Executive summary

CHILD DEATHS IN QUEENSLAND, FINDINGS IN 2016–17 AND TRENDS SINCE 2004

In the 12-month period from 1 July 2016 to 30 June 2017, the deaths of 421 children and young people were registered in Queensland, a rate of 37.3 deaths per 100,000 children aged 0–17 years. The 421 deaths were an increase (7.9%) from 390 child deaths (34.6 deaths per 100,000) in 2015–16.

Infant mortality in Queensland was 4.4 deaths per 1000 live births, up from 3.8 deaths per 1000 in 2015–16.

Trends in child mortality rates, shown in Figure 1, include:

- In general, child mortality rates have decreased over the period 2004 to 2017. The 3-year rolling average rates in Figure 1 show year-to-year changes including the most recent increase in 2016–17.
- The overall trend is driven by decreases in child mortality from explained diseases and morbid conditions, the two largest contributors of which are deaths from perinatal conditions and congenital anomalies.
- Child mortality from unexplained diseases and morbid conditions (i.e. from natural causes but the illness has not been identified) has shown some recent decreases, but there is no strong overall trend. Almost all of this group are infant deaths classified as Sudden Infant Death Syndrome (SIDS) or undetermined causes.
- Child mortality from external (or non-natural) causes have generally decreased over the period. This group includes deaths from injuries, either non-intentional (accidental) injuries such as transport incidents or drowning, or from intentional injuries, which includes suicide and fatal assault and neglect.

Figure 1: Child deaths by major cause group (3-year rolling averages) 2004–17

Data source: Queensland Child Death Register (2004–17)
1. Rates (deaths per 100,000 population aged 0–17 years) are averaged over 3-year periods.

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1. The Queensland Child Death Register is based on death registrations recorded by the Queensland Registry of Births, Deaths and Marriages. Deaths in this Annual Report are counted by date of death registration and may therefore differ from child death data based on date of death.
2. Diseases and conditions which originate during pregnancy or the neonatal period (first 28 days of life).
Mortality rates for categories of externally-caused child deaths from 2004 to 2017 are illustrated in Figure 2. Due to the relatively small numbers involved, caution should be exercised in interpreting year-to-year changes.

Transport-related child mortality declined, dropping by 62% over the 13-year period. While there were some changes over time in the numbers and rates of deaths from drowning, other non-intentional injury, suicide and fatal assault, the changes were not indicative of trends (changes were not statistically significant).

Figure 2: Externally caused child deaths by primary cause (3-year rolling averages) 2004–17

Leading causes of child deaths in 2016–17

Table 1 broadly outlines the causes of death by age group for the 421 registered deaths.

- Deaths from diseases and morbid conditions (natural causes) accounted for the majority of deaths of children registered in 2016–17 (315 deaths—or 75%), occurring at a rate of 27.9 deaths per 100,000 children aged 0–17 years.
- External (non-natural) causes of death accounted for 72 deaths (17%), and occurred at a rate of 6.4 deaths per 100,000 children. A further 34 deaths (8%) were pending a cause of death.
- Suicide (21 deaths) was the leading external cause of death for the third consecutive year, occurring at a rate of 1.9 deaths per 100,000 children.
- Drowning deaths increased from 9 to 19 deaths in the last year to be the second leading external cause of death.
- Transport has been the leading external cause for the first 10 periods of the Queensland Child Death Register, but decreased to 14 deaths in 2016–17 from 25 deaths in 2014–15 and 18 deaths in 2015–16.
- Thirty infant deaths were sudden unexpected deaths in infancy (SUDI), a category where an infant dies suddenly with no immediately obvious cause (not shown in Table 1).
By age and sex

- In 2016–17, the mortality rate for males aged 0–17 years was higher than females, with a rate of 39.5 deaths per 100 000 males compared to 35.0 deaths per 100 000 females.

- Diseases and morbid conditions was the most frequent cause of death for infants under one year of age, accounting for 90% of the deaths in this age category (242 of 269 deaths).

- The leading cause of death for children aged 1–4 years was diseases and morbid conditions (29 deaths), followed by drowning (11 deaths) and transport incidents (4 deaths).

- The leading cause of death for children aged 5–9 years was diseases and morbid conditions (15 deaths), followed by drowning (4 deaths).

- The leading cause of death for children aged 10–14 years was diseases and morbid conditions (16 deaths). The leading external cause of death for children aged 10–14 years was suicide (9 deaths).

- The leading cause of death for young people aged 15–17 years was diseases and morbid conditions (13 deaths). Suicide was the leading external cause of death in this age category (12 deaths). Five young people aged 15–17 years died in transport incidents which is the lowest number recorded since the commencement of the child death register in 2004.

Table 1: Cause of death by age category 2016–17

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>Under 1 year</th>
<th>1–4 years</th>
<th>5–9 years</th>
<th>10–14 years</th>
<th>15–17 years</th>
<th>Total</th>
<th>Rate per 100 000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseases and morbid conditions</td>
<td>242</td>
<td>29</td>
<td>15</td>
<td>16</td>
<td>13</td>
<td>315</td>
<td>27.9</td>
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<td>Explained diseases and morbid conditions</td>
<td>236</td>
<td>28</td>
<td>14</td>
<td>16</td>
<td>13</td>
<td>307</td>
<td>27.2</td>
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<td>Unexplained diseases and morbid conditions</td>
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<td>1</td>
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<td>0</td>
<td>8</td>
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<tr>
<td>SIDS and undetermined causes (infants)</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0.5</td>
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<tr>
<td>Undetermined &gt; 1 year</td>
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<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>*</td>
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<tr>
<td>External causes</td>
<td>6</td>
<td>20</td>
<td>7</td>
<td>18</td>
<td>21</td>
<td>72</td>
<td>6.4</td>
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<tr>
<td>Suicide</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>12</td>
<td>21</td>
<td>1.9</td>
</tr>
<tr>
<td>Transport</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>5</td>
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<td>0</td>
<td>1</td>
<td>2</td>
<td>4</td>
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<td>1</td>
<td>5</td>
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<td>Other</td>
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<td>1</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>*</td>
</tr>
<tr>
<td>Drowning</td>
<td>3</td>
<td>11</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>19</td>
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<td>Non-pool</td>
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<td>0</td>
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<td>1</td>
<td>5</td>
<td>0.4</td>
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<td>Other non-intentional injury</td>
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<td>7</td>
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<td>Threats to breathing</td>
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<td>0</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>0.4</td>
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<tr>
<td>Exposure to smoke, fire and flames</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>*</td>
</tr>
<tr>
<td>Exposure to inanimate mechanical forces</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>*</td>
</tr>
<tr>
<td>Poisoning by noxious substances</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>*</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>*</td>
</tr>
<tr>
<td>Cause of death pending</td>
<td>21</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>34</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>269</td>
<td>53</td>
<td>27</td>
<td>35</td>
<td>37</td>
<td>421</td>
<td>37.3</td>
</tr>
</tbody>
</table>

Rate per 100 000: 429.6, 20.7, 8.4, 11.5, 20.2, 37.3

Data source: Queensland Child Death Register (2016–17)

* Rates have not been calculated for numbers less than four.

1. Rates are based on the most up-to-date denominator data available and are calculated per 100 000 children aged 0–17 years in Queensland each year. Rates for the 2016–17 period use the estimated resident population (ERP) data as at June 2015.

2. Rates for age categories are calculated per 100 000 children in each age category. Age-specific death rates are discussed in the chapters relating to each cause of death.
Aboriginal and Torres Strait Islander children

- Fifty-seven Aboriginal and/or Torres Strait Islander children died in 2016–17, an increase from 52 deaths in 2015–16.
- The mortality rate for Aboriginal and/or Torres Strait Islander children was 1.9 times the rate for non-Indigenous children (64.9 deaths per 100,000 Indigenous children, compared to 35.0 deaths per 100,000 non-Indigenous children).
- The infant mortality rate for Aboriginal and/or Torres Strait Islander children was 6.7 deaths per 1000 live births compared to the non-Indigenous rate of 4.1 deaths per 1000 live births.
- Indigenous child mortality rates have decreased over the last 13 years. Based on 3-year averages, between 2004 and 2017 infant mortality for Indigenous children decreased from 11.6 to 7.0 deaths per 1000 live births. The mortality rate for Indigenous children aged 1–17 years decreased from 35.3 to 28.5 deaths per 100,000 children over the same period. Aboriginal and/or Torres Strait Islander child mortality, however, continues to be twice the rate for non-Indigenous children as decreases in Indigenous mortality have been matched by decreases in non-Indigenous mortality.
- Queensland’s infant mortality rates were higher than the most recently available national averages. In 2015, the national Indigenous infant mortality rate was 6.1 deaths per 1000 live births, while the non-Indigenous infant mortality rate was 3.2 deaths per 1000 live births.
- There were 3 suicide deaths of Aboriginal and/or Torres Strait Islander young people during 2016–17. The suicide rate among Aboriginal and/or Torres Strait Islander young people was three times the rate of their non-Indigenous peers (3-year average).
- Aboriginal and/or Torres Strait Islander infants are over-represented in SUDI. Over the last 3 years, Indigenous infants died suddenly and unexpectedly at twice the rate of non-Indigenous infants.
- Encouragingly there have been fewer Indigenous SUDI deaths in the last 2 years compared to earlier periods.

Children known to the child protection system

- A child is deemed to have been known to the child protection system if, within one year before the child’s death, the child was: in the custody or guardianship of the Department of Communities, Child Safety and Disability Services (DCCSDS); or, DCCSDS was aware of alleged harm or risk of harm; or, DCCSDS took action under the Child Protection Act 1999; or, DCCSDS was notified of concerns before the birth of a child and reasonably suspected the child to be in need of protection after their birth.
- Of the 421 children who died, 57 were known to the child protection system, representing a rate of 70.8 deaths per 100,000, compared to 37.3 deaths per 100,000 for all Queensland children.
- The rates of death of children known to the child protection system have consistently been higher than all children, especially for deaths from external causes.
- Notably, children known to the child protection system made up large proportions of child deaths from suicide, drowning and fatal assault in 2016–17:
  - 10 of the 19 children who drowned were known to the child protection system
  - 9 of the 21 youth suicides were known to the child protection system
  - 4 of the 5 children who died from fatal assault were known to the child protection system.

Diseases and morbid conditions

- In 2016–17, the deaths of 315 children and young people were the result of diseases and morbid conditions, a rate of 27.9 deaths per 100,000 children and young people aged 0–17 years in Queensland.
- Deaths of children from diseases and morbid conditions are most likely to occur in the first days and weeks of life, with infants accounting for 77% of deaths from diseases and morbid conditions in 2016–17.
• Infant deaths from the two leading causes—conditions originating in the perinatal period and congenital malformations, deformations and chromosomal abnormalities (219 deaths combined)—make up the largest proportion of all deaths of children and young people (70% of all 315 deaths from diseases and morbid conditions and 52% of the 421 deaths from all causes).

• Aboriginal and/or Torres Strait Islander children died from diseases and morbid conditions at a rate of 50.1 per 100,000 Indigenous children aged 0–17 years (compared to 26.1 deaths per 100,000 non-Indigenous children) in 2016–17. Over the last 13 years, the Indigenous mortality rates from diseases and morbid conditions have generally been 1.5 to 2 times the rates for non-Indigenous children.

• Five children and young people died with notifiable conditions, two of which were diseases potentially preventable by vaccines. Over the last 3 years, 13 children have died from diseases which were potentially vaccine-preventable, with the most common of these including influenza, invasive meningococcal disease and invasive pneumococcal disease.

Transport-related deaths

• Fourteen children and young people died in transport-related incidents in Queensland during 2016–17, at a rate of 1.2 deaths per 100,000 children aged 0–17 years. This is the lowest number and rate of transport-related fatalities since reporting commenced in 2004.

• Four deaths were in motor vehicle crashes, which was the lowest number of deaths in this category in the child death register (from 2004). Much of the reduction in transport mortality rates (indicated in Figure 2) have been due to reductions in motor vehicle deaths, with 20 or more deaths each year common prior to 2012–13.

• Five children died as pedestrians. Three of these children died in low-speed vehicle run-overs of children under five.

• Male children were twice as likely as female children to be involved in a transport-related fatality.

• Young people aged 15–17 years were the most likely age group to be involved in a transport-related fatality.

Drowning

• Sixteen children and young people drowned in Queensland in 2016–17 (rate of 1.7 per 100,000 children aged 0–17 years) compared to 9 in 2015–16 and 16 in 2014–15.

• Seven children drowned in swimming pools in 2016–17, 5 in bathtubs, 3 in lakes, ponds and rural dams, 2 in objects containing water, and one each at the beach and in a river or creek.

• Children aged 1–4 years made up the largest group of drowning deaths (11 deaths), a pattern which has been found in all previous reporting periods, and an indication of the particular vulnerability of this age group.

• Ten of the 19 children who drowned were known to the child protection system in the year prior to their death.

• Pool fencing standards were introduced in 1991 and have been incrementally strengthened over time. The numbers of private-pool drowning deaths of children aged under 5 have fluctuated from year to year; however, numbers before the introduction of pool fencing requirements were generally higher than those since the introduction of standards, and especially in the last decade.

• The increase in drownings in 2016–17 highlights the importance of prevention strategies in reducing the risk to children. Children under 5 years are particularly vulnerable, and there were 14 drowning deaths in 2016–17, with swimming pools (6 deaths) and bathtubs (5 deaths) the most common hazards for young children.

• The circumstances surrounding swimming pool and bathtub drownings points to a range of particular factors which placed young children at increased risk. Risk factors for pool drownings included leaving, or keeping pool gates propped open, failing to have a pool fence which meets legislative requirements, not keeping the fencing in good repair, or having objects nearby which could be climbed to open the gate. Further, precautions still need to be taken even when pools are in disrepair, or when work is being done on the pool or fencing.

• Specific risk factors for bathtub drownings were lapses in adult supervision, the presence of other siblings and leaving water running in the bath, even if the bathplug was removed. The child or their siblings may access the plug, or toys may stop the bath water from draining.

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5 Vaccines are available for only selected strains of meningococcal disease, pneumococcal disease and influenza.
Other non-intentional injuries including fire

- In 2016–17, 13 children and young people died in non-intentional injury-related incidents, other than drowning or transport incident, at a rate of 1.2 deaths per 100,000 children aged 0–17 years.
- Five of the deaths were caused by accidental threats to breathing. 3 were caused by exposure to inanimate mechanical forces and one each was caused by non-intentional poisoning by noxious substances and exposure to smoke, fire, and flames.
- The highest number of deaths occurred in the 10–14-year age group, with 7 deaths.
- Thirty-five children died in 23 house or dwelling fires in Queensland over the 13-year period 2004–17. Young children are at particular risk in house fires with 17 of the deaths being of children aged under five.
- The Fire and Emergency Services (Domestic Smoke Alarms) Amendment Act 2016 came into effect in January 2017. All new and renovated dwellings are required to have inter-connected photoelectric smoke alarms in bedrooms and on each level. Smoke alarms in existing dwellings must be replaced after 10 years as stipulated in the new legislation.

Suicide

- Twenty-one young people died of suspected or confirmed suicide during 2016–17 (rate of 1.9 deaths per 100,000 children aged 0–17 years). The number of suicide deaths recorded over the 13 years since 2004 ranges from 15 to 26 with an average of 19.8 per year.
- Suicide was the leading external cause of death in 2016–17 (29% of external causes of death for all children). Suicide accounted for almost half of the deaths by external causes among young people aged 10–17 years.
- Male suicides usually outnumber female suicides. Over the most recent 3-year period, the suicide rate for males was 1.4 times the rate for females.
- Twelve of the 21 suicides were of young people aged 15–17 years. Over the most recent 3-year period, the suicide rate of young people aged 15–17 years was 5.1 times the rate of young people aged 10–14 years.
- Young people may exhibit one or more suicidal or self-harm behaviours prior to suicide, as was the case for 14 of the 21 young people who suicided. However, there was no evidence of previous self-harm or suicidal behaviour for 7 young people.
- Nine of the 21 young people who died as a result of suicide were known to the Queensland child protection system in the 12 months prior to their death.

Fatal assault and neglect

- Five children died as a result of suspected or confirmed assault and neglect in Queensland during 2016–17. The number of child deaths from assault and neglect recorded over the 13 years since 2004 ranges from 4 to 14 with an average of just over 8 deaths per year.
- Four children were alleged to have been killed by a family member and one child by a non-family member.
- Of the 4 children alleged to have been killed by a family member, 2 of these deaths were identified as domestic homicide, and 2 were classified as fatal child abuse.
- None of the children who died from assault or neglect during 2016–17 were Aboriginal and/or Torres Strait Islander.
- Four of the children who died as a result of assault or neglect were known to the child protection system in the 12 months prior to their death.
Sudden unexpected death in infancy and SIDS

- Sudden unexpected death in infancy (SUDI) is a category of deaths where an infant (aged under one year) dies suddenly with no immediately obvious cause. Predominantly, deaths from SUDI are recorded as cause pending until the outcomes of coroners’ investigations or post-mortem examinations are concluded and cause of death is determined.
- There were 30 SUDI cases in 2016–17, a rate of 47.9 deaths per 100,000 infants. The numbers of SUDI deaths have fluctuated over the last 13 years, ranging between 29 and 55 deaths each year.
- Aboriginal and/or Torres Strait Islander infants are over-represented in SUDI deaths. Over the last 3 years, Indigenous infants died suddenly and unexpectedly at twice the rate of non-Indigenous infants.
- Encouragingly, the rates of Aboriginal and/or Torres Strait Islander SUDI deaths in the last 2 years have been lower than most earlier periods since 2004 (4 deaths in 2015–16 and 3 in 2016–17).
- Children known to the child protection system had SUDI rates over three times that for all children over the last 3 years.
- Six of the 12 deaths with an official cause of death were attributed to SIDS and undetermined causes. Official causes of death were still pending for 18 deaths.
- Six of the SUDI deaths were found to have an explained cause of death. Four children died as a result of infant illnesses or conditions unrecognised prior to their deaths and 2 died from sleep accidents.
- In 2015–16, when all but 2 SUDI deaths had recorded causes of death, the rate of death for SIDS and undetermined causes was 24.0 per 100,000 infants (15% of infant deaths from all causes), representing the third highest cause of death after perinatal conditions and congenital anomalies.
- Compared to other explained causes, SIDS and undetermined causes are a much more common contributor to infant deaths in the post-neonatal period (28 days to 11 months), accounting for 24% of all deaths in this age group in 2015–16 (14 of 59 post-neonatal infant deaths).
- Risk factors for SUDI deaths include shared sleeping and unsafe sleep surfaces (such as soft surfaces, sofas, folding beds, other temporary bedding), as well as infant factors (prematurity, history of respiratory illness) and parental factors (smoking, high-risk lifestyles).
- Multidisciplinary expert panel reviews of SUDI cases, the findings of which are presented in this report, revealed the following themes:
  - for SUDI, there is rarely a single cause in isolation
  - the SUDI infant’s family environment is complex and vulnerable
  - for SUDI families, safe sleeping messages have not been acted on
- Growing evidence indicates the Pepi-Pod® Program, currently being rolled out as a portable sleep space with safe sleep education in Indigenous communities, improves the safety of infants in high risk sleep environments. Consideration could be given to extending the program into other settings in which vulnerable families and their babies are displaced from their homes or have complex needs, including: young mothers’ programs; domestic violence and homeless shelters; drug and alcohol support services; and as part of emergency responses in cyclone, flood and fire-affected locations. There would also be value in developing studies which would map the impact of targeted programs for vulnerable families on infant mortality patterns.

QUEENSLAND CHILD DEATH REGISTER ACCESS AND DATA REQUESTS

Access to comprehensive child death data is available at no cost to organisations or individuals conducting genuine research or prevention activities. Child death register data requests which were actioned during the year are set out in Chapter 9. Stakeholders wishing to access the Queensland Child Death Register to support their research, policy or community education initiatives should email their request to child_death_prevention@qfcc.qld.gov.au.
REPORT STRUCTURE

The report structure is divided into nine chapters as follows:

Chapter 1—Child deaths in Queensland
Chapter 2—Deaths from diseases and morbid conditions
Chapter 3—Transport-related deaths
Chapter 4—Drowning
Chapter 5—Other non-intentional injury-related deaths
Chapter 6—Suicide
Chapter 7—Fatal assault and neglect
Chapter 8—Sudden unexpected deaths in infancy
Chapter 9—Child death prevention activities

Appendices

Supplementary Information


- A collection of Australian and New Zealand Child Death Statistics for the year 2015
- The 2016–17 13-year tables