

10 YEAR ANALYSIS OF DROWNING IN PEOPLE BORN OVERSEAS

Western Australia
2005-06 to 2014-15



ROYAL LIFE SAVING
WESTERN AUSTRALIA



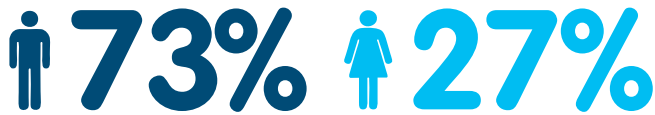
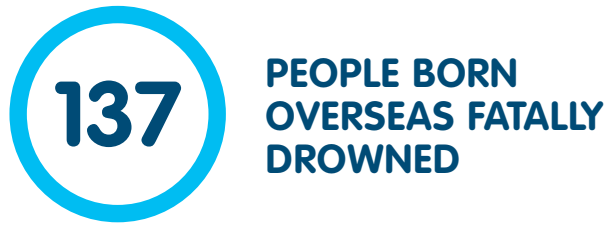
Partner:



Government of Western Australia
Department of Health



DROWNING IN PEOPLE BORN OVERSEAS – AN OVERVIEW



TOP 3 COUNTRY OF BIRTH

- 01** UNITED KINGDOM
- 02** NEW ZEALAND
- 03** KOREA

TOP 3 AGE GROUPS (RATE)

- 01** 0-4 YEARS (3.55)
- 02** 65+ YEARS (2.60)
- 03** 25-64 YEARS (1.65)

TIME IN COUNTRY

- 43%** RESIDENT 10+ YEARS
- 19%** OVERSEAS TOURIST
- 15%** NEW ARRIVAL

TOP 3 REGIONS

- 01** MIDWEST
- 02** GREAT SOUTHERN
- 03** SOUTH WEST

TOP 3 ACTIVITIES

- 27%** SWIMMING
- 14%** DIVING
- 13%** ROCK FISHING

TOP 3 FACTORS

- 43%** MEDICAL CONDITION
- 40%** POOR SWIMMING ABILITY
- 23%** ALCOHOL

BACKGROUND

Australia is a culturally diverse nation with more than one quarter (26%) of Australians born overseas, 49% of people having at least one parent born overseas and one in five (18%) speaking a language other than English at home.¹

Western Australia is a state of migrants and is home to people from more than 190 countries, speaking approximately 270 languages and dialects.¹ Overall, almost one third (31%) of West Australians are born overseas and more than half (52%) had at least one parent born overseas making it one of the nation's most diverse states and/or territories.¹

Tourism plays an important role in creating a diverse population and provides significant contribution to local economies. Western Australia has a strong reputation as a desirable holiday destination with an estimated 954,000 international visitors each year, which is expected to continue to increase in future years.^{2,3} People travel for a range of reasons, with the most common being for recreation, leisure and holidays, visiting friends and/or family members and for business.^{2,4}

Drowning and injury amongst people born overseas

While migration offers a range of increased opportunities for economic growth, social and cultural innovation, having such a culturally and linguistically diverse population presents a number of unique challenges⁵ including an increased risk of aquatic injury and drowning. Data from the United States, Canada, New Zealand and the Netherlands suggests that migrants, and in particular new arrivals have higher drowning rates in comparison to the nation's general population.^{5,6} As the number of new arrivals into Australia continues to increase, so will the drowning risk of these individuals.⁷

In addition, injury has been found to be one of the main causes of death while travelling abroad accounting for approximately 18% of Australian short-term (less than one year) traveller deaths.⁸ Previous research reported that between 2001 and 2003, drowning/submersion accounted for 5% of all deaths to overseas visitors to Australia⁸ and 4.3% of all drowning deaths in Australia between 2002 and 2012 involved international tourists.³

There is limited data available regarding the actual incidence of injury fatalities, however some studies have reported greater rates of fatal injury amongst tourists than non-tourists.⁹ Similarly, few studies have looked at non-fatal travel injuries, however some have found that tourists were likely to experience more severe injuries than non-tourists.⁹ Research shows that the most common fatal injuries involving overseas tourists/visitors are motor vehicle accidents followed by drowning.⁹⁻¹²

The Australian Water Safety Strategy 2016-2020 identifies reducing drowning in high-risk populations including those from culturally and linguistically diverse backgrounds as a priority area for action.¹³ The Strategy also identifies research that continues to strengthen knowledge and improving access to quality data to enhance understanding of risk factors for drowning amongst high-risk populations as drowning prevention pillars that play a key role in achieving the goals of the Strategy.¹³

Water safety knowledge and skills of migrant populations

While there is limited research regarding the water safety knowledge and skills amongst migrant populations, there is some evidence that culturally diverse and migrant communities have lower rates of participation in swimming and water safety programs and overall swimming ability.¹⁴⁻¹⁸

A study in Victoria found that only 23% of people from culturally and linguistically diverse communities had attended formal swimming lessons compared to 71% of the general community. In addition, 31% said that they could not swim compared to 5% of the general community.¹⁸ Similarly, research conducted in the United States found that Vietnamese-American parents reported being poor or non-swimmers¹⁴

A number of barriers to participation in swimming and water safety programs amongst migrant communities have been identified for both participants and providers. For some communities, traditional methods of delivering swimming and water safety programs are not effective and aren't appropriate due to a number of cultural values, religious beliefs and family commitments.^{5,6} Lack of parental swimming ability impacting on children's exposure to and participation in programs⁶ and costs associated with participation¹⁴ have also identified as possible barriers. Research also suggests that lack of suitably qualified staff and facilities' lack of knowledge on how to engage with migrant communities and identify and manage cultural barriers effectively are barriers to participation.⁷

Likewise, there is some evidence that suggests that people from culturally diverse backgrounds are unaware of drowning risks, don't think about water safety as a priority and lack familiarity and experience with swimming and water activities which contributes to their increased risk of drowning.¹⁴⁻¹⁸

Tourists

With the number of people visiting Western Australia from overseas continuing to grow each year, minimising drowning deaths and other injuries among international travellers and students is an integral part of maintaining Australia's reputation as a safe destination as well as reducing the annual drowning toll.³

Previous research has identified a number of factors that contribute to increased risk of drowning and other injury. It is widely accepted that tourists have a relaxed attitude when it comes to safety while in holidays. Often, they are prepared to accept risk, more likely to participate in risky behaviours such as increased use of alcohol and unlikely to associate the activities they are participating in to be potentially harmful.^{4,19-21}

While there is likely increased exposure to risk amongst tourists through increased participation in a range of aquatic-related leisure activities,⁹ research has highlighted participating in unfamiliar aquatic activities at unfamiliar locations⁹⁻¹² and poorly maintained equipment⁹ as contributors to drowning.

Research suggests that strategies such as increasing the availability of information to tourists pre-travel on injury and drowning risks^{9,12,19} to enable them to better prepare themselves and their families for safe travel and encouraging them to develop skills to ensure their own safety such as swimming skills^{4,19} may reduce the risks around water.



RESULTS

Overall, 21.4% (n=411) of people involved in a drowning incident (fatal and non-fatal) in WA between 1 July 2005 and 30 June 2015 were born overseas.

Of these, one third (n=137, 33.3%) were fatal, 191 (46.5%) people were admitted to hospital and 83 (20.2%) people presented at an emergency department in the Perth metropolitan area following a non-fatal drowning incident (Figure 1). The 10-year average crude drowning rate was 1.54 incidents per 100,000. During the study period, there was a 21.5% increase in the average number of drowning incidents, while the average proportion of drowning deaths recorded involving a person born overseas remained similar from 2005/06 to 2014/15 (21.0% vs. 21.6%).

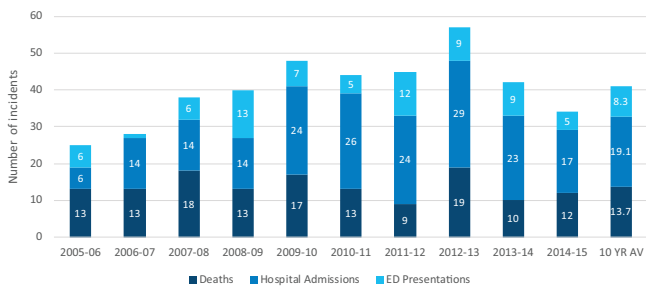


Figure 1: Total drowning burden - people born overseas in WA, 2005-06 to 2014-15

FATAL DROWNING

Overall, 39.8% of drowning deaths (n=137) recorded in WA between 1 July 2005 and 30 June 2015 involved a person born overseas, the highest proportion of any Australian State or Territory during this time (Figure 2). The crude fatal drowning rate over the 10-year period was 0.52 per 100,000 (people born overseas and international tourists).

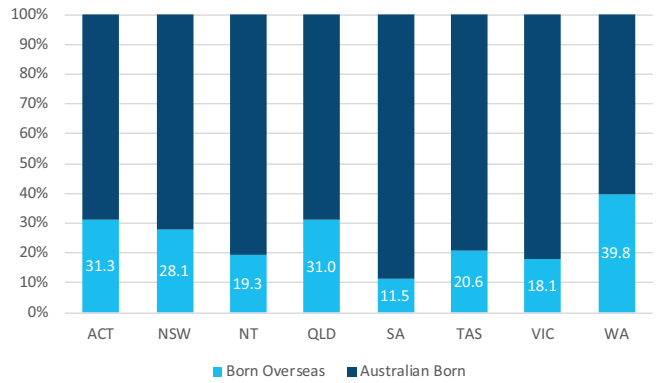


Figure 2: Proportion of fatal drowning by state/territory – people born overseas, 2005-06 to 2014-15

Nationally, WA recorded the third highest number (n=137) and rate (0.52/100,000) of fatal drowning incidents involving people born overseas behind New South Wales and Queensland (Figure 3).

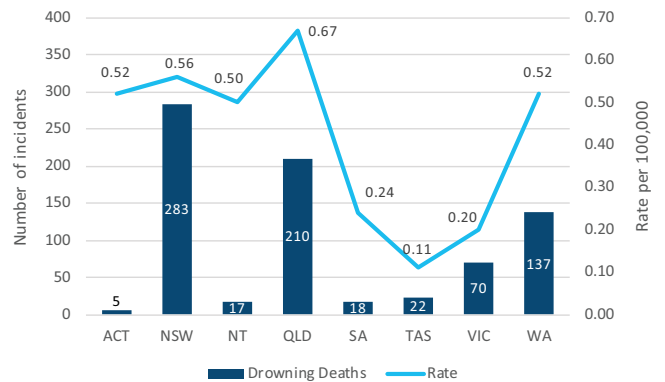


Figure 3: Fatal drowning by state/territory – people born overseas, 2005-06 to 2014-15

During the 10-year period in WA, there was a 14.9% decrease in the number of fatal drowning incidents and a 3.3% decrease in the proportion involving people born overseas (41.8% vs. 38.5%). (Figure 4).

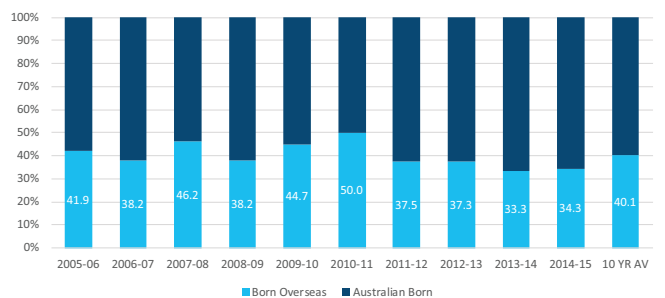


Figure 4: Fatal drowning by year and country of birth (born overseas and Australian born), 2005-06 to 2014-15

NON-FATAL DROWNING

There were 274 non-fatal drowning incidents recorded in WA between 1 July 2005 and 30 June 2015 involving a person born overseas, representing 17.3% of the total incidents recorded during this time. The crude non-fatal drowning rate over the 10-year period was 1.03 per 100,000 (people born overseas and international tourists).

During the study period there were 191 people born overseas admitted to hospital following a non-fatal drowning incident, at an average rate of 0.71 admissions per 100,000. This represented 20.3% of the total number of hospital admissions recorded during this time (Figure 5). Over the 10-year period, there was a 65.3% increase in the number of hospital admissions amongst people born overseas with the average annual increase 1.7 times that of those born in Australia (5.7% compared to 3.4%).

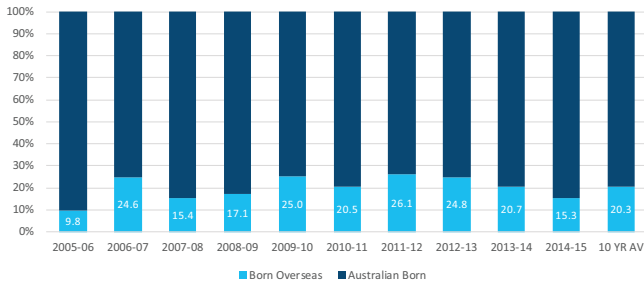


Figure 5: Hospital admissions by year and country of birth (born overseas and Australian born), 2005-06 to 2014-15

The average length of hospital stays for people born overseas ranged from 1.00 to 6.59 days and increased with age. Compared with those born in Australia, length of hospital stay was shorter for people born overseas, except for those over 65+ years where length of stay was almost twice that recorded amongst those born in Australia (Figure 6).

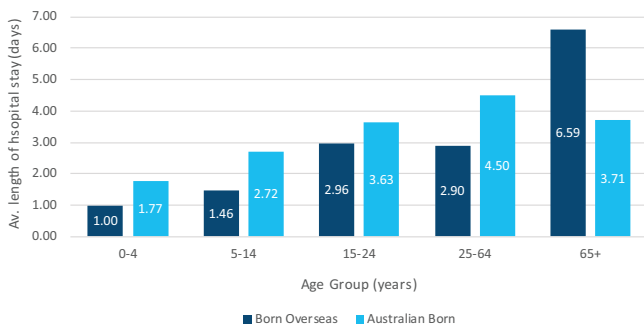


Figure 6: Length of hospital stay by age and country of birth (born overseas and Australian born), 2005-06 to 2014-15

Overall, 8.83% (n=16) of people born overseas admitted to hospital following a non-fatal drowning incident sustained a brain injury compared to 6.5% of those born in Australia (Figure 7)

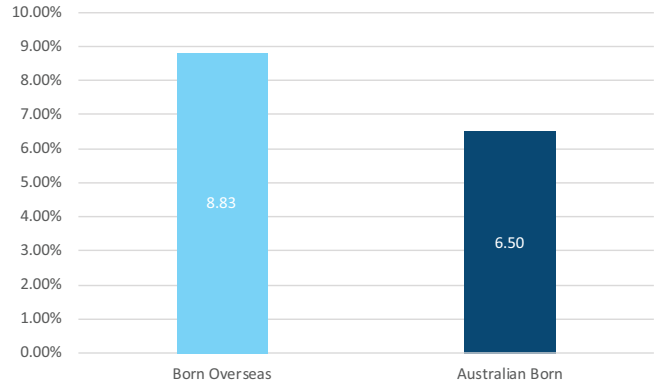


Figure 7: Brain injury by country of birth (born overseas and Australian born), 2005-06 to 2014-15

In addition, 83 people born overseas presented at a hospital emergency department in the Perth metropolitan area following a non-fatal drowning incident at an average rate of 0.31 presentations per 100,000. This represented 13.0% of the total drowning-related emergency department presentations recorded during this time (Figure 8). Over the 10-year period, there was a 51.5% increase in the number of emergency department presentations amongst people born overseas, with the average annual increase 4.3 times that of those born in Australia (8.5% compared to 2.0%).

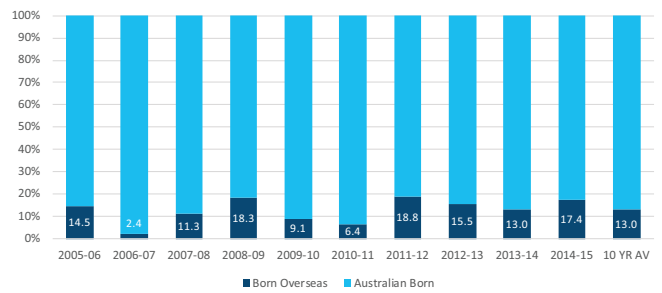


Figure 8: Emergency department presentations by year and country of birth (born overseas and Australian born), 2005-06 to 2014-15

WHO DROWNS?

GENDER

Overall, 72.7% (n=299) of drowning incidents (both fatal and non-fatal) recorded amongst people born overseas were male and 27.3% (n=112) were female (Figure 9). This means that males were 2.7 times more likely to drown than females, which was slightly greater than trends recorded amongst people born in Australia, where males were 1.5 times more likely to drown than females.

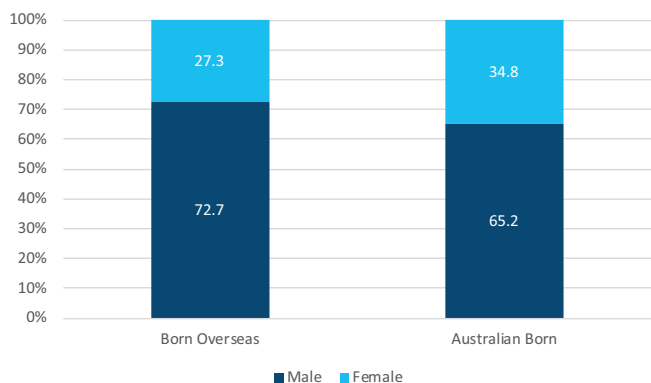


Figure 9: Drowning by gender, people born overseas, 2005-06 to 2014-15

FATAL DROWNING

Similar to overall drowning trends, males born overseas were at greater risk of fatal drowning than their female counterparts. Overall, males were five times more likely than females to be involved in a fatal drowning incident, with 83.2% (n=114) of incidents recorded during the study period involving males. The remaining 16.8% (n=23) were female.

The proportion of fatal drowning incidents involving males was greater for those born overseas (83.2%) than those born in Australia (79.7%).

NON-FATAL DROWNING

Males were also at a higher risk of non-fatal drowning amongst people born overseas, however not to the same degree as with fatal drowning. Overall, males were 2.2 times more likely than females to be admitted to hospital following a non-fatal drowning incident, with 69.6% (n=133) of admissions being male. The remaining 30.4% (n=58) were female. Likewise, males were 1.7 times more likely than females to present at an emergency department in the Perth metropolitan area, with 62.7% (n=52) of presentations being male. The remaining 37.3% (n=31) were female.

AGE

Adults aged 25-64 years recorded the highest proportion of drowning amongst people born overseas, representing half of all incidents recorded during the study period (n=207, 50.4%), almost twice the proportion recorded amongst people born in Australia. Compared to people born in Australia, drowning proportions were higher amongst people born overseas for all age groups except for toddlers and children 5-14 years of age (Figure 10).

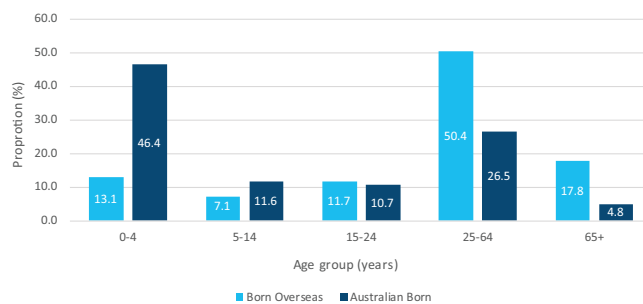


Figure 10: Drowning by age and country of birth (born overseas and Australian born), 2005-06 to 2014-15

FATAL

Fatal drowning amongst people born overseas was most common amongst those aged 25-34 years (n=28, 20.4%), 65-74 years (n=26, 19.0%) and 55-64 years (n=23, 16.8%). The lowest proportion was recorded amongst toddlers aged 0-4 years where no fatal drowning deaths were recorded. This differs from fatal drowning amongst people born in Australia, with toddlers aged 0-4 years at greatest risk (n=38, 18.4%) followed by adults aged 35-44 years (n=22, 16.9%) and 55-64 years (n=23, 14.0%). See Figure 11.

The greatest disparity in relation to age was observed in children aged 0-14 years, with the proportion of fatal drowning incidents involving children amongst people born in Australia 14 times greater than for those born overseas. The proportion of drowning deaths involving adults aged 25-34 years and older adults aged 65-74 years was greater for people born overseas than those born in Australia (1.6 times and 3.5 times greater respectively).

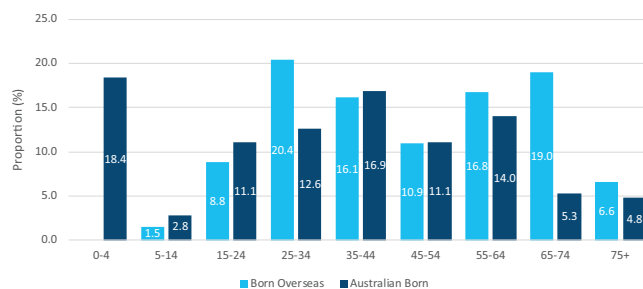


Figure 11: Fatal drowning by age and country of birth (born overseas and Australian born), 2005-06 to 2014-15

COUNTRY OF BIRTH

FATAL

Overall, there were 44 countries of birth for people involved in fatal drowning incidents during the study period, with the highest proportion (n=48, 35.0%) from the United Kingdom (UK), Asia/Pacific (n=41, 29.9%) and Europe (n=22, 16.1%). See Figure 12. The highest proportion of people were born in England (n=20, 14.6%) followed by UK – unspecified (n=17, 12.4%), New Zealand (n=10, 7.3%), Malaysia, Germany and Ireland (n= 6, 4.4%). The top 10 countries of birth area is outlined in Table 1.

More than half of people born overseas were from a non-English speaking country (n=71, 51.8%).

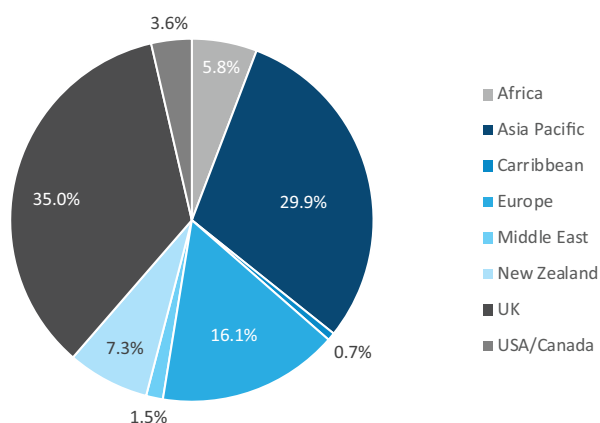


Figure 12: Fatal drowning by country of birth, 2005-06 to 2014-15

NON-FATAL

Similar to fatal drowning, there was a diverse range of countries of birth in non-fatal drowning data during the study period. The top 10 countries of birth are listed in Table 1.

Table 1: Top 10 countries of birth, 2005-06 to 2014-15

RANK	FATAL	HOSPITAL ADMISSIONS	ED PRESENTATIONS
1	England	England	New Caledonia
2	UK – unspecified	New Zealand	UK – unspecified
3	New Zealand	Ireland	China
4	Germany	UK – unspecified	Mongolia
5	Ireland	South Africa	Guernsey
6	Malaysia	India	England
7	South Korea	China	Greece
8	South Africa	Italy	Myanmar
9	India	Sudan	South East Asia
10	Taiwan	Taiwan	Ireland



LENGTH OF TIME IN AUSTRALIA

Data relating to length of time in Australia was only available for fatal drowning data. Two-thirds (n=91, 66.4%) of people born overseas involved in a drowning incident during the study period were residing in Australia at the time of the incident and 27.7% (n=38) were overseas visitors. Length of time in Australia was unknown in 5.8% (n=8) of cases (Figure 13).

Figure 13: Length of time in Australia, people born overseas, 2005-06 to 2014-15

LONG-TERM RESIDENTS - 10 OR MORE YEARS

59 FATAL DROWNING INCIDENTS (43.1%)

- **55-74 years of age (62.7%)**
- Average age: 60.4 years
- **Born in UK (50.8%), Europe (18.6) and Asia (11.9%)**
- On average, had been living in Australia for 35.4 years
- **44.1% occurred in regional WA**
Great Southern, Mid-West, South West
- 30.5% were contributed to by alcohol
- **16.9% poor or non-swimmers**

TOP LOCATIONS:

ocean/harbour (27%)
river/creek/stream (22%)
beach (19%)

TOP 3 ACTIVITIES:

swimming (29%)
fishing (22%)
recreating (19%)

OVERSEAS TOURISTS

26 FATAL DROWNING INCIDENTS (19.0%)

- **25-34 years of age (30.8%)**
- Average age: 44.9 years
- **Born in UK (30.8%), Asia (23.1%) and Europe (19.2%)**
- On average, had been in Australia for 1.5 months
- **76.9% occurred in regional WA**
Mid-West, South West
- 15.4% were contributed to by alcohol
- **23.1% poor or non-swimmers**

TOP LOCATIONS:

beach (65%)
ocean/harbour (35%)
river/creek stream (15%)

TOP 3 ACTIVITIES:

swimming (35%)
surfing (15%)
recreating (15%)

NEW ARRIVALS

21 FATAL DROWNING INCIDENTS (15.3%)

- **35-44 years of age (38.1%)**
- Average age: 34.0 years
- **Born in Asia (47.2%), UK (23.8%) and Africa (14.3%)**
- On average, had been living in Australia for 2.9 years
- **57.1% occurred in regional WA**
South West, Goldfields, Great Southern
- 9.5% were contributed to by alcohol
- **70.6% poor or non-swimmers**

TOP LOCATIONS:

ocean/harbour (62%)
beach (27%)

TOP 3 ACTIVITIES:

swimming (29%)
fishing (24%)
recreating (19%)

INTERNATIONAL STUDENTS/WORKING VISAS

11 FATAL DROWNING INCIDENTS (8.0%)

- **20-30 years of age (100%)**
- Average age: 24.4 years
- **Born in Asia (63.6%) and Europe (18.2%)**
- On average, had been in Australia for 6 months
- **100% occurred in regional WA**
South West, Mid-West, Kimberley
- 27.2% were contributed to by alcohol
- **36.4% poor or non-swimmers**

TOP LOCATIONS:

lake/dam/lagoon (46%)
beach (27%)
ocean/harbour (18%)

TOP 3 ACTIVITIES:

swimming (64%)
fishing (9%)
recreating (9%)

Coronial Recommendation

Local employers of foreign labour might wish to give thought to how they can better inform employees that they bring to the region about the challenges of local conditions. Agencies involved in the tourism industry and other government agencies may wish to consider whether further warnings are necessary concerning swimming in local spots as a preventative measure.

Drowning death inquest, 2009

WHEN DO THEY DROWN?

Drowning incidents involving people born overseas were most common during the summer months with almost half (n=188, 45.7%) occurring during this time of year. Winter recorded the lowest number of drowning incidents (n=52, 12.7%). This trend was observed for both fatal and non-fatal drowning (Figure 14).

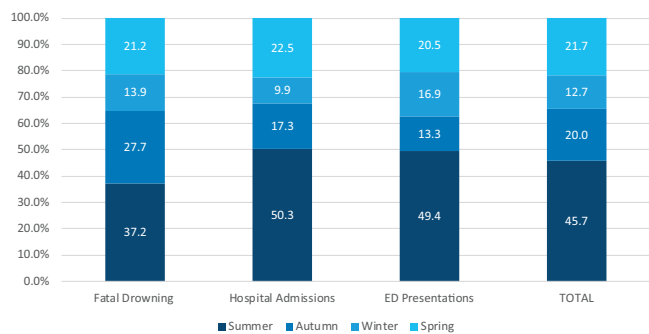


Figure 14: Drowning by season – people born overseas, 2005-06 to 2014-15

Data relating to day of the week and time of the incident was only available for fatal drowning cases. Overall, 43.1% (n=59) occurred on weekends and the remaining 56.9% (n=78) occurred on a weekday. There were 23 (16.8%) fatal drowning incidents recorded on public holidays, with one third of these occurring over the Christmas and New Year period.

Fatal drowning incidents recorded amongst people born overseas were most likely to occur in the afternoon between 2pm and 4pm (n=30, 21.9%) and in the morning between 10am and 12pm (n=25, 18.5%). See Figure 15.

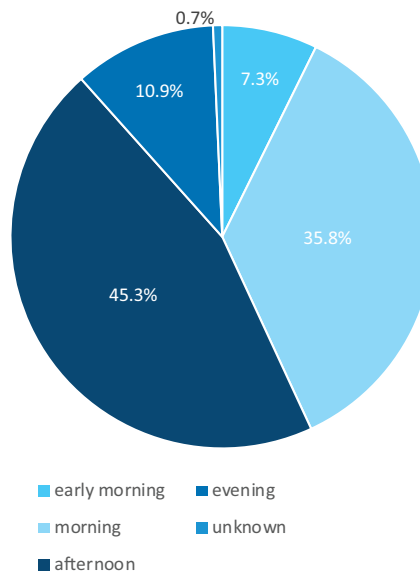


Figure 15: Drowning by time of day – people born overseas, 2005-06 to 2014-15



WHERE AND HOW DO THEY DROWN?

REGION

Due to small numbers of non-fatal drowning incidents in regional areas during the study period, data relating to specific region where the incident occurred was only available for fatal drowning incidents. Overall 57.7% (n=79) of fatal drowning incidents involving a person born overseas occurred in regional and remote areas of the state. The remaining 42.3% (n=58) of incidents occurred in the Perth metropolitan area. The North Metropolitan (n=25), Mid-West (n=22) and South West (n=19) regions recorded the highest number of fatal drowning incidents involving people born overseas (Figure 16).

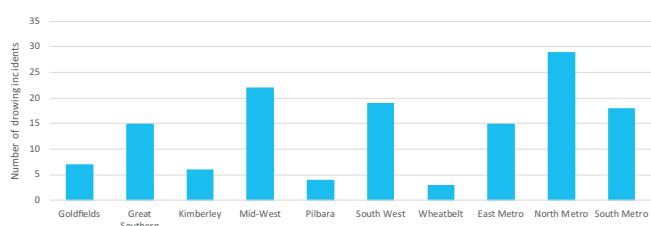


Figure 16: Fatal drowning by region – people born overseas, 2005-06 to 2014-15

HIGH RISK REGIONAL LOCATIONS

- Albany
- Carnarvon
- Margaret River/Augusta
- Esperance

In regional WA, Albany (n=13), Carnarvon (n=7), Margaret River (n=7), Esperance (n=6), Exmouth (n=5) and Kalbarri (n=5) were identified as the highest risk locations. In the Perth metropolitan area, the City of Wanneroo (n=12), Rockingham (n=8) and Stirling (n=6) recorded the highest number of drowning incidents involving people born overseas.

While the majority of drowning deaths involving people born overseas occurred in major cities (n=47, 34.3%), a large proportion occurred in outer regional (n=25.5%), remote (n=16, 11.7%) and very remote (n=24, 17.5%) areas of the state (Figure 17).



Figure 17: Remoteness classification – people born overseas, 2005-06 to 2014-15 – infographic as per previous reports

AQUATIC LOCATION

Data relating to the aquatic location where the drowning incident occurred was only available for fatal drowning and hospital admissions following a non-fatal drowning incident.

FATAL DROWNING

Fatal drowning incidents involving people born overseas were most likely to occur at coastal locations, with ocean/harbours (n=52, 38.0%) and beaches (n=36, 26.3%) recording the highest number of incidents during the study period (Figure 18).

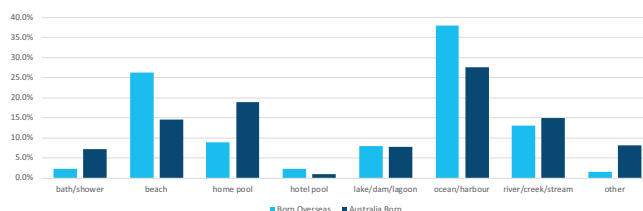


Figure 18: Drowning by location and country of birth (people born overseas and Australian born), 2005-06 to 2014-15

The proportion of coastal drowning deaths was higher for people born overseas (64.6%) compared to those born in Australia (42.0%). More than half of all coastal drowning deaths (n=47, 53.4%) involved a person from a non-English speaking country and the majority occurred in regional WA (n=60, 68.2%). Coastal deaths were more common amongst new arrivals (less than five years in Australia) and short-term visitors including overseas tourists, people on working visas, business trips and international students.

Overall, 21.2% (n=29) of fatal drowning incidents occurred at inland waterways, with rivers, creeks and streams the most common location (n=18, 13.1%), followed by lakes, dams and lagoons (n=11, 8.0%). More than half (n=15, 51.7%) of drowning incidents occurring at inland waterways were located in regional WA. One fifth (n=6, 20.7%) involved a person from a non-English speaking country, over half (n=16, 55.2%) involved a person who had been living in Australia for 10 or more years and 17.2% (n=5) involved a short-term visitor such as an overseas tourist and person on a working holiday. Alcohol was a factor in 37.9% (n=11) of incidents occurring at inland waterways, with an average blood alcohol concentration of 0.141%.

The proportion of fatal drowning incidents occurring at home locations was lower amongst people born overseas (11.7%) compared to those born in Australia (26.0%). Fatal drowning incidents involving people born overseas at locations in and around the home were most likely to occur at home swimming pool/spas (n=12, 8.8%). Almost all these incidents (n=15, 93.8%) occurred within the Perth metropolitan area. Incidents commonly involved adults, with an average age of 61 years, from an English-speaking country (n=12, 75.0%) who had been living in Australia for 10 or more years (n=12, 75.0%). Over half of incidents occurring at home were contributed to by alcohol (n=9, 56.3%) with an average blood alcohol concentration of 0.172%. In addition, 62.5% (n=10) were contributed to by a pre-existing medical condition.

NON-FATAL DROWNING

There were some clear differences in locations for non-fatal drowning amongst people born overseas and those born in Australia (Table 2). The most common locations for non-fatal drowning incidents amongst people born overseas were in open water such as large areas of water (n=86, 45.0%) and beaches (n=38, 19.9%). While for those born in Australia, the most common locations were home – outdoor area (n=168, 22.4%), large area of water (n=128, 17.1%) and home – other/unspecified (n=86, 11.5%).

Table 2: Top 5 aquatic locations (people born overseas and Australian born), 2005-06 to 2014-15

RANK	AUSTRALIAN BORN	BORN OVERSEAS
1	Home – Outdoor Area	Large Area of Water
2	Large Area of Water	Beach
3	Home – Other/ Unspecified	Stream of Water
4	Home – Bathroom	Home – Outdoor Area
5	Beach	Area of Still Water

AQUATIC ACTIVITY

Data relating to the activity being undertaken at the time of the drowning incident was only available for fatal drowning and hospital admissions following a non-fatal drowning incident.

FATAL DROWNING

Swimming (n=37, 27.0%), fishing (n=22, 16.1%) and diving/snorkelling (n=19, 13.9%) were the most common activities being undertaken by people born overseas at the time of the incident. Interestingly, there were some differences recorded in the activities being undertaken at the time of the incident between those born overseas and those born in Australia (Figure 20). The proportion of incidents involving diving, fishing, swimming, watercraft and performing a rescue were greater amongst people born overseas than those born in Australia. While bathing, boating and recreating around aquatic environments were more common amongst people born in Australia than those born overseas.

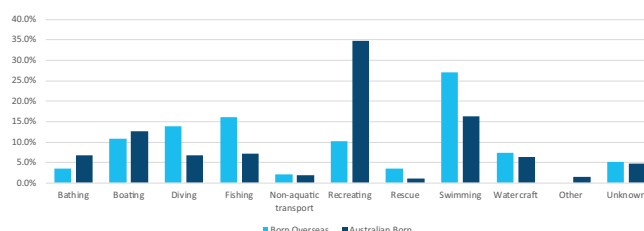


Figure 19: Aquatic activity – fatal drowning (people born overseas and Australian born), 2005-06 to 2014-15

Over half (n=73, 53.3%) of people born overseas involved in a fatal drowning incident were in the water at the time of the incident. The remaining 41.6% (n=57) entered the water unintentionally, most commonly as a result of slipping/falling (n=27) or being swept in by a wave (n=21). The entry into water was unknown in 5.1% (n=7) of cases, often a result of the person participating alone at the time of the drowning incident.

NON-FATAL DROWNING

The most common activities being undertaken at the time of the non-fatal drowning incident were similar for both people born overseas and those born in Australia, with water sports the most common activity followed by leisure activities for both groups (Table 3). The main difference was that people born overseas were more likely to be participating in other types of work at the time of the incident than those born in Australia.

Table 3: Top 3 aquatic activities – hospital admissions (people born overseas and Australian born), 2005-06 to 2014-15

RANK	AUSTRALIAN BORN	BORN OVERSEAS
1	Water Sport	Water Sport
2	Leisure Activity	Leisure Activity
3	Resting/Sleeping/Vital Activity	Other Type of Work

RESCUE AND RESPONSE

A rescue was attempted in 72.3% (n=99) of fatal drowning incidents involving people born overseas, with the majority performed by people known to the victim (n=57, 57.6%) including a family member or friend. Unlike general drowning trends, a large proportion of rescues were performed by people not known to the victim (n=42, 42.4%) including members of the public, other people participating in the activity at the time of the incident and professional staff such as lifeguards.

Reasons for a rescue not being performed included that the person was participating alone at the time of the incident, other participants were also involved in the incident or were unable to perform a rescue due to lack of swimming skills or safety equipment available at the location.

Where a rescue was performed, cardiopulmonary resuscitation (CPR) was performed in 70.0% (n=69) of incidents. In cases where CPR wasn't performed, it was often the result of rescuers being unable to locate the victim or that the victim was clearly deceased when retrieved from the water.

SWIMMING ABILITY

Swimming ability was much lower amongst people born overseas compared to those born in Australia with a greater proportion reported to non-swimmers or poor swimmers (26.3% compared to 5.4%). See Figure 20.

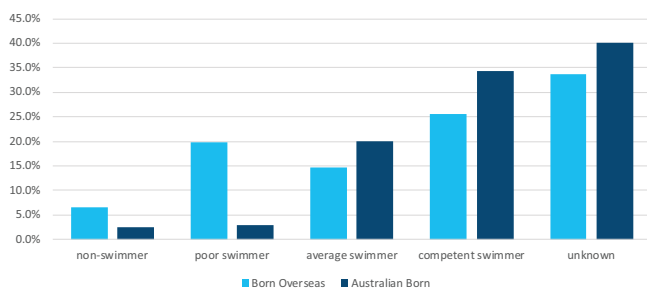


Figure 20: Fatal drowning by swimming ability (people born overseas and Australian born), 2005-06 to 2014-15

ALCOHOL AND OTHER DRUGS

Almost one quarter (n=32; 23.4%) of people born overseas involved in a fatal drowning incident had alcohol in their system at the time of the incident, similar to trends amongst those born in Australia (25.0%). Overall, 65.6% of these recorded a blood alcohol concentration (BAC) in excess of 0.05% with BAC ranging from 0.010 to 0.310. Again, this is similar to trends observed amongst people born in Australia where 25.5% of people had alcohol in their system, 71.2% had a BAC in excess of 0.05% and an average BAC of 0.128%.

Alcohol-related drowning was most common amongst males (78.1%), aged 25-34 years (25.0%) and 55-64 years (21.9%). The highest proportion of alcohol-related drowning deaths were recorded amongst residents living in Australia for more than 10 years (30.5%) followed by short term visitors such as international students, those on working visas or business trips (25.0%) and overseas tourists (15.4%).

Drugs were also common, with 43.1% (n=59) of fatal drowning incidents involving a person born overseas having drugs in their system at the time of the incident. Of these, 15.3% (n=9) had illicit drugs such as cannabis and amphetamines in their system, 88.1% (n=52) had legal, prescribed medications in their system and 6.8% (n=8) had both.

In addition, 11.7% (n=16) of people had both alcohol and drugs in their system at the time of the incident.

PRE-EXISTING MEDICAL CONDITIONS

Overall, 43.1% (n=59) of fatal drowning incidents recorded amongst people born overseas were contributed to by a pre-existing medical condition. The most commonly reported conditions were cardiac (n=38, 64.4%), followed by physical disabilities/injuries that impacted on ability to participate (n=18, 30.5%). Other common medical conditions included mental health conditions such as dementia, depression, bipolar disorder and those caused by brain injury (n=12, 20.3%) and respiratory conditions such as asthma and emphysema (n=8, 13.6%). Medication use associated with these conditions may have further impacted on the person's ability to safely undertake aquatic activity.

OTHER CONTRIBUTING FACTORS

A number of other factors were identified as contributing to fatal drowning incidents recorded amongst people born overseas including environmental factors such as strong currents, rip currents, fast flowing water and large swell (n=66, 48.2%), lack of familiarity with the location they were participating at (n=54, 39.4%), inexperience with the activity being undertaken (n=42, 30.7%) and equipment such as not wearing a lifejacket (n=32, 23.4%).



RECOMMENDATIONS

- 1. Ensure programs are accessible and culturally competent** – ensuring that water safety programs and services are easily accessible, culturally appropriate and competent is the foundation for reducing disparities and addressing lower participation rates amongst multicultural communities. Ensuring that information is easily available in multiple languages and is promoted through culturally relevant channels such as ethnic media providers is essential to improving access and participation.
- 2. Focus on risk-taking behaviour and knowing limitations** – prevention messages need to focus on reducing risk taking behaviours such as mixing alcohol and aquatic activities, participation in high-risk activities such as cliff jumping and taking photos including ‘selfies’ in dangerous locations. Messages also need to focus on ensuring that people are aware of their limitations and participate in activities that are aligned with their level of swimming skill, water safety knowledge and aquatic experience.
- 3. Focus on new migrants** – people who have newly arrived to WA are at high risk of drowning, often due to a lack of swimming ability, aquatic experience and limited water safety knowledge. It is essential that new migrants are provided with water safety education to ensure that they are equipped with the right information and skills to make safer decisions when enjoying WA’s local beaches and waterways.
- 4. Focus on development of swimming and survival skills** – poor swimming ability was a key risk factor for drowning amongst people born overseas, with 26.3% of fatal drowning incidents involving someone with poor or no swimming ability. This was almost five times greater than for fatal drowning amongst people born in Australia. Greater effort is required to encourage participation in swimming and water safety programs across all ages within multicultural communities to ensure they develop the skills required to participate safely in a range of aquatic activities. This includes ensuring that programs are culturally appropriate and address key participation barriers such as cost, language and gender roles.
- 5. Build workforce capacity** – work with key water safety and drowning prevention providers including public aquatic facilities to develop greater cultural competence and workforce diversity. This will contribute to a greater ability to understand, communicate with and interact with people across different which will create a more inclusive environment and encourage greater program participation amongst multicultural communities.
- 6. Consult, involve and empower communities** – seek views of multicultural communities and involve them in the planning, delivery and evaluation of programs and services to facilitate greater community understanding, greater community ownership and investment in water safety and development of better quality program and services. It is also important to actively support and empower communities to promote community action in relation to water safety and drowning prevention.
- 7. Develop strong community connections** – local community networks are a powerful source of information for multicultural communities, so it is essential to develop strong connections with these communities to facilitate delivery of water safety and drowning prevention strategies. Engaging key community members/leaders as advocates and ambassadors may also assist in building trust, encouraging participation and building effective community engagement
- 8. Create partnerships to assist with program planning and delivery** – creating partnerships with key multicultural organisations are fundamental to building capacity and ensuring that water safety and drowning prevention programs continue to meet the needs of multicultural communities in WA.
- 9. Develop strategies to educate overseas tourists** - water is an iconic part of WA and many travellers come to WA intending to participate in aquatic activities. In addition, relaxed attitudes and complacency while on holidays contributes to greater risk of drowning. While it’s impossible to eliminate risk or prevent visitors from exposing themselves to risk/injury through personal actions, it’s important to develop practical strategies to alert visitors to the local risks and hazards that may be encountered, especially those travelling to regional and remote areas so that they can prepare themselves and their families for safe travel.
- 10. Collaborate with those outside the drowning prevention sector** – collaboration is vital to ensuring water safety messages are communicated to visitors in the right place at the right time. In particular, tertiary institutions and foreign labour employers have a responsibility to ensure that their students/employees receive information relating to water safety and drowning prevention while in WA. Better strategies to engage and collaborate with these groups to build their capacity to promote water safety and drowning prevention information to their students/employees are needed to reduce drowning risk amongst these groups.

CONCLUSION

Drowning remains a significant issue amongst people born overseas in WA including long-term residents, new migrants, overseas tourists or those visiting as international students or on short-term working visas. Overall, there was a 13.9% increase in the rate of drowning amongst people born overseas in WA during the study period. Nationally, WA recorded the highest proportion of drowning amongst people born overseas of any state and/or territory.

Given the increasing diversity within WA due to growing migration and tourist numbers, it is even more important to ensure that everyone has access to water safety information and that no one misses out on the opportunity to participate in programs to improve swimming and survival skills to facilitate safe participation in aquatic activities.

Prevention needs to focus on improving swimming and survival skills and water safety knowledge and reducing risk taking behaviours such as mixing alcohol and aquatic activity, cliff jumping, participation in high risk activities such as rock-fishing and taking 'selfies' in high risk locations. Prevention should also focus on encouraging people to know their limitations and participate in activities that are conducive to their level of skill and experience.

This requires adapting current approaches to water safety education to take into consideration differences between trends amongst people born in Australian and those born overseas. In addition, it's important to tailor strategies and messaging to suit target different sub groups such as long-term residents, new migrants, overseas tourists and short-term visitors to ensure that they are relevant. Effective prevention also relies on building strong networks within local multicultural groups, engaging community leaders and water safety advocates and collaboration with key stakeholder and community organisations both within and outside the drowning prevention sector including tourism, agriculture and tertiary education.

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- Department of Health WA, Epidemiology Branch
- Royal Life Saving Society Australia

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SUGGESTED CITATION

Royal Life Saving WA (2017). 10-year analysis of drowning amongst people born overseas in Western Australia, 2005-06 to 2014-15, Perth, Australia

METHODS

This research aimed to investigate drowning in Western Australia (WA) amongst people born overseas, better understand the circumstances surrounding these incidents and identify key risk factors to inform prevention activities.

Information on unintentional fatal and non-fatal drowning incidents that occurred in Western Australian waterways involving people born overseas between 1 July 2005 and 30 June 2015 were included.

Fatal drowning data was sourced from multiple sources including the WA Coroner's Office, the National Coronial Information System (NCIS) and online media monitoring system. All data was matched with the Royal Life Saving Society Australia's National Drowning Database to ensure completeness. Coronial finding, police reports, toxicology and autopsy report documents were reviewed for each individual incident. All fatal drowning incidents recorded during the study time were reviewed to ensure accuracy of country of birth information using the NCIS.

Intentional deaths as a result of suicide or homicide were excluded from the study. Other exclusions included deaths due to natural causes, shark attacks, other injuries, deaths where the cause of death or intent was unascertainable and deaths involving asylum seekers.

While all care is taken to ensure that the information included within this report is as accurate as possible, data may be subject to change following ongoing coronial enquiries and investigations. At the time of publishing this report all cases had been closed and no longer under coronial investigation.

Non-fatal drowning data was collected through the Department of Health WA Epidemiology Branch and included state-wide hospital admissions and emergency department presentations within the Perth metropolitan area. This is due to most regional emergency departments not currently using the ICD-10 coding system. Therefore, non-fatal numbers included within this report may be under-represented. It is also important to note that non-fatal drowning data is not as comprehensive as for fatal drowning data due to small numbers and limited data collection codes.

ICD codes were used to identify cases and included ICD-10 coding for near-drowning (T75.1, W65, W66, W67, W68, W69, W70, W73, W74, V90, V92) and brain injury (striking the head S06.xx, anoxic brain damage G93.1, and cerebral brain complications G93.x).

Drowning rates were calculated per 100,000 population where possible using ABS data provided by the Department of Health WA Epidemiology Branch.



References

1. Office of Multicultural Interests. Cultural Diversity in Western Australia - A Demographic Profile. 2013. Available from: https://www.omi.wa.gov.au/Resources/Publications/Documents/Diversity/Cultural_Diversity_2013.pdf
2. Tourism Western Australia. International Visitation – fast Facts Year Ending December 2016. 2017. Available from <https://www.tourism.wa.gov.au/Publications%20Library/Research%20and%20reports/IVS%20Fast%20Facts%20YE%20Dec%202016.pdf>
3. Peden AE, Franklin RC & Leggat PA. International travellers and unintentional fatal drowning in Australia – a 10 year review 2002-12. *Journal of Travel Medicine*. 2016; 23 (2):1-7
4. Leggat PA & Franklin R. Risk Perception and Travelers. *Journal of Travel Medicine*. 2013; 20 (1):1-2
5. Moran K & Wilcox S. New settlers, old problems: Facilitating water safety education for new residents in aquatically oriented New Zealand. 2010; 22 (2):49-60
6. Golob MI, Giles AR & Rich KM. Enhancing the Relevance and Effectiveness of Water Safety Education for Ethnic and Racial Minorities. *International Journal of Aquatic Research and Education*. 2013; 7 (1):39-55
7. Savage MA & Franklin RC. Exploring the Delivery of Swimming and Water Safety Teacher Training to Culturally and Linguistically Diverse Communities. *International Journal of Aquatic Research and Education*. 2015; 9 (3):241-256
8. Leggat PA, Wilks J. Overseas visitor deaths in Australia 2001 to 2003. *Journal of Travel Medicine*. 2009; 16:243-7
9. McInnes RJ, Williamson LM & Morrison A. Unintentional Injury during Foreign Travel: A Review. *Journal of Travel Medicine*. 2002; 9 (6):297-307
10. Wilks J, Pendergast D & Wood M. Accidental Deaths of Overseas Visitors in Australia 1997-2000. *Journal of Hospitality and Tourism Management*. 2003; 10 (1):79-89
11. Wilks J & Davis R. International Tourists and Recreational Injuries. *Plaintiff*. 2003; 59:8-14
12. Wilks J & Coory M. Overseas Visitor Injuries in Queensland Hospitals: 1996-2000. *The Journal of Tourism Studies*. 2002; 13 (1):2-8
13. Australian Water Safety Council. Australian Water Safety Plan 2016-2020. Sydney, Australian Water Safety Council. 2016
14. Quan L, Crispin B, Bennett E & Gomez A. Beliefs and practices to prevent drowning among Vietnamese-American adolescents and parents. *Injury Prevention*. 2006; 12:427-429
15. Irwin C, Irwin R, Martin N & Ross S. Constraints Impacting Minority Swimming Participation Phase II. 2010. Available from: <https://www.usaswimmingfoundation.org/docs/librariesprovider1/mas/2010-constraints-impacting-minority-swimming-participation-report.pdf>
16. Office of Multicultural Interests. “Not Drowning, Waving”: Culturally and Linguistically Diverse Young People at Risk in Western Australia. 2009; Available from: https://www.omi.wa.gov.au/Resources/Publications/Documents/orations/Not_Drowning.pdf
17. The Centre for Trauma Care, Prevention, Education and Research (DTCPER) and Kids Health. The NSW Study of Drowning and Near-Drowning in Children (0-16). The Children’s Hospital at Westmead. 2015
18. Matthews B & Grace S. Drowning Prevention in Culturally and Linguistically Diverse Communities. *Injury Prevention*. 2012; 18 (Suppl 1):A1-A246
19. Cortes LM, Hargarten SW & Hennes HM. Recommendations for Water Safety and Drowning Prevention for Travelers. *International Journal of Travel Medicine*. 2006; 13 (1):21-34
20. Williamson A, Hatfield J, Sherker S et al. A comparison of attitudes and knowledge of beach safety in Australia for beachgoers, rural residents and international tourists. *Australian and New Zealand Journal of Public Health*. 2012. 36:385-91
21. Ballantyne R, Carr N & Hughes K. Between the Flags: An Assessment of Domestic and International University Students’ Knowledge of Beach Safety in Australia. *Tourism Management*. 2005; 26 (4):617-622
22. Prideaux B & Master H. Reducing Risk Factors or International Visitors in Destinations. *Asia Pacific Journal of Tourism Research*. 2001; 6 (2):24-32



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