

Queensland
Family & Child
Commission

SUPPLEMENTARY CHAPTER

**Australian and New Zealand
child death statistics
2017**

ANNUAL REPORT

Deaths of children and young people
Queensland

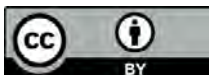
2018–19

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Key findings

This chapter presents information on child mortality from all eight Australian states/territories and New Zealand. Due to small numbers and limitations for some categories, rates were not calculated for some jurisdictions. Analysis of child deaths during 2017 has shown:

- Infants (children under one year) had the highest rates of child deaths in all jurisdictions, accounting for 61% of all child deaths in Australia and New Zealand. Child mortality rates decreased substantially after infancy and continued to decrease until the teenage years, when they increased again.
- Queensland had the third highest child mortality rate (34.8 per 100 000) and the third highest infant mortality rate (412.1 per 100 000). Child mortality rates varied between 27.8 per 100 000 and 74.6 per 100 000. Infant mortality rates varied between 305.1 and 718.1 per 100 000.
- Indigenous child mortality rates were higher than the non-Indigenous rates within all jurisdictions.¹
- Indigenous child mortality rates varied between 42.0 and 98.6 per 100 000 and non-Indigenous child mortality rates varied between 27.0 and 57.8 per 100 000.¹
- Queensland had the third highest Indigenous child mortality rate (71.4 per 100 000) and the third highest non-Indigenous child mortality rate (32.0 per 100 000).¹ Indigenous children constituted 8.2% of the Queensland child population yet accounted for 16.7% of the child deaths.
- Deaths from diseases and morbid conditions accounted for 73% of all child deaths (excluding Western Australia) in 2017.
- Queensland had the third highest child mortality rate from diseases and morbid conditions (27.5 per 100 000), with rates varying between 20.5 and 47.6 per 100 000.
- Suicide was the leading external cause of death in Queensland, Victoria, Western Australia, the Northern Territory and New Zealand. Transport-related incidents were the leading external cause of death in New South Wales and Tasmania.
- Queensland had the highest number of drowning deaths.
- Queensland exhibited mid-range child mortality rates, in terms of rank and value for external-cause deaths (5.8 per 100 000), with rates varying between 3.6 and 17.5 per 100 000.¹
- Queensland had the lowest rate of infant deaths from Sudden Infant Death Syndrome (SIDS) and undetermined causes (21.3 per 100 000), with rates varying between 21.3 and 57.8 per 100 000.

¹ Comparative statements exclude jurisdictions where a rate could not be calculated.

Australian and New Zealand child death statistics

This supplementary chapter presents information on child mortality from all eight Australian states/territories and New Zealand. The data have been provided by members of the Australian and New Zealand Child Death Review and Prevention Group (ANZCDR&PG) who conduct child death reviews and reporting within their own jurisdictions. It should be noted the child death review functions throughout Australia and New Zealand have individual legislative bases, functions, roles and reporting requirements. The data prepared by these agencies currently differ in some respects and these differences are noted in the methodology section.

The stated aim of the ANZCDR&PG is to identify, address and potentially decrease the numbers of infant, child and youth deaths by sharing information on issues in the review and reporting of child deaths, and to work collaboratively towards national and international reporting. The Queensland Family and Child Commission (QFCC) greatly appreciates the efforts of all agencies who contribute to this chapter and looks forward to continued collaboration.

Child death data

The analysis covers deaths that occurred during the period 1 January 2017 to 31 December 2017. For Australian jurisdictions, deaths were counted based on the jurisdiction in which they occurred, not the residency of the deceased child. For New Zealand, the data only include deaths of New Zealand residents within New Zealand.

All jurisdictions provided raw numbers of the deaths of all children from birth up to, but not including, 18 years of age occurring in 2017, independent of when these deaths were registered with the Registry of Births, Deaths and Marriages.

It is important to note that caution must be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event; and hence, have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

There is considerable variation between jurisdictions in the proportion of the population identified as Indigenous (Aboriginal and Torres Strait Islander in Australia or Māori in New Zealand). As there is considerable disparity between Indigenous and non-Indigenous child mortality rates, this affects the comparability of overall child mortality rates. This highlights the value of presenting child death data, disaggregated by Indigenous status.

Child mortality numbers and rates presented here may differ from those published in the reports of individual agencies due to differences in methodology or population estimates used.

The methodology used in compiling the data is outlined towards the end of this chapter.

All child deaths

Table 1 provides the numbers and rates of all child deaths for each age category in each jurisdiction during 2017. The mortality rates for all children (aged 0–17 years) in each jurisdiction are also presented in Figure 1.

Table 1: Number and rate of child deaths by age and jurisdiction 2017

Jurisdiction		Age category					Total
		Under 1 year	1–4 years	5–9 years	10–14 years	15–17 years	
NSW	<i>n</i>	315	52	42	51	65	525
	Rate per 100 000	320.8	12.9	8.3	10.9	23.7	30.0
VIC	<i>n</i>	245	37	32	24	46	384
	Rate per 100 000	313.2	11.3	8.1	6.6	21.4	27.8
QLD	<i>n</i>	252	51	25	27	46	401
	Rate per 100 000	412.1	19.9	7.5	8.6	24.8	34.8
WA	<i>n</i>	N/A	N/A	N/A	N/A	N/A	N/A
	Rate per 100 000	N/A	N/A	N/A	N/A	N/A	N/A
SA	<i>n</i>	59	15	10	12	14	110
	Rate per 100 000	305.1	18.2	9.5	12.1	23.2	30.0
TAS	<i>n</i>	21	3	1	5	8	38
	Rate per 100 000	374.0	*	*	16.0	42.0	33.8
ACT	<i>n</i>	20	11				31
	Rate per 100 000	357.1	12.8				33.9
NT	<i>n</i>	28	5	1	2	11	47
	Rate per 100 000	718.1	32.8	*	*	119.6	74.6
NZ	<i>n</i>	257	45	31	31	56	420
	Rate per 100 000	424.3	18.3	9.5	10.3	30.0	37.5

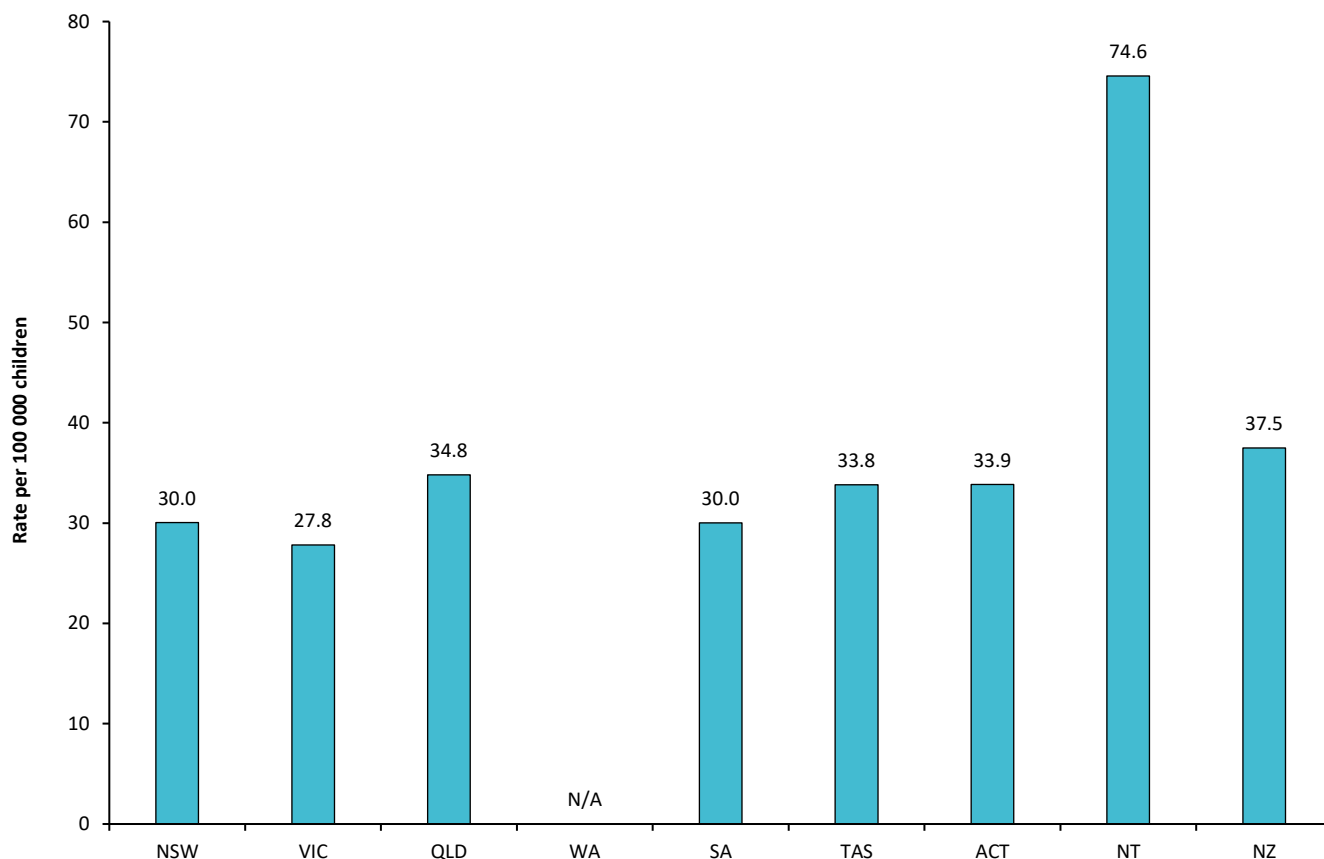
Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

* Rates have not been calculated for numbers less than 4.

N/A Data for Western Australia are not available.

1. Refer to the methodology section for jurisdictional methodological differences and additional issues.
2. Rates are calculated per 100 000 children in each age category in each jurisdiction and use as a denominator the Estimated Resident Population (ERP) as at 30 June 2017.
3. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event; and hence, have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

Figure 1: Rate of child deaths (aged 0–17 years) by jurisdiction 2017



Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

N/A Data for Western Australia are not available.

1. Refer to the methodology section for jurisdictional methodological differences and additional issues.
2. Rates are calculated per 100 000 children aged 0–17 years in each jurisdiction and use as a denominator the ERP as at 30 June 2017.
3. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event; and hence, have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

In 2017, infants (children under one year) had the highest rates of child deaths in all jurisdictions (not including Western Australia). Infants accounted for 61% of all child deaths in Australia and New Zealand, varying between 54% (South Australia) and 65% (Australian Capital Territory). In general, child mortality rates decreased substantially after infancy and continued to decrease until the teenage years, when they increased again. In all jurisdictions, the second highest mortality rates were for young people aged 15–17 years.²

In 2017, the Northern Territory had the highest child mortality rate (74.6 per 100 000), followed by New Zealand (37.5 per 100 000). Victoria had the lowest child mortality rate (27.8 per 100 000) and South Australia and New South Wales had the equal second lowest (30.0 per 100 000).

In 2017, Queensland had the third highest child mortality rate (34.8 per 100 000), compared to the other jurisdictions. Queensland had the third highest mortality rate for infants (412.1 per 100 000) and the fourth highest rate for young people aged 15–17 years (24.8 per 100 000).

² Comparative statements exclude jurisdictions where a rate could not be calculated.

Indigenous status

There is considerable variation between jurisdictions in the proportion of the population identified as Indigenous (Aboriginal and Torres Strait Islander in Australia or Māori in New Zealand), from 1.7% in Victoria to 42.1% in the Northern Territory. Table 9 in the Methodology section provides the proportions for each jurisdiction.

Table 2 provides the numbers and rates of child death for Indigenous and non-Indigenous children in each jurisdiction during 2017. The mortality rates for Indigenous and non-Indigenous children in each jurisdiction are also presented in Figure 2. This graph includes the total child mortality rates, as a reference point (initially presented in Figure 1).

It is noted that some jurisdictions experience difficulty with the collection of Indigenous status in child death data. Problems in collecting Indigenous status data for death registrations may result in an undercount in the Indigenous death rates, limiting comparability on this aspect. Therefore, the rates presented in Table 2 should be interpreted with caution.

Table 2: Number and rate of child deaths (aged 0–17 years) by Indigenous status and jurisdiction 2017

Jurisdiction		Indigenous status	
		Indigenous	Non-Indigenous
NSW	<i>n</i>	46	479
	Rate per 100 000	42.0	29.6
VIC	<i>n</i>	12	372
	Rate per 100 000	51.1	28.0
QLD	<i>n</i>	67	334
	Rate per 100 000	71.4	32.0
WA	<i>n</i>	N/A	N/A
	Rate per 100 000	N/A	N/A
SA	<i>n</i>	16	94
	Rate per 100 000	92.6	27.0
TAS	<i>n</i>	2	36
	Rate per 100 000	*	35.6
ACT	<i>n</i>	<5	N/A
	Rate per 100 000	*	N/A
NT	<i>n</i>	26	21
	Rate per 100 000	98.6	57.8
NZ	<i>n</i>	165	255
	Rate per 100 000	59.0	30.8

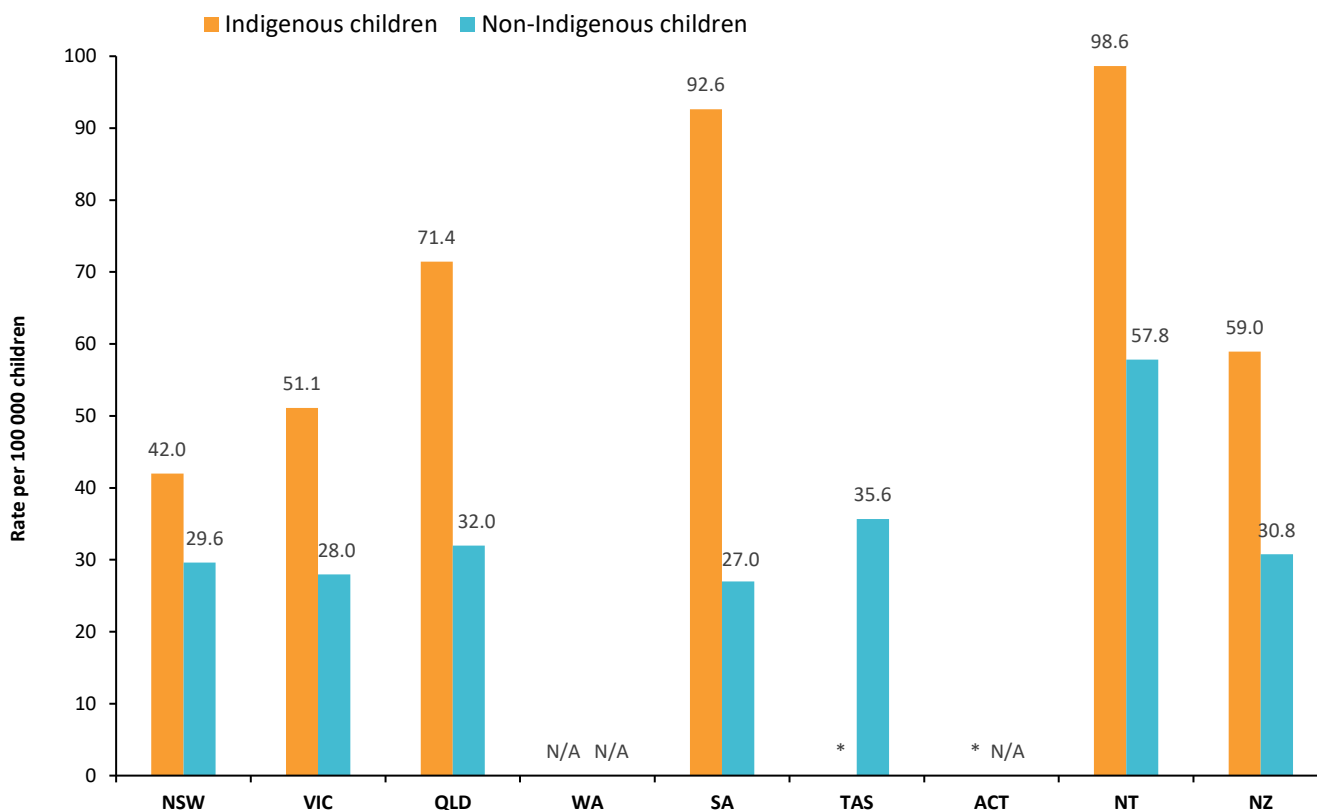
Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

* Rates have not been calculated for numbers less than 5.

N/A Results fewer than five are not reported for the Australian Capital Territory. Total variables are suppressed as, from reported results, the suppressed value can be calculated. Data for Western Australia are not available.

1. Refer to the methodology section for jurisdictional methodological differences and additional issues.
2. Rates are calculated per 100 000 Indigenous children aged 0–17 years and per 100 000 non-Indigenous children aged 0–17 years in each jurisdiction and use as a denominator the ERP as at 30 June 2016.
3. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event, and hence have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

Figure 2: Rate of child deaths (aged 0–17 years) by Indigenous status and jurisdiction 2017



Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

* Rates have not been calculated for numbers less than 5.

N/A Data for the Australian Capital Territory and Western Australia are not available.

1. Refer to the methodology section for jurisdictional methodological differences and additional issues.
2. Rates are calculated per 100 000 Indigenous children aged 0–17 years and per 100 000 non-Indigenous children aged 0–17 years in each jurisdiction and use as a denominator the ERP as at 30 June 2016.
3. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event, and hence have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

In 2017, Indigenous child mortality rates were higher than the non-Indigenous rates, within all jurisdictions, where both rates could be calculated. Within Australia, Aboriginal and Torres Strait Islander children constituted 6.0% of the child population, yet accounted for at least 11.0% of the child deaths (at least 169 of 1536 deaths).³ Within New Zealand, Māori children constituted 25.0% of the child population, yet accounted for 39.3% of the child deaths (165 of 420 deaths).

In 2017, the Northern Territory had the highest Indigenous child mortality rate (98.6 per 100 000), followed by South Australia (92.6 per 100 000). New South Wales had the lowest Indigenous child mortality rate (42.0 per 100 000) and Victoria had the second lowest (51.1 per 100 000).⁴

The Northern Territory had the highest non-Indigenous child mortality rate (57.8 per 100 000), followed by Tasmania (35.6 per 100 000). South Australia had the lowest non-Indigenous child mortality rate (27.0 per 100 000) and Victoria had the second lowest (28.0 per 100 000).⁴

In 2017, Queensland had the third highest Indigenous child mortality rate (71.4 per 100 000) and the third highest non-Indigenous child mortality rate (32.0 per 100 000), compared to the other jurisdictions. Aboriginal and Torres Strait Islander children constituted 8.2% of the child population yet accounted for 16.7% of the child deaths (67 of 401 deaths).

³ Numbers of Indigenous deaths not provided for the Australian Capital Territory or Western Australia.

⁴ Comparative statements exclude jurisdictions where a rate could not be calculated.

Sex

Table 3 provides the numbers and rates of child death for females and males in each jurisdiction during 2017. The mortality rates for female and male children in each jurisdiction are also presented in Figure 3.

Table 3: Number and rate of child deaths (aged 0–17 years) by sex and jurisdiction 2017

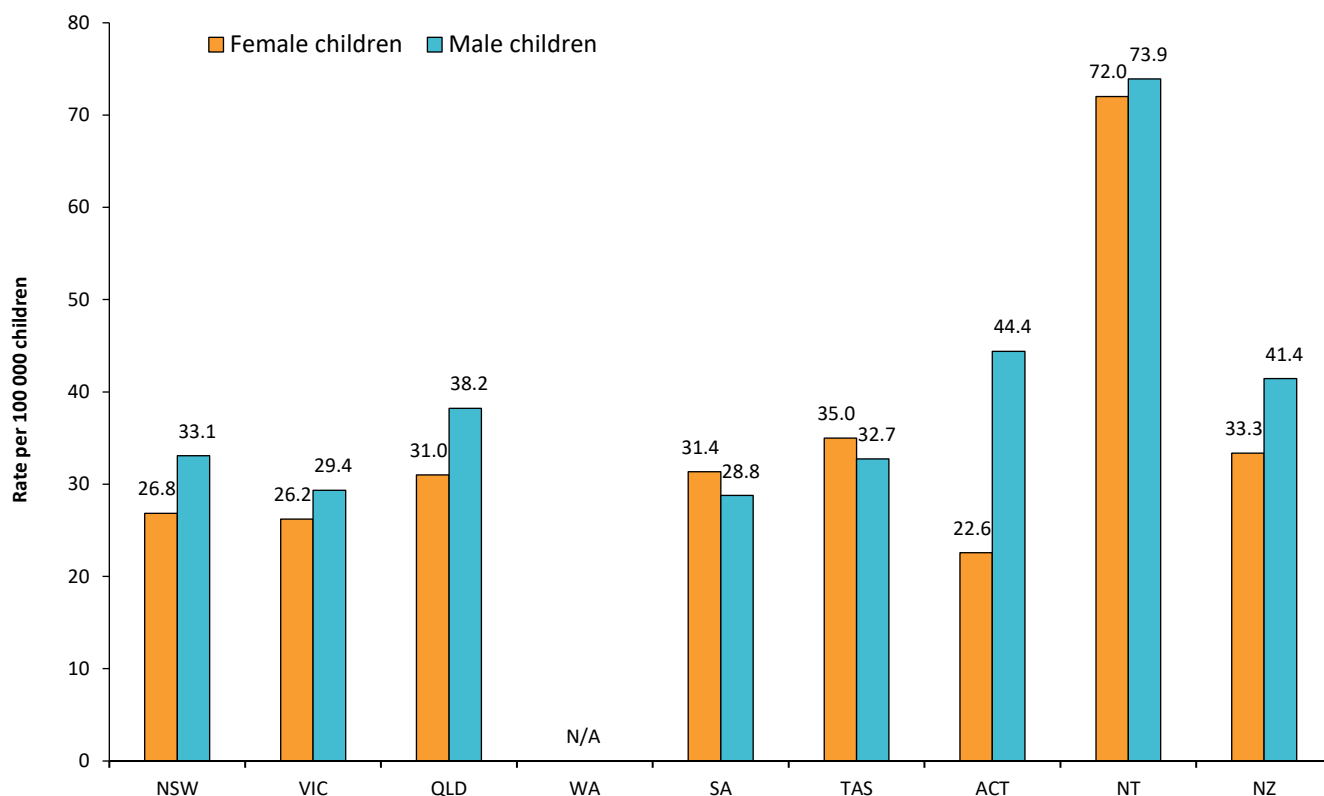
Jurisdiction		Sex	
		Female	Male
NSW	<i>n</i>	228	297
	Rate per 100 000	26.8	33.1
VIC	<i>n</i>	176	208
	Rate per 100 000	26.2	29.4
QLD	<i>n</i>	174	226
	Rate per 100 000	31.0	38.2
WA	<i>n</i>	N/A	N/A
	Rate per 100 000	N/A	N/A
SA	<i>n</i>	56	54
	Rate per 100 000	31.4	28.8
TAS	<i>n</i>	19	19
	Rate per 100 000	35.0	32.7
ACT	<i>n</i>	10	21
	Rate per 100 000	22.6	44.4
NT	<i>n</i>	22	24
	Rate per 100 000	72.0	73.9
NZ	<i>n</i>	182	238
	Rate per 100 000	33.3	41.4

Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

N/A Data for Western Australia are not available.

1. There was one child death in the Northern Territory where the sex was unknown and one child death in Queensland where the sex was indeterminate.
2. Refer to the methodology section for jurisdictional methodological differences and additional issues.
3. Rates are calculated per 100 000 females and per 100 000 males aged 0–17 years in each jurisdiction and use as a denominator the ERP as at 30 June 2017.
4. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event, and hence have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

Figure 3: Rate of child deaths (aged 0–17 years) by sex and jurisdiction 2017



Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

N/A Western Australia data not available.

1. There was one child death in the Northern Territory where the sex was unknown and one child death in Queensland where the sex was indeterminate.
2. Refer to the methodology section for jurisdictional methodological differences and additional issues.
3. Rates are calculated per 100 000 females and per 100 000 males aged 0–17 years in each jurisdiction and use as a denominator the ERP as at 30 June 2017.
4. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event, and hence have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

In 2017, there were higher child mortality rates for males compared to females in all jurisdictions except South Australia and Tasmania.

In 2017, male child mortality rates were two times the rate for females in the Australian Capital Territory.

In 2017, the male child mortality rate in Queensland was 1.2 times the rate for females.

Cause of death pending

Classification methodologies may vary across jurisdictions in relation to categorising cause of death. Where official cause of death information has not yet been received to enable classification, where there is no immediately obvious cause of death (such as a transport incident), or where an investigation has not been finalised by a coroner, deaths may be categorised as 'cause of death pending'.

The numbers and rates shown in Tables 5, 6 and 7 are therefore subject to change until further cause of death information is received.

Table 4 below shows the number of deaths where a cause had not yet been allocated at the time of reporting.

Table 4: Number child deaths pending a cause of death by jurisdiction 2017

Jurisdiction		Case status		Total
		Cause of death allocated	Cause of death pending	
NSW	<i>n</i>	514	11	525
VIC	<i>n</i>	384	0	384
QLD	<i>n</i>	398	3	401
WA	<i>n</i>	57 ^a	0 ^a	57 ^a
SA	<i>n</i>	106	4	110
TAS	<i>n</i>	38	0	38
ACT	<i>n</i>	26	5	31
NT	<i>n</i>	44	3	47
NZ	<i>n</i>	394	26	420

Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

^a Cause of death information is only available for reportable deaths (external causes and SIDS and undetermined causes) for Western Australia.

1. Refer to the methodology section for jurisdictional methodological differences and additional issues.

Deaths from diseases and morbid conditions

Deaths from diseases and morbid conditions are those deaths whose underlying cause is an infection, disease, congenital anomaly or other naturally occurring condition. This category excludes deaths from sudden infant death syndrome (SIDS) and undetermined causes (within this supplementary chapter only).⁵

Table 5 provides the numbers and rates of child deaths from diseases and morbid conditions for each age category in each jurisdiction during 2017. The mortality rates from diseases and morbid conditions for all children (aged 0–17 years) in each jurisdiction are also presented in Figure 4.

Table 5: Number and rate of child deaths from diseases and morbid conditions by age and jurisdiction 2017

Jurisdiction		Age category					Total
		Under 1 year	1–4 years	5–9 years	10–14 years	15–17 years	
NSW	<i>n</i>	277	35	29	36	27	404
	Rate per 100 000	282.1	8.7	5.7	7.7	9.9	23.1
VIC	<i>n</i>	208	24	30	13	19	294
	Rate per 100 000	265.9	7.3	7.6	3.6	8.8	21.3
QLD	<i>n</i>	233	31	17	18	18	317
	Rate per 100 000	381.0	12.1	5.1	5.7	9.7	27.5
WA	<i>n</i>	N/A	N/A	N/A	N/A	N/A	N/A
	Rate per 100 000	N/A	N/A	N/A	N/A	N/A	N/A
SA	<i>n</i>	54	7	6	7	5	79
	Rate per 100 000	279.3	8.5	5.7	7.1	8.3	21.6
TAS	<i>n</i>	18	1	0	3	1	23
	Rate per 100 000	320.6	*	0.0	*	*	20.5
ACT	<i>n</i>	19	9				28
	Rate per 100 000	339.3	10.5				30.6
NT	<i>n</i>	23	4	1	0	2	30
	Rate per 100 000	589.9	26.3	*	0.0	*	47.6
NZ	<i>n</i>	182	28	20	13	13	256
	Rate per 100 000	300.5	11.4	6.1	4.3	7.0	22.9

Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

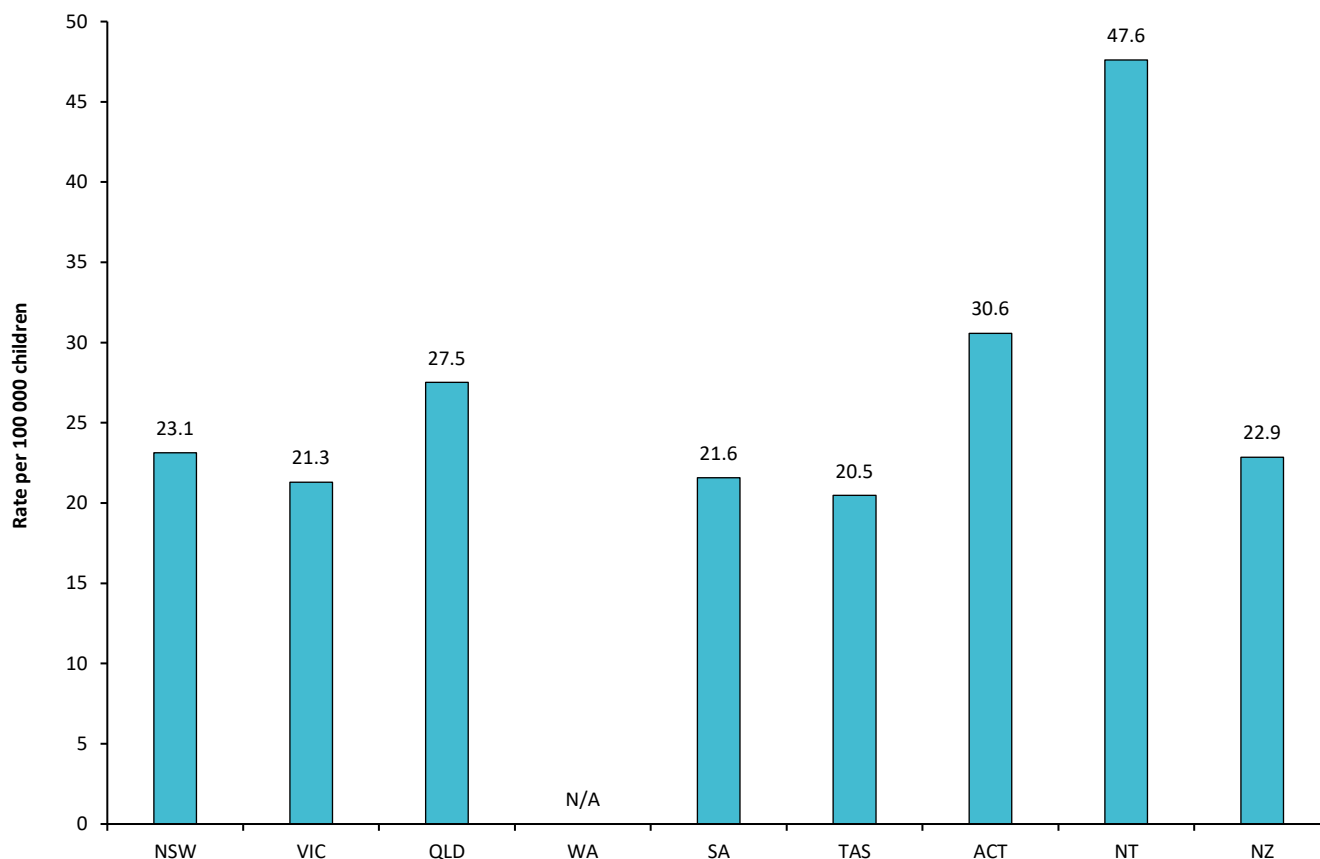
* Rates have not been calculated for numbers less than 4.

N/A Cause of death information for diseases and morbid conditions was not available for Western Australia.

1. In some jurisdictions, the Coroner is yet to determine the official cause of death for some cases and these deaths are not included in Tables 5, 6 or 7. In some instances these deaths have been included, but the data are based on general information regarding the circumstances of death. Hence, the overall numbers and rates are subject to change.
2. Refer to the methodology section for jurisdictional methodological differences and additional issues.
3. Rates are calculated per 100 000 children in each age category in each jurisdiction and use as a denominator the ERP as at 30 June 2017.
4. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event; and hence, have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

⁵ The QFCC normally includes SIDS and undetermined causes within diseases and morbid conditions (classified as unexplained diseases and morbid conditions). For inter-jurisdictional comparability of data in this supplementary chapter, deaths from SIDS and undetermined causes have been excluded from deaths due to diseases and morbid conditions.

Figure 4: Rate of child deaths (aged 0–17 years) from diseases and morbid conditions by jurisdiction 2017



Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

N/A Cause of death information was not available for diseases and morbid conditions for Western Australia.

1. In some jurisdictions, the Coroner is yet to determine the official cause of death for some cases and these deaths are not included in Tables 5, 6 or 7. In some instances these deaths have been included, but the data are based on general information regarding the circumstances of death. Hence, the overall numbers and rates are subject to change.
2. Refer to the methodology section for jurisdictional methodological differences and additional issues.
3. Rates are calculated per 100 000 children aged 0–17 years in each jurisdiction and use as a denominator the ERP as at 30 June 2017.
4. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event, and hence have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

In 2017, infants (children under one year) exhibited the highest mortality rate from diseases and morbid conditions in all jurisdictions (where cause of death information was available). Infants accounted for 70.9% of all child deaths from diseases and morbid conditions in Australia and New Zealand, varying between 67.9% for the Australian Capital Territory and 78.3% for Tasmania.⁶

In 2017, the Northern Territory had the highest child mortality rate from diseases and morbid conditions (47.6 per 100 000). Tasmania had the lowest child mortality rate from diseases and morbid conditions (20.5 per 100 000) and Victoria had the second lowest (21.3 per 100 000).⁷

In 2017, Queensland had the second highest infant mortality rate and the third highest child mortality rate from diseases and morbid conditions (381.0 per 100 000 and 27.5 per 100 000, respectively).⁸

Deaths from diseases and morbid conditions accounted for 73.2% of all child deaths in 2017 (excluding Western Australia). Hence the inter-jurisdictional differences for deaths from diseases and morbid conditions are similar to those observed for all child deaths.

^{6, 7 and 8} Comparative statements exclude jurisdictions where a rate could not be calculated.

External-cause deaths

External-cause deaths are those resulting from environmental events and circumstances causing injury, poisoning and other adverse effects. Table 6 provides the numbers and rates of child deaths from various external causes in each jurisdiction during 2017. The child mortality rates from all external causes in each jurisdiction are also presented in Figure 5.

Table 6: Number and rate of child deaths (aged 0–17 years) from external causes by jurisdiction 2017

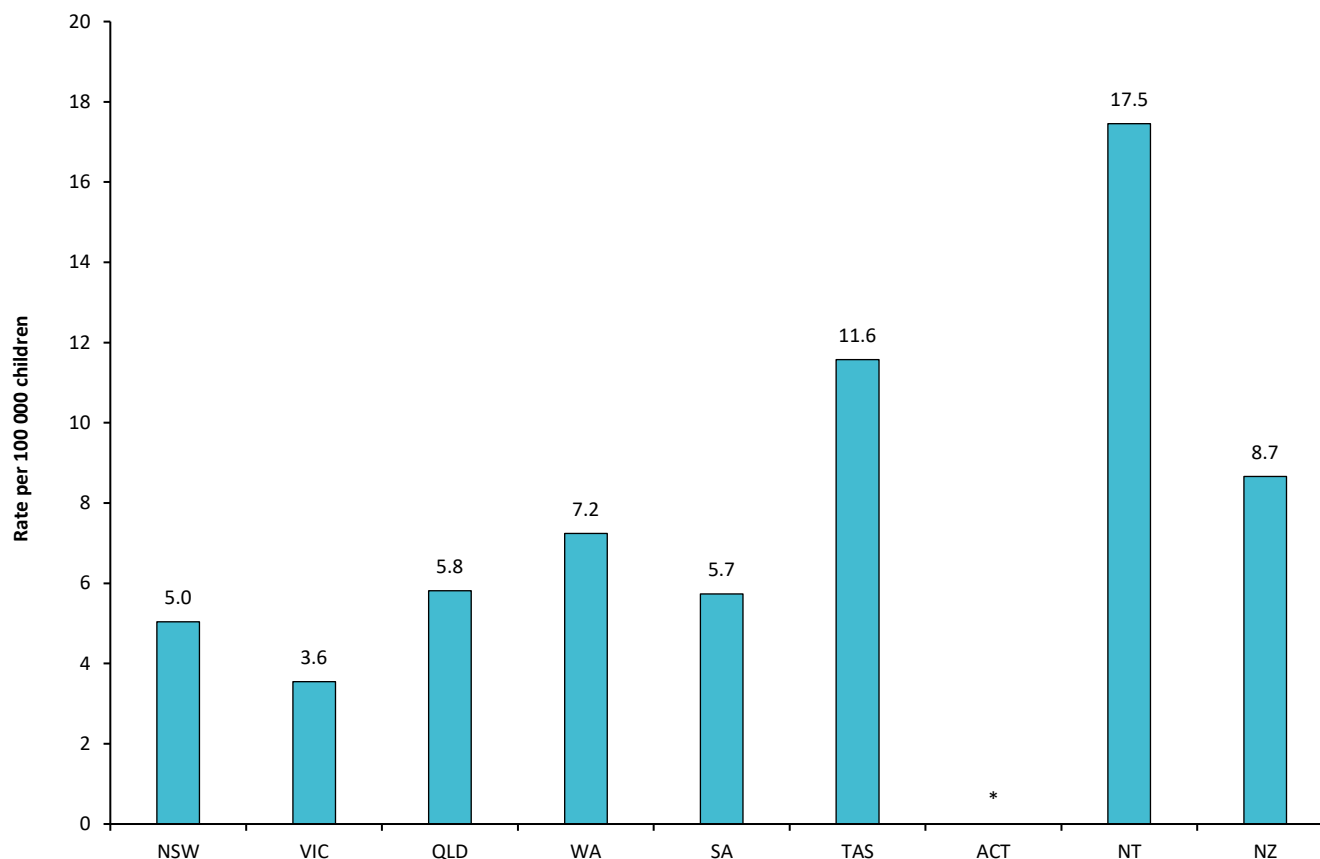
Jurisdiction		Cause of death					Total
		Transport-related	Drowning	Other non-intentional injury-related	Suicide	Fatal assault and neglect	
NSW	<i>n</i>	35	8	13	28	4	88
	Rate per 100 000	2.0	0.5	0.7	1.6	0.2	5.0
VIC	<i>n</i>	15	≤5	6	17	7	49
	Rate per 100 000	1.1	*	0.4	1.2	0.5	3.6
QLD	<i>n</i>	18	14	10	21	4	67
	Rate per 100 000	1.6	1.2	0.9	1.8	0.3	5.8
WA	<i>n</i>	12	5	5	18	3	43
	Rate per 100 000	2.0	0.8	0.8	3.0	*	7.2
SA	<i>n</i>	5	3	5	5	3	21
	Rate per 100 000	1.4	*	1.4	1.4	*	5.7
TAS	<i>n</i>	6	0	4	2	1	13
	Rate per 100 000	5.3	0.0	3.6	*	*	11.6
ACT	<i>n</i>	<5					<5
	Rate per 100 000	*					*
NT	<i>n</i>	3	0	2	6	0	11
	Rate per 100 000	*	0.0	*	9.5	0.0	17.5
NZ	<i>n</i>	27	11	26	31	<3	97
	Rate per 100 000	2.4	1.0	2.3	2.8	*	8.7

Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

* Rates have not been calculated for numbers less than 4, except for the Australian Capital Territory and Victoria, where rates were not calculated for numbers less than 5.

1. Classification of external-cause deaths may differ from state to state. The methodology section in this chapter provides further details.
2. In some jurisdictions, the Coroner is yet to determine the official cause of death for some cases and these deaths are not included in Tables 5, 6 or 7. In some instances these deaths have been included, but the data are based on general information regarding the circumstances of death. Hence, the overall numbers and rates are subject to change.
3. Refer to the methodology section for jurisdictional methodological differences and additional issues.
4. Rates are calculated per 100 000 children aged 0–17 years in each jurisdiction and use as a denominator the ERP as at 30 June 2017.
5. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event; and hence, have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

Figure 5: Rate of child deaths (aged 0–17 years) from external causes by jurisdiction 2017



Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

* Rates have not been calculated for the Australian Capital Territory, for numbers less than 5.

1. Classification of external-cause deaths may differ from state to state. The methodology section in this chapter provides further details.
2. In some jurisdictions, the Coroner is yet to determine the official cause of death for some cases and these deaths are not included in Tables 5, 6 or 7. In some instances these deaths have been included, but the data are based on general information regarding the circumstances of death. Hence, the overall numbers and rates are subject to change.
3. Refer to the methodology section for jurisdictional methodological differences and additional issues.
4. Rates are calculated per 100 000 children aged 0–17 years in each jurisdiction and use as a denominator the ERP as at 30 June 2017.
5. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event, and hence have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

In 2017, suicide was the leading external cause of death in Queensland, Victoria, Western Australia, the Northern Territory and New Zealand. Transport-related incidents were the leading external cause of death in New South Wales and Tasmania.

In 2017, the Northern Territory had the highest rate of external-cause deaths (17.5 per 100 000), followed by Tasmania (11.6 per 100 000). Victoria had the lowest rate of external-cause deaths (3.6 per 100 000).⁹

In 2017, Queensland had the fourth lowest rate of external-cause deaths (5.8 per 100 000), compared to the other jurisdictions. Queensland exhibited the highest mortality rates for drowning deaths (1.2 per 100 000). For all other external cause deaths, Queensland exhibited mid-range child mortality rates, in terms of rank and value.

⁹ Comparative statements exclude jurisdictions where a rate could not be calculated.

Deaths from SIDS and undetermined causes

Table 7 provides the numbers and rates of child deaths from sudden infant death syndrome (SIDS) and undetermined causes by age in each jurisdiction during 2017. The rates of death for infants (children under one year) from SIDS and undetermined causes in each jurisdiction are also presented in Figure 6.

Table 7: Number and rate of child deaths from SIDS and undetermined causes by age and jurisdiction 2017

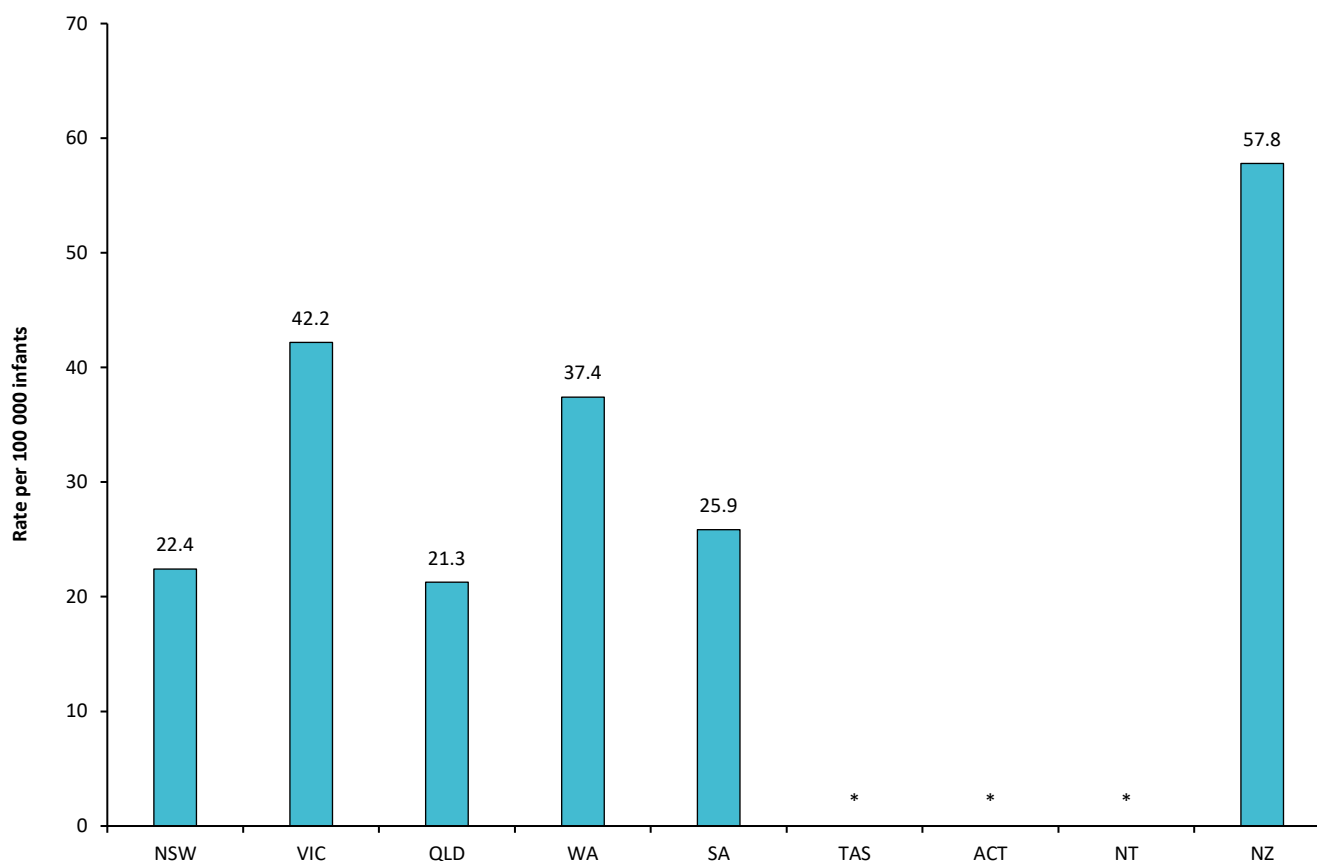
Jurisdiction		Age category		Total
		Under 1 year	1–17 years	
NSW	<i>n</i>	22	0	22
	Rate per 100 000	22.4	0.0	1.3
VIC	<i>n</i>	33	8	41
	Rate per 100 000	42.2	0.6	3.0
QLD	<i>n</i>	13	1	14
	Rate per 100 000	21.3	*	1.2
WA	<i>n</i>	13	1	14
	Rate per 100 000	37.4	*	2.4
SA	<i>n</i>	5	1	6
	Rate per 100 000	25.9	*	1.6
TAS	<i>n</i>	2	0	2
	Rate per 100 000	*	0.0	*
ACT	<i>n</i>	<5		<5
	Rate per 100 000	*		*
NT	<i>n</i>	3	0	3
	Rate per 100 000	*	0.0	*
NZ	<i>n</i>	35	6	41
	Rate per 100 000	57.8	0.6	3.7

Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

* Rates have not been calculated for numbers less than 4, except for the Australian Capital Territory and Victoria, where rates were not calculated for numbers less than or equal to 5.

1. Classification of external-cause deaths may differ from state to state. The methodology section in this chapter provides further details.
2. In some jurisdictions, the Coroner is yet to determine the official cause of death for some cases and these deaths are not included in Tables 5, 6 or 7. In some instances these deaths have been included, but the data are based on general information regarding the circumstances of death. Hence, the overall numbers and rates are subject to change.
3. Refer to the methodology section for jurisdictional methodological differences and additional issues.
4. Rates are calculated per 100 000 children in each age category in each jurisdiction and use as a denominator the ERP as at 30 June 2017.
5. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event; and hence, have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

Figure 6: Rate of infant deaths (under 1 year) from SIDS and undetermined causes by jurisdiction 2017



Data source: Australian and New Zealand Child Death Review and Prevention Group (2019)

* Rates have not been calculated for numbers less than 4, except for the Australian Capital Territory and Victoria, where rates were not calculated for numbers less than or equal to 5.

1. Classification of external-cause deaths may differ from state to state. The methodology section in this chapter provides further details.
2. In some jurisdictions, the Coroner is yet to determine the official cause of death for some cases and these deaths are not included in Tables 5, 6 or 7. In some instances these deaths have been included, but the data are based on general information regarding the circumstances of death. Hence, the overall numbers and rates are subject to change.
3. Refer to the methodology section for jurisdictional methodological differences and additional issues.
4. Rates are calculated per 100 000 infants (children under one year) in each jurisdiction and use as a denominator the ERP as at 30 June 2017.
5. Caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event, and hence have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.

Of specific interest in the study of infant deaths are those certified as due to SIDS or where the cause of death cannot be determined.

SIDS is defined as follows:¹⁰

The sudden, unexpected death of an infant under one year of age, with onset of the fatal episode apparently occurring during sleep, that remains unexplained after a thorough investigation including performance of a complete autopsy and review of the circumstances of death and the clinical history.

¹⁰ Krous, HF, Beckwith, JB, Byard, RW, Rognum TO, Bajanowski, T, Corey, T, Cutz, E, Hanzlick, R, Keens, TG & Mitchell, EA 2004, 'Sudden infant death syndrome and unclassified sudden infant deaths: a definitional and diagnostic approach'. *Paediatrics*, 114(1), 234–238.

Infant deaths are certified as undetermined when:

- natural disease processes are detected that are not considered sufficient to cause death but preclude a diagnosis of SIDS
- there are signs of significant stress
- non-accidental but non-lethal injuries were present
- toxicology screening detects non-prescribed but non-lethal drugs.

In 2017, New Zealand had the highest rate of infant deaths from SIDS and undetermined causes (57.8 per 100 000), followed by Victoria (42.2 per 100 000). Queensland had the lowest rate of infant deaths from SIDS and undetermined causes (21.3 per 100 000).¹¹

Methodology

Data sources

Jurisdictional mortality statistics have been provided by the following member teams and committees of the ANZCDR&PG:

- New South Wales Child Death Review Team, NSW Ombudsman
- Victorian Consultative Council on Obstetric and Paediatric Mortality and Morbidity
- Queensland Family and Child Commission
- Ombudsman, Western Australia
- South Australian Child Death and Serious Injury Review Committee
- Tasmanian Council of Obstetric and Paediatric Mortality and Morbidity
- Australian Capital Territory Children and Young People Death Review Committee
- Northern Territory Child Deaths Review and Prevention Committee
- New Zealand Child and Youth and Perinatal and Maternal Mortality Review Committees.

Analysis period

The analysis covers deaths that occurred during the period 1 January 2017 to 31 December 2017.

Date of death and place of residence

All jurisdictions provided raw numbers of the deaths of all children from birth up to, but not including, 18 years of age occurring in 2017, independent of when these deaths were registered with the Registry of Births, Deaths and Marriages.

Recording deaths based on the jurisdiction in which they occurred can have an impact on rates of deaths. Rates of death in South Australia, for example, may be artificially inflated by the number of deaths of residents from surrounding areas of the Northern Territory occurring within South Australian boundaries. A similar situation is also known to occur between the Australian Capital Territory and New South Wales.

New Zealand data relates to the deaths of New Zealand residents (identified by usual place of residence, rather than legal status as a New Zealand resident) that occur within New Zealand.

Population data

The population figures used in the analysis are estimated resident populations (ERP) for each jurisdiction as at June 2017, except for Indigenous status which uses ERP as at June 2016. To ensure comparability of child death rates between jurisdictions, all rates have been calculated using these population data, and therefore may differ from those previously published in the reports of individual agencies.

¹¹ Comparative statements exclude jurisdictions where a rate could not be calculated.

It is important to note that caution should be exercised when comparing rates between jurisdictions. Although the rates are based on a population rather than a sample, common practice is to consider death a random event; and hence, have an associated sampling error. This is particularly important when comparing rates from low numbers. Current methodology calculates the crude rates for 2017 and should not be used to infer the general probability of death for specific cohorts.¹²

Tables 8 and 9 provide details of the child ERP of each jurisdiction as sourced from the ABS¹³ and Statistics New Zealand.¹⁴

Table 8: Estimated resident population by age category and jurisdiction, as at June 2017

Jurisdiction	Age category					Total
	Under 1 year	1–4 years	5–9 years	10–14 years	15–17 years	
New South Wales	98 195	404 131	504 469	466 351	273 998	1 747 144
Victoria	78 229	327 883	395 407	363 712	214 739	1 379 970
Queensland	61 150	256 172	333 462	315 704	185 779	1 152 267
Western Australia	34 749	139 037	170 770	157 662	91 366	593 584
South Australia	19 335	82 529	104 871	99 134	60 438	366 307
Tasmania	5 615	24 174	32 280	31 226	19 026	112 321
Australian Capital Territory	5 600	22 811	26 810	23 012	13 336	91 569
Northern Territory	3 899	15 235	18 487	16 201	9 200	63 022
New Zealand	60 570	245 400	326 340	301 360	186 510	1 120 180

Data source: ABS (2019); Statistics New Zealand (2019)

Table 9: Estimated resident population aged 0–17 years by sex and jurisdiction, as at June 2017

Jurisdiction	Sex	
	Female	Male
New South Wales	849 524	897 620
Victoria	671 390	708 580
Queensland	561 147	591 120
Western Australia	289 809	303 775
South Australia	178 610	187 697
Tasmania	54 275	58 046
Australian Capital Territory	44 271	47 298
Northern Territory	30 548	32 474
New Zealand	545 780	574 400

¹² Rates presented here are crude rates rather than adjusted rates as used in some jurisdictions and may also account for some differences between the rates published here and those published in other reports.

¹³ Australian Bureau of Statistics 2019, *Australian Demographic Statistics June 2017*, 'Tables 51-58: Estimated Resident Population by Single Year of Age, States and territories', time series spreadsheets, cat. no. 3101.0.

¹⁴ Statistics New Zealand 2019, *Estimated Resident Population by Age and Sex (1991+) (Annual-Jun 2017)*.

Data source: ABS (2019); Statistics New Zealand (2019)

Indigenous population data

Estimates for the Australian Aboriginal and Torres Strait Islander child population for each jurisdiction¹⁵ and the New Zealand Māori population¹⁶ as at June 2016 (June 2017 data were not available) were used to calculate Indigenous and non-Indigenous mortality rates. Estimates of the non-Indigenous child populations for each jurisdiction were obtained by subtracting the estimated Indigenous population from the overall child ERP. Table 10 provides these population estimates and the percentage of the child population identified as Indigenous.

Table 10: Estimated resident population aged 0–17 years by Indigenous status and jurisdiction, as at June 2016

Jurisdiction	Indigenous status		Indigenous %
	Indigenous children	Non-Indigenous children	
New South Wales	109 513	1 617 715	6.3%
Victoria	23 478	1 330 346	1.7%
Queensland	93 783	1 044 068	8.2%
Western Australia	39 779	549 089	6.8%
South Australia	17 274	348 348	4.7%
Tasmania	11 546	100 985	10.3%
Australian Capital Territory	2 843	86 547	3.2%
Northern Territory	26 365	36 304	42.1%
New Zealand	279 860	829 100	25.2%

Data source: ABS (2018); Statistics New Zealand (2017)

Challenges are faced in obtaining accurate population data for Indigenous people. Some jurisdictions also experience difficulty with the collection of Indigenous status in child death data. Problems in collecting Indigenous status data for death registrations may result in an undercount of Indigenous deaths, limiting the comparability of the data. Therefore, mortality rates for Indigenous and non-Indigenous children should be interpreted with caution.

Indigenous people constitute a greater proportion of the child population than found in the overall population. For example, Aboriginal and Torres Strait Islanders represent 4.6% of the overall Queensland population,^{17,18} but 8.2% of the child population. This is due to different age profiles for Indigenous populations, compared to non-Indigenous populations—contributing factors include different fertility patterns and life expectancies.

¹⁵ Australian Bureau of Statistics 2018, *Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001 to 2026*, 'Tables 1-8: Estimated and projected population, Aboriginal and Torres Strait Islander Australians, Series B, Single year of age, Australia, states and territories', data cube: Excel spreadsheet, cat. no. 3238.0.

¹⁶ Statistics New Zealand 2017, *Māori Population Estimates: At 30 June 2016*, Table 1: Total Māori estimated resident population, by single year of age, five-year age group, broad age group, and median age, 1991–2016.

¹⁷ Australian Bureau of Statistics 2019, *Australian Demographic Statistics, Dec 2018*, 'Table 53: Estimated Resident Population by single year of age, Queensland', data cube: Excel spreadsheet, cat. no. 3101.0.

¹⁸ Australian Bureau of Statistics 2019, *Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001 to 2031*, 'Table 3: Estimated and projected population, Aboriginal and Torres Strait Islander population, Series B(a), Single year of age, Queensland', data cube: Excel spreadsheet, cat. no. 3238.0.

Data extraction and methodological differences

To assist with comparative research regarding the prevention of child deaths, the ANZCDR&PG has agreed to report under a number of research categories based on the circumstances of death. These categories are diseases and morbid conditions (sometimes called natural causes of death) and the major external causes of death—transport, drowning, suicide, other non-intentional injury (accidental and fire-related deaths), and fatal assault and neglect.

However, it is important to recognise deaths are categorised by each particular agency as per their individual classification rules. In many cases, agencies have multiple sources of information available concerning children (including health, welfare and education records) and are not limited to the causes of death recorded in post-mortem reports or death certificates. Accordingly, a team or committee's classification for a particular death may vary from classifications within the World Health Organization's (WHO) International statistical classification of diseases and related health problems, tenth revision (ICD-10).

Individual jurisdictions noted the following:

- The QFCC normally include SIDS and undetermined causes within diseases and morbid conditions (classified as unexplained diseases and morbid conditions). For inter-jurisdictional comparability of data in this supplementary chapter, deaths from SIDS and undetermined causes have been excluded from deaths due to diseases and morbid conditions.
- The Victorian Consultative Council on Obstetric and Paediatric Mortality and Morbidity (CCOPMM) apply coding of neonatal (0–27 days) deaths according to PSANZ-PDC¹⁹ and PSANZ-NDC²⁰ rather than ICD-10. However, Victorian data provided by the Council for this chapter have been recoded into the ICD-10.
- Victorian figures exclude neonatal deaths as a result of terminations of pregnancy (for congenital anomaly or maternal psychosocial indication), and those born less than 20 weeks gestation, or, if the gestation is unknown, less than 400 grams birth weight.
- Victorian figures exclude deaths of Victorian residents that occurred interstate or overseas. The data will ordinarily only include all deaths of children occurring in Victoria regardless of their usual place of residence.
- We are grateful to CCOPMM for providing access to the de-identified data used for this project and for the assistance of the staff at the Consultative Councils Unit, Safer Care Victoria. The conclusions, findings, opinions and views or recommendations expressed in this paper are strictly those of the author(s). They do not necessarily reflect those of CCOPMM.
- South Australian figures do not include deaths of infants who were born spontaneously before 20 weeks gestation, or deaths of infants as a result of planned termination of pregnancy, irrespective of whether they showed signs of life after birth and irrespective of whether they were registered at Births, Deaths and Marriages as a live birth. The data presented here do not include cases pending a decision by the Coroner.
- The methodology for classification of external cause deaths by the South Australian Child Death and Serious Injury Review Committee is available in the Committee's Annual report at www.cdsirc.sa.gov.au, including a revision of the classification of fatal assault.
- In New Zealand, the ICD-10 code W75 (Accidental suffocation and strangulation in bed) has been used increasingly to code SUDI deaths. The coding schema for this chapter means that many of the New Zealand SUDI deaths are included in 'External causes', as 'Other non-intentional injury-related'.

A number of additional issues affecting data for particular jurisdictions should also be noted:

- Victoria data in these tables are taken from the CCOPMM held database and are also published in the Victoria's mothers, babies and children 2017 report, available at <http://bettersafecare.vic.gov.au/about-us/about-svc/councils/ccopmm/reports>.

¹⁹ Perinatal Society of Australia and New Zealand—Perinatal Death Classification.

²⁰ Perinatal Society of Australia and New Zealand—Neonatal Death Classification.

- To protect the confidentiality of the data, raw figures that are less than or equal to five (less than 10 for Aboriginal and/or Torres Strait Islander status) are suppressed throughout the analysis.
- Data are not available for Western Australia for all child deaths, deaths by Indigenous status, sex and deaths due to diseases and morbid conditions. Data for external causes and SIDS and undetermined causes are provided by the Ombudsman, Western Australia.
- The data provided by the Ombudsman Western Australia are based on the child death notification received by the Ombudsman which includes general information on the circumstances of death. This is an initial indication of how the child may have died but is not the cause of death, which can only be determined by the Western Australian Coroner.
- The Australian Capital Territory Children and Young People Death Review Committee does not specify raw figures where counts are less than 5. These are represented by the figure <5 throughout this chapter.
- Australian Capital Territory data do not include deaths of children and young people awaiting the Coroner's findings.

The New Zealand Child and Youth and Perinatal and Maternal Mortality Committees note that:

- Data are from the NZ Mortality Review Database, which collects and stores data for the Child and Youth, and Perinatal and Maternal Mortality Review Committees. The data are provisional.
- The Perinatal & Maternal Mortality Review Committee (PMMRC) apply coding of neonatal (0–27 days) deaths according to PSANZ-PDC and PSANZ-NDC rather than ICD-10. However, New Zealand data provided by PMMRC for this report have been recoded into the ICD-10.
- Data relate to deaths occurring in the age range of 20 weeks gestation (or birth weight 400 grams) up to but not including the 18th birthday and exclude stillbirths and terminations.
- There were 26 cases for whom no cause of death coding is available, and were therefore excluded from Tables 4, 5 and 6.
- Only deaths of New Zealand residents are included in these analyses (deaths of non-residents within New Zealand are excluded).
- Infant mortality is usually calculated using live births in New Zealand, so the infant mortality rates in this chapter will differ from official New Zealand statistics.

List of abbreviations

ABS	Australian Bureau of Statistics.
ANZCDR&PG	Australian and New Zealand Child Death Review and Prevention Group.
CCOPMM	Consultative Council on Obstetric and Paediatric Mortality and Morbidity, Victoria.
ERP	Estimated resident population.
ICD-10	International statistical classification of diseases and related health problems, tenth revision.
PMMRC	Perinatal & Maternal Mortality Review Committee, New Zealand.
PSANZ-NDC	Perinatal Society of Australia and New Zealand—Neonatal Death Classification.
PSANZ-PDC	Perinatal Society of Australia and New Zealand—Perinatal Death Classification.
QFCC	Queensland Family and Child Commission.
SIDS	Sudden Infant Death Syndrome.
WHO	World Health Organization.