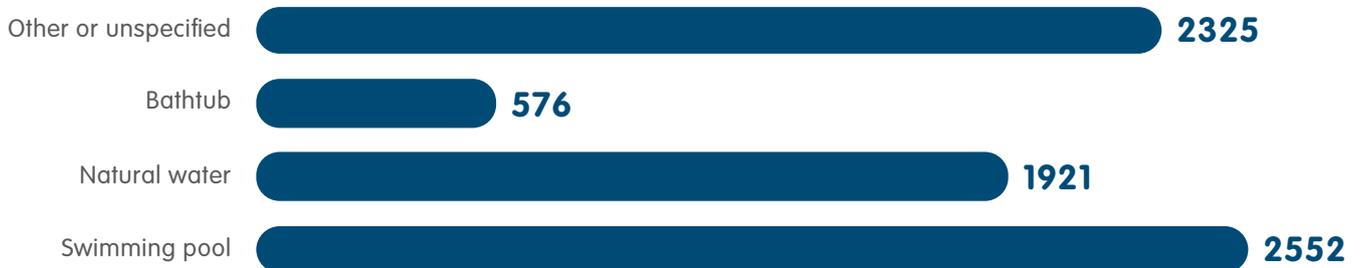


Figure 4: Non-fatal drowning by location, 2002/03 to 2016/17, n=7,374

## Remoteness

Almost two thirds of non-fatal drowning incidents occurred in major cities (65%). Information on remoteness was not available in 5% of cases (Figure 5).



Figure 5: Non-fatal drowning by remoteness classification, 2002/03 to 2016/17, n=6,978

## Activity

More than a third of non-fatal drowning incidents occurred while 'engaged in sports' (36%), with a further 12% occurring while 'engaged in leisure'. Activity prior to non-fatal drowning was classified as 'unspecified' in 34% of cases (Figure 6).

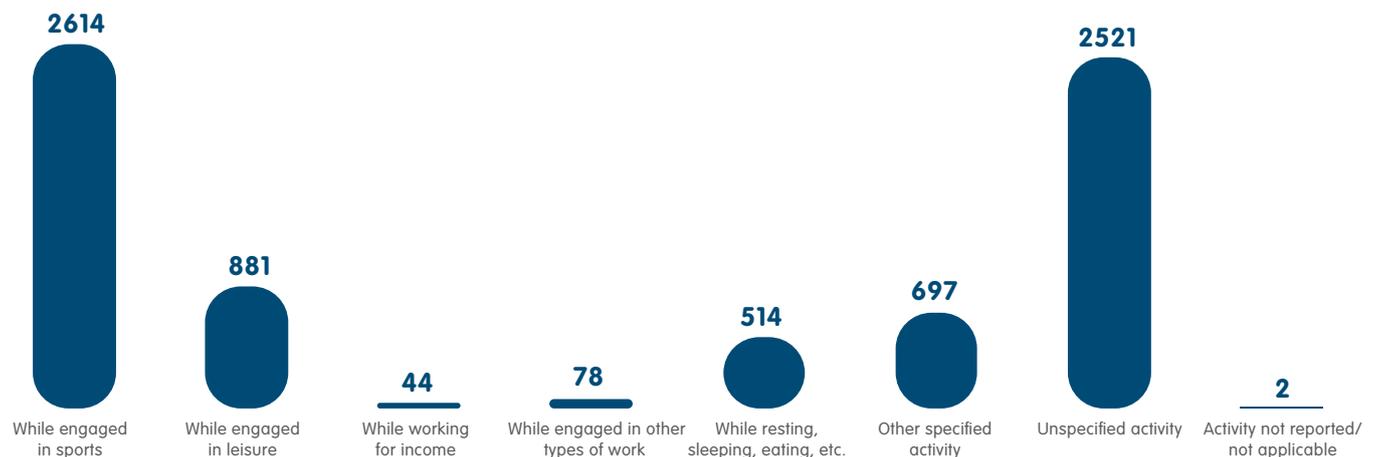


Figure 6: Non-fatal drowning by activity, 2002/03 to 2016/17, n=7,351

## REPORT HIGHLIGHTS

---

- The incidence of non-fatal drowning is rising, with hospitalisations increasing by 50% between 2002/03 and 2016/17.
  - By comparison, fatal drowning has decreased over this time (4). It is important that all drowning prevention campaigns include information on non-fatal drowning and promote the importance of cardiopulmonary resuscitation (CPR) and lifesaving skills.
- Males account for approximately two thirds of all non-fatal drowning cases. Although overrepresented, this is less than the 80% of fatal drowning which occurs among males (4).
  - This indicates that the outcome of a drowning incident is more likely to be fatal among males than females. The reasons for this are unclear but could be related to situational risk, such as swimming or recreating alone.
- Children are disproportionately affected by non-fatal drowning, with 0–14-year-olds accounting for more than half of all non-fatal drowning incidents.
  - Drowning prevention campaigns should include information about non-fatal drowning to raise awareness of the heightened risk in this demographic. It is important that parents and carers know how to prevent child drowning, fatal and non-fatal.

## NEXT STEPS

---

### **Based on the findings of this report, the following next steps are recommended:**

- Continue to highlight the full burden of drowning in public settings to raise awareness of those who survive a drowning incident
  - Expand drowning prevention messaging to incorporate non-fatal drowning, with a focus on child drowning prevention campaigns
  - Educate practitioners, policymakers and the media on correct terminology and reporting practices
  - Ensure reports on drowning include non-fatal drowning statistics alongside deaths and other water-related injuries
- Maintain collection and analysis of hospitalisation data to allow ongoing monitoring of trends and the identification of emerging issues of concern
- Strengthen non-fatal drowning data collection, including the investigation of additional data sources to broaden data coverage and improve accuracy
- Investigate long-term health, social and economic outcomes of non-fatal drowning, including impacts on families, communities and emergency responders

## > References

1. van Beeck EF, Branche CM, Szpilman D, Modell JH, Bierens JJLM. A new definition of drowning: towards documentation and prevention of a global public health problem. *Bulletin of the World Health Organization*. 2005;83(11):853-6.
2. Australian Water Safety Council. *Australian Water Safety Strategy 2030*. Sydney: Australian Water Safety Council; 2021.
3. Mahony A, Barnsley P, Peden A, Scarr J. *A thirteen year national study of non-fatal drowning in Australia: Data challenges, hidden impacts and social costs*. Sydney: Royal Life Saving Society - Australia; 2017.
4. Royal Life Saving Society - Australia. *Royal Life Saving National Drowning Report 2020*. Sydney: Royal Life Saving Society - Australia; 2020.



**ROYAL LIFE SAVING**  
AUSTRALIA

---

#### FOR MORE INFORMATION

Call **02 8217 3111**

Email **info@rlssa.org.au**

---

#### CONNECT WITH US



[facebook.com/RoyalLifeSaving](https://www.facebook.com/RoyalLifeSaving)



[twitter.com/royallifesaving](https://twitter.com/royallifesaving)



[youtube.com/RoyalLifeSavingAust](https://www.youtube.com/RoyalLifeSavingAust)



[royallifesaving.com.au](https://royallifesaving.com.au)