

## Australian and New Zealand Child Death Review and Prevention Group

The Australian and New Zealand Child Death Review and Prevention Group (ANZCDR&PG) is a collaboration of all state and territory child death review teams across Australia and New Zealand. It was established in 2005, with an initial aim to develop national and international comparable child death statistics, and to better understand and prevent child deaths. The child death review functions within the jurisdictions have individual legislative bases, and differing functions, roles and reporting requirements.<sup>1</sup>

This paper presents information on child mortality from all eight Australian states/territories. (New Zealand data was not available at the time of reporting). The data has been provided, for the most part, by the ANZCDR&PG members.

The Queensland Family and Child Commission (QFCC) has prepared this paper on behalf of the ANZCDR&PG.

### Summary

Analysis of child deaths during 2019 has shown:

- Infants (children under one year) had the highest rates of child deaths in all jurisdictions, accounting for 60% of all child deaths in Australia.
- Child mortality rates were substantially lower after infancy, with the second highest mortality rates in young people aged 15–17 years.
- Child mortality rates varied between 14.2 and 54.9 per 100,000 population aged 0–17 years.
- Infant mortality rates varied between 2.4 and 6.1 per 1,000 live births.
- Indigenous child mortality rates were two to three times higher than the non-Indigenous child mortality rates.
- Deaths from diseases and morbid conditions accounted for 71.5% of all child deaths.
- Suicide was the leading external cause of death in New South Wales, Victoria, Queensland, and Western Australia.
- Rates of infant deaths from Sudden Infant Death Syndrome (SIDS) and undetermined causes ranged between 0.32 and 0.44 per 1,000 live births.

<sup>1</sup> Information on the ANZCDR&PG including links to member home pages can be found at <https://www.ombo.nsw.gov.au/what-we-do/coordinating-responsibilities/child-death-review-team/australian-and-new-zealand-child-death-review-and-prevention-group>



## Australian and New Zealand child death statistics 2019

The analysis covers deaths of children from birth up to, but not including, 18 years of age occurring during the period 1 January 2019 to 31 December 2019. For Australian jurisdictions, deaths were counted based on the jurisdiction in which they occurred, not the residency of the deceased child. For New Zealand, only deaths of New Zealand residents within New Zealand are included.<sup>2</sup>

Caution should be exercised when comparing rates between jurisdictions. Child deaths are rare events and variations in jurisdictional rates can be expected due to the small numbers involved. 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. Current methodology calculates the crude rates for 2019 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.

The data provided for the individual jurisdictions currently differs in some respects. These differences, along with the methodology used in compiling this report, are described in the Methodology section.

Detailed tables are provided in Appendix A.

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.

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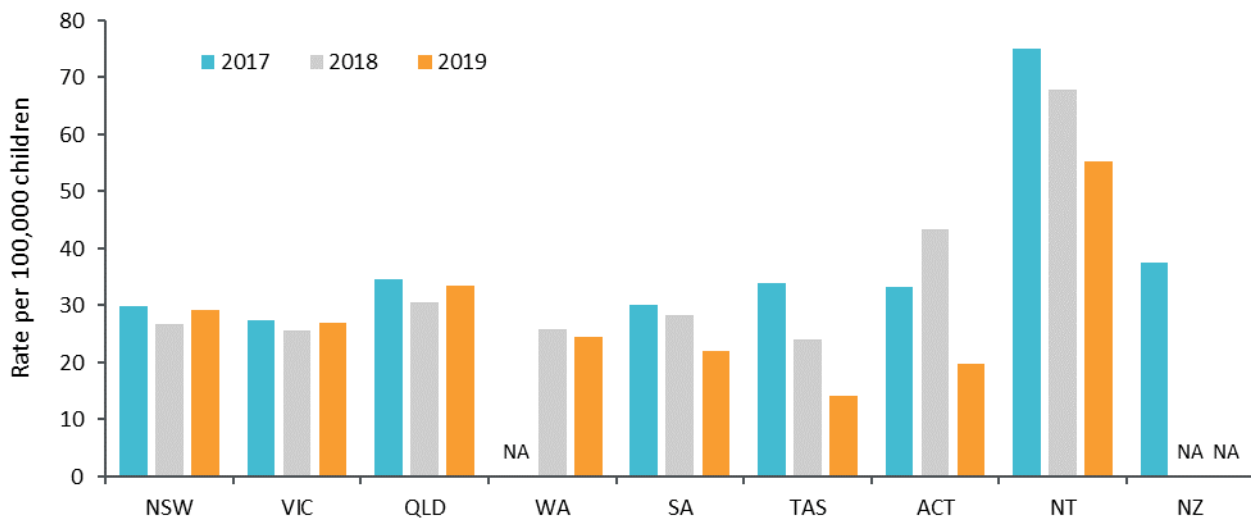
<sup>2</sup> New Zealand data was not available at the time of reporting.

## All child deaths

The mortality rates for all children (aged 0–17 years) in each jurisdiction are presented in Figure 1 for 2017, 2018 and 2019. Year to year changes should be interpreted with caution, especially for jurisdictions with smaller populations.

In 2019, infants (children under one year) had the highest rates of child deaths in all jurisdictions (Table A.1 in Appendix A). Infants accounted for 60% of all child deaths in Australia, varying between 44% (Tasmania) and 65% (Northern Territory). Child mortality rates were substantially lower after infancy. The second highest mortality rates were for young people aged 15–17 years in all jurisdictions.

**Figure 1: Rate of child deaths (aged 0–17 years) by jurisdiction 2017–2019**



Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

NA Not available at the time of reporting.

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 in the relevant year.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

## Indigenous status

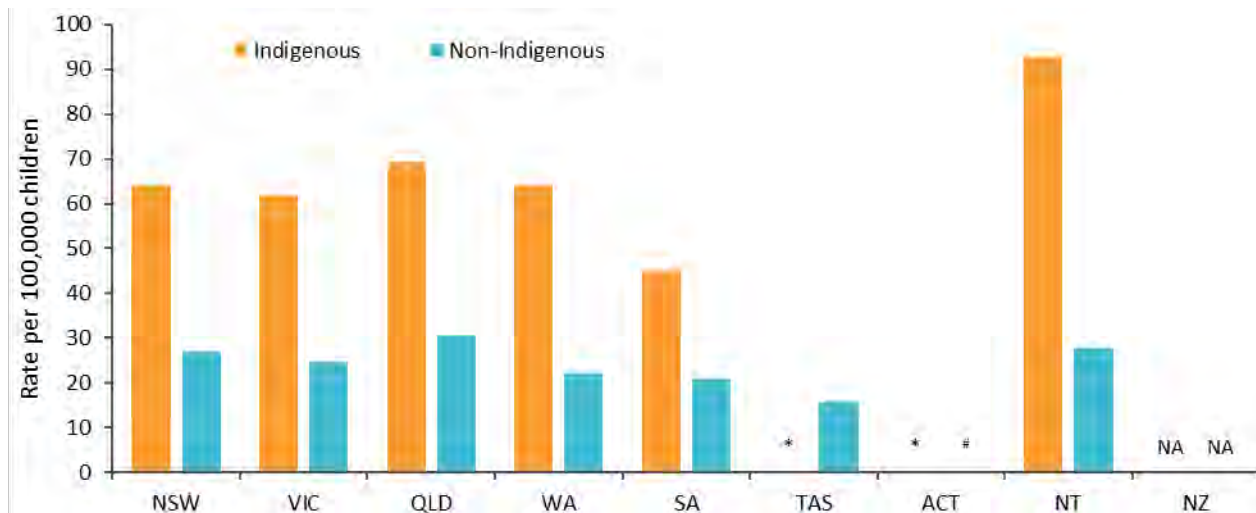
There is considerable variation between jurisdictions in the proportion of the population identified as Indigenous (Aboriginal and Torres Strait Islander in Australia or Māori in New Zealand), from 1.7% in Victoria to 41.8% in the Northern Territory. Table A.10 in the Methodology section provides the proportions for each jurisdiction.

Figure 2 presents Indigenous and non-Indigenous child mortality rates in each jurisdiction during 2019. Table A.2 (Appendix A) provides the corresponding numbers and rates in each jurisdiction.

It should be noted that, historically, the identification of Indigenous status on death registration forms was often incomplete or inaccurate, leading to an undercount of the actual numbers of deaths of Indigenous peoples. The identification of the deaths of Indigenous people has improved considerably in recent years; however, the extent of any continued under-reporting is not known and it is likely some undercount of the number of deaths registered as Indigenous continues. Some agencies providing the child death data access additional sources of information on Indigenous status, such as child protection, coronial and health records, which may reduce limitations in relying on a single source. Differences in sources available and in approaches taken to link the data may affect death data counted by Indigenous status, and the numbers and rates presented in this paper should therefore be interpreted with caution.

In 2019, 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 5.9% of the child population, yet accounted for 13.2% of the child deaths (212 of 1,605 deaths). The Indigenous rates were two to three times the non-Indigenous rates, with the rate ratios ranging between 2.2 (South Australia) and 3.3 (Northern Territory).

**Figure 2: Rate of child deaths (aged 0–17 years) by Indigenous status and jurisdiction 2019**



Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

\* Rates have not been calculated for numbers less than 4 or where small numbers have been confidentialised by the source jurisdiction.

# Value suppressed to prevent calculation of a confidentialised value.

NA Not available at the time of reporting.

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 2019.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

## Sex

Figure 3 provides the child mortality rates by sex in each jurisdiction during 2019. The numbers and rates by sex are also presented in Table A.3 in Appendix A.

In 2019, the child mortality rates for males were higher than the female rates in all jurisdictions. The male mortality rates were between 1.1 and 1.6 times the female mortality rates, excepting the Northern Territory where the male rate was 4.1 times the female rate.

**Figure 3: Rate of child deaths (aged 0–17 years) by sex and jurisdiction 2019**



Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

NA Not available at the time of reporting.

1. Excludes deaths with sex unknown/intersex/indeterminate in New South Wales (1), Queensland (1) and Northern Territory (2).
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 2019.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

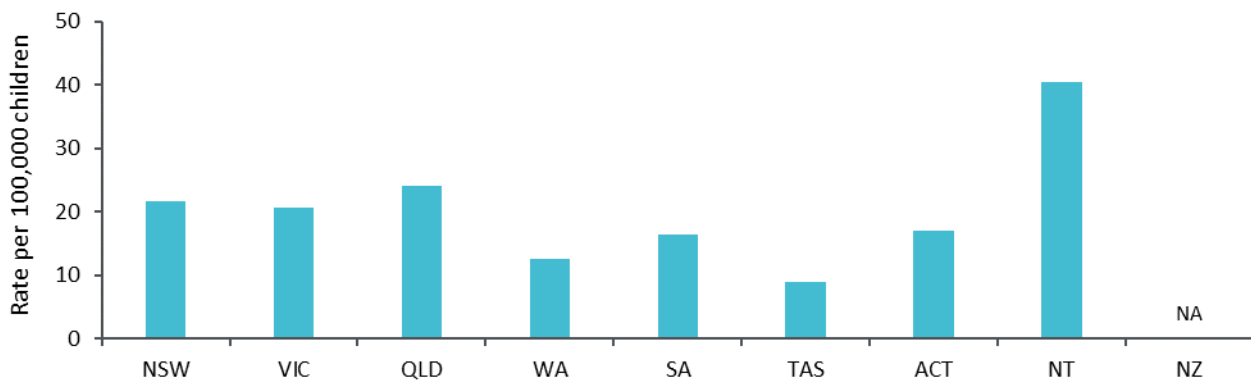
## Deaths from diseases and morbid conditions

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 (ICD-10 codes R95 and R99) which are presented in a subsequent section of this paper.

Figure 4 provides the child mortality rate from diseases and morbid conditions in each jurisdiction during 2019. The rates from diseases and morbid conditions ranged between 8.9 per 100,000 (Tasmania) and 40.4 per 100,000 (Northern Territory).

The mortality numbers and rates from diseases and morbid conditions by age category are provided in Table A.4 (Appendix A). Deaths from diseases and morbid conditions accounted for 71.5% of child deaths in 2019. Infants (children under one year) exhibited the highest mortality rate from diseases and morbid conditions in all jurisdictions in Australia.

**Figure 4: Rate of child deaths (aged 0–17 years) from diseases and morbid conditions by jurisdiction 2019**



Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

NA Not available at the time of reporting.

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 information by cause of death type. In some instances these deaths have been included on the basis of 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 2019.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

## External-cause deaths

External-cause deaths are those resulting from environmental events and circumstances causing injury, poisoning and other adverse effects. The child mortality rates from all external causes in each jurisdiction are also presented in Figure 5. The rates of death from external causes ranged between 3.3 per 100,000 (South Australia) and 12.9 per 100,000 (Northern Territory).

Table A.5 (Appendix A) provides the numbers and rates of child deaths from various external causes in each jurisdiction during 2019. Suicide was the leading external cause of death in New South Wales, Victoria, Queensland, and Western Australia. Transport was the leading external cause in South Australia.

**Figure 5: Rate of child deaths (aged 0–17 years) from external causes by jurisdiction 2019**



Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

\* Rates have not been calculated for numbers less than 4 or where small numbers have been confidentialised by the source jurisdiction.

NA Not available at the time of reporting.

1. Classification of external-cause deaths may differ from state to state. The methodology section in this report 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 information by cause of death type. In some instances these deaths have been included on the basis of 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 2019.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

## Deaths from SIDS and undetermined causes

Sudden Unexpected Death in Infancy (SUDI) is a term used to group together deaths of apparently well infants who would be expected to thrive, yet, for reasons often unknown, die suddenly and unexpectedly. Some deaths may be found to have an explained cause through post-mortem investigation (e.g. infant illness, sleep accident or inflicted injury).

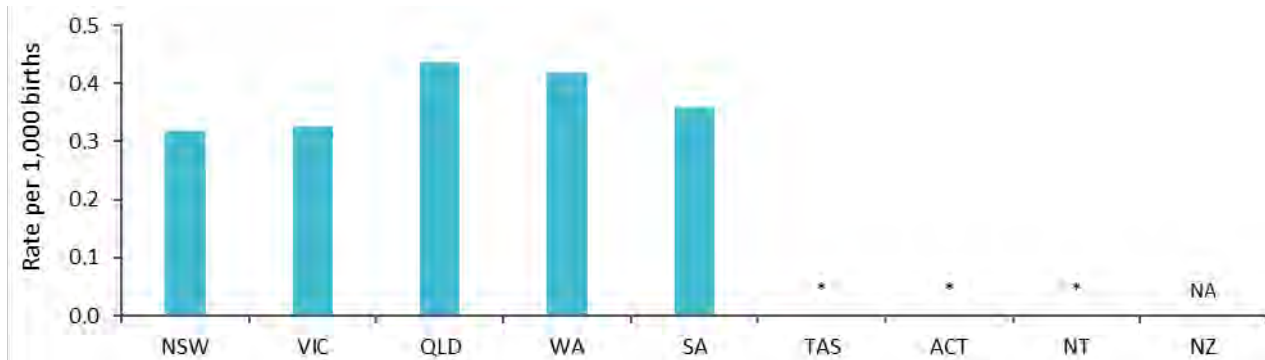
Deaths from Sudden Infant Death Syndrome (SIDS) and undetermined causes are a grouping where the cause of death remains unexplained after coronial investigations have been completed (causes with ICD-10 codes R95 and R99). SIDS is defined as:

*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.*<sup>3</sup>

Table A.6 (Appendix A) provides the numbers and rates of child deaths from SIDS and undetermined causes by age in each jurisdiction during 2019. Most of the deaths in this grouping were in infants aged under one year (82%).

Figure 6 presents the rates of infant death from SIDS and undetermined causes in each jurisdiction in 2019. The rates of unexplained infant deaths per 1,000 live births in 2019 ranged between 0.32 (New South Wales) and 0.44 (Queensland).

**Figure 6: Rate of infant deaths (under 1 year) from SIDS and undetermined causes by jurisdiction 2019**



Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

\* Rates have not been calculated for numbers less than 4 or where small numbers have been confidentialised by the source jurisdiction.

NA Not available at the time of reporting.

1. Classification of SIDS and undetermined-cause deaths may differ from state to state. The methodology section in this report 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 information by cause of death type. In some instances these deaths have been included on the basis of 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 1,000 live births in each jurisdiction in 2019.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

<sup>3</sup> 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', *Pediatrics*, 114:234–8, <https://doi.org/10.1542/peds.114.1.234>.

## 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 sudden unexpected death of an infant), or where an investigation has not been finalised by a coroner, deaths may be categorised as 'cause of death pending'. The numbers and rates by cause of death (i.e. Diseases and morbid conditions, External causes and SIDS and Undetermined causes) are therefore subject to change until further cause of death information is received. Table A.7 (Appendix A) provides the number of deaths where a cause had not yet been allocated at the time of reporting.

## 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 <https://www.ombo.nsw.gov.au/news-and-publications/publications/reports/child-death-review-team>
- Victorian Consultative Council on Obstetric and Paediatric Mortality and Morbidity <https://www.bettersafecare.vic.gov.au/publications>
- Queensland Family and Child Commission <https://www.qfcc.qld.gov.au/keeping-kids-more-safe/preventing-child-injury-death/child-death-reports-data>
- South Australian Child Death and Serious Injury Review Committee <https://cdsirc.sa.gov.au/annual-reports/>
- Tasmanian Council of Obstetric and Paediatric Mortality and Morbidity <https://www.health.tas.gov.au/about/corporate-and-industry-information/council-obstetric-and-paediatric-mortality-and-morbidity>
- Australian Capital Territory Children and Young People Death Review Committee <https://www.childdeathcommittee.act.gov.au/home>
- Northern Territory Child Deaths Review and Prevention Committee <https://justice.nt.gov.au/attorney-general-and-justice/committees-and-boards/child-deaths-review-and-prevention-committee>
- New Zealand Child and Youth Mortality Review Committee <https://www.hqsc.govt.nz/our-programmes/mrc/cymrc/>

The Department of Health, Western Australia, provided child mortality data for the jurisdiction.

### Analysis period


The analysis covers deaths that occurred during the period 1 January 2019 to 31 December 2019.

### Date of death and place of residence

Jurisdictions provided raw numbers of the deaths of all children from birth up to, but not including, 18 years of age occurring in 2019, independent of when these deaths were registered with the Registry of Births, Deaths and Marriages.

Data for the Australian states and territories relates to deaths occurring within the jurisdiction regardless of their usual place of residence. New Zealand data, however; 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.

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.

### Caution on comparability of calculated rates

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 2019 and should not be used to infer the general probability of death for specific cohorts.<sup>4</sup>

### Population data by age and sex

The population figures used in the analysis are estimated resident populations (ERP) for each jurisdiction as at June 2019 sourced from the Australian Bureau of Statistics and Statistics New Zealand (see Table A.8 for ERP by age and Table A.9 ERP by sex, within Appendix A).

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.

### Indigenous population data

Estimates for the Australian Aboriginal and Torres Strait Islander child population for each jurisdiction and the New Zealand Māori population as at June 2019 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 in 2019. Table A.10 (Appendix A) provides these population estimates, and the percentage of the child population identified as Indigenous.

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 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.

### Live births data

The data used as a denominator for the ‘under 1 year’ mortality rate, is the number of live births registered in each jurisdiction in the calendar year 2019. Using live births as the denominator for infant mortality is the internationally accepted standard. The data are provided in Table A.11 (Appendix A).

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<sup>4</sup> 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.

## 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), fatal assault and neglect. Additional to these is the grouping SIDS and undetermined causes (causes with ICD-10 codes R95 and R99).

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).

Most jurisdictions access multiple sources of information on Indigenous status to improve the quality of the data and reduce the limitations in relying on a single source. Sources available vary but can include birth and death registrations, coronial records, and child protection and patient records. Differences may also exist in approaches taken to link the data which may in turn affect death data counted by Indigenous status.

Further caveats and jurisdictional notes are listed below:

- Victoria data:
  - exclude neonatal deaths for those born less than 20 weeks gestation, or where gestational age is unknown, less than 400 grams birth weight
  - exclude neonatal deaths as a result of terminations of pregnancy (for congenital anomaly).
- South Australia data:
  - exclude deaths of infants born spontaneously before 20 weeks gestation
  - exclude neonatal deaths as a result of planned termination of pregnancy, irrespective of whether they showed signs of life after birth
  - do not include cases pending a decision by the Coroner.
- Australia Capital Territory data:
  - do not include cases pending a decision by the Coroner.
- Raw figures for Victoria and the Australian Capital Territory are suppressed for values less than 5 (represented as <5 in tables).
- Raw figures for Western Australia are suppressed for values less than 6 (represented in tables as <6).
- New Zealand data was not available at the time of reporting.

More detailed information on sources and methodologies may be found in the respective source agency publications on child death reviews within the jurisdictions. Links to the source agency websites can be found in the Data sources earlier in this report.

## Disclaimer

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.

## 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.

## More information

The QFCC is a member of the ANZCDR&PG and prepares this report on behalf of the ANZCDR&PG members. The QFCC's annual reports on child deaths in Queensland and the latest Australian states and territories and New Zealand child death statistics can be found at [www.qfcc.qld.gov.au/keeping-kids-more-safe/preventing-child-injury-death/child-death-reports-data/annual-report-6](http://www.qfcc.qld.gov.au/keeping-kids-more-safe/preventing-child-injury-death/child-death-reports-data/annual-report-6)

The QFCC works with researchers and government agencies to raise community awareness and develop prevention programs and policies, by identifying risk factors, trends and emerging safety hazards. The QFCC can provide detailed Queensland child death data to researchers and organisations at no cost. Email [child\\_death\\_prevention@qfcc.qld.gov.au](mailto:child_death_prevention@qfcc.qld.gov.au)

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## Appendix A Detailed tables

### Child death statistics 2019

Table A.1: Number and rate of child deaths by age and jurisdiction 2019

Jurisdiction		Age category					Total
		Under 1 year	1–4 years	5–9 years	10–14 years	15–17 years	
NSW	Number	330	45	38	47	61	521
	Rate per 1,000 births	3.4	–	–	–	–	–
	Rate per 100,000	–	11.3	7.4	9.6	22.3	29.4
VIC	Number	225	42	35	34	51	387
	Rate per 1,000 births	2.9	–	–	–	–	–
	Rate per 100,000	–	12.8	8.5	8.8	23.5	27.2
QLD	Number	249	45	25	26	52	397
	Rate per 1,000 births	4.0	–	–	–	–	–
	Rate per 100,000	–	17.6	7.4	7.7	27.8	33.7
WA	Number	81	20	12	17	20	150
	Rate per 1,000 births	2.4	–	–	–	–	–
	Rate per 100,000	–	14.3	6.9	10.2	22.0	24.9
SA	Number	40	14	6	10	11	81
	Rate per 1,000 births	2.0	–	–	–	–	–
	Rate per 100,000	–	17.4	5.6	9.7	18.4	22.0
TAS	Number	7	2	3	2	2	16
	Rate per 1,000 births	1.2	–	–	–	–	–
	Rate per 100,000	–	*	*	*	*	14.2
ACT	Number	9	<5	<5	<5	<5	19
	Rate per 1,000 births	4.1	–	–	–	–	–
	Rate per 100,000	–	*	*	*	*	20.1
NT	Number	22	1	5	2	4	34
	Rate per 1,000 births	6.1	–	–	–	–	–
	Rate per 100,000	–	*	27.6	*	43.8	54.9
NZ	Number	NA	NA	NA	NA	NA	NA
	Rate per 1,000 births	NA	–	–	–	–	–
	Rate per 100,000	–	NA	NA	NA	NA	NA

Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

\* Rates have not been calculated for numbers less than 4 or where small numbers are confidentialised by the source jurisdiction.

– Rate not applicable for this category.

NA Not available at the time of reporting.

1. Refer to the methodology section for jurisdictional methodological differences and additional issues.
2. Rates for under 1 year are calculated per 1,000 births and use as a denominator live births in each jurisdiction in 2019. Rates for all other age groups and the total are calculated per 100,000 children in each age category using the Estimated Resident Population (ERP) as at 30 June 2019.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

**Table A.2: Number and rate of child deaths (aged 0–17 years) by Indigenous status and jurisdiction 2019**

Jurisdiction		Indigenous status	
		Indigenous	Non-Indigenous
NSW	Number	72	449
	Rate per 100,000	64.1	27.0
VIC	Number	15	344
	Rate per 100,000	61.9	24.6
QLD	Number	67	330
	Rate per 100,000	69.3	30.5
WA	Number	26	124
	Rate per 100,000	64.1	22.0
SA	Number	8	73
	Rate per 100,000	45.0	20.8
TAS	Number	0	16
	Rate per 100,000	0.0	15.9
ACT	Number	<5	#
	Rate per 100,000	*	#
NT	Number	24	10
	Rate per 100,000	92.7	27.7
NZ	Number	NA	NA
	Rate per 100,000	NA	NA

Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

\* Rates have not been calculated for numbers less than 4 or where small numbers are confidentialised by the source jurisdiction.

# Value suppressed to prevent calculation of a confidentialised value.

NA Not available at the time of reporting (New Zealand).

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 2019.
3. Victorian data excludes 28 with Indigenous status unknown.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

**Table A.3: Number and rate of child deaths (aged 0–17 years) by sex and jurisdiction 2019**

Jurisdiction		Sex	
		Female	Male
NSW	Number	222	298
	Rate per 100,000	25.8	32.7
VIC	Number	144	243
	Rate per 100,000	20.8	33.3
QLD	Number	181	215
	Rate per 100,000	31.6	35.6
WA	Number	70	80
	Rate per 100,000	23.8	25.9
SA	Number	36	45
	Rate per 100,000	20.1	23.8
TAS	Number	6	10
	Rate per 100,000	11.0	17.2
ACT	Number	8	11
	Rate per 100,000	17.5	22.5
NT	Number	6	26
	Rate per 100,000	20.0	81.3
NZ	Number	NA	NA
	Rate per 100,000	NA	NA

Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

NA Not available at the time of reporting (New Zealand).

In addition deaths were recorded as sex indeterminate/unknown in New South Wales (1), Queensland (1) and Northern Territory (2).

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

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 2019.

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 2019 and should not be used to infer the general probability of death for specific cohorts.

**Table A.4: Number and rate of child deaths from diseases and morbid conditions by age and jurisdiction 2019**

Jurisdiction		Age category					Total
		Under 1 year	1–4 years	5–9 years	10–14 years	15–17 years	
NSW	Number	279	25	28	29	23	<b>384</b>
	Rate per 1,000 births	2.9	–	–	–	–	–
	Rate per 100,000	–	6.3	5.5	5.9	8.4	<b>21.7</b>
VIC	Number	196	31	32	20	15	<b>294</b>
	Rate per 1,000 births	2.5	–	–	–	–	–
	Rate per 100,000	–	9.4	7.8	5.2	6.9	<b>20.7</b>
QLD	Number	220	19	13	17	14	<b>283</b>
	Rate per 1,000 births	3.6	–	–	–	–	–
	Rate per 100,000	–	7.9	3.8	5.1	7.5	<b>24.0</b>
WA	Number	49	11	<6	7	<6	<b>76</b>
	Rate per 1,000 births	1.5	–	–	–	–	–
	Rate per 100,000	–	7.9	*	4.2	*	<b>12.6</b>
SA	Number	31	9	4	9	7	<b>60</b>
	Rate per 1,000 births	1.6	–	–	–	–	–
	Rate per 100,000	–	11.2	3.8	8.7	11.7	<b>16.3</b>
TAS	Number	5	2	1	2	0	<b>10</b>
	Rate per 1,000 births	0.9	–	–	–	–	–
	Rate per 100,000	–	*	*	*	0.0	<b>8.9</b>
ACT	Number	8	<5	<5	<5	<5	<b>16</b>
	Rate per 1,000 births	1.3	–	–	–	–	–
	Rate per 100,000	–	*	*	*	*	<b>16.9</b>
NT	Number	21	0	2	0	2	<b>25</b>
	Rate per 1,000 births	5.8	–	–	–	–	–
	Rate per 100,000	–	0.0	*	0.0	*	<b>40.4</b>
NZ	Number	NA	NA	NA	NA	NA	<b>NA</b>
	Rate per 1,000 births	NA	–	–	–	–	–
	Rate per 100,000	–	NA	NA	NA	NA	<b>NA</b>

Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

\* Rates have not been calculated for numbers less than 4 or where small numbers are confidentialised by the source jurisdiction.

– Rate not applicable for this category.

NA Not available at the time of reporting (New Zealand).

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 information by cause of death type. In some instances these deaths have been included on the basis of 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 for under 1 year are calculated per 1,000 births and use as a denominator live births in each jurisdiction in 2019. Rates for all other age groups and the total are calculated per 100,000 children in each age category using the Estimated Resident Population (ERP) as at 30 June 2019.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

**Table A.5: Number and rate of child deaths (aged 0–17 years) from external causes by jurisdiction 2019**

Jurisdiction		Cause of death					Total
		Transport-related	Drowning	Other non-intentional injury-related	Suicide	Fatal assault and neglect	
NSW	Number	22	7	16	28	8	<b>81</b>
	Rate per 100,000	1.2	0.4	0.9	1.6	0.5	<b>4.6</b>
VIC	Number	18	<5	10	24	5	<b>57</b>
	Rate per 100,000	1.3	*	0.7	1.7	0.4	<b>4.0</b>
QLD	Number	21	18	6	24	9	<b>78</b>
	Rate per 100,000	1.8	1.5	0.5	2.0	0.8	<b>6.6</b>
WA	Number	11	<6	<6	16	<6	<b>35</b>
	Rate per 100,000	1.8	*	*	2.7	*	<b>5.8</b>
SA	Number	6	2	1	1	2	<b>12</b>
	Rate per 100,000	1.6	*	*	*	*	<b>3.3</b>
TAS	Number	3	0	0	1	0	<b>4</b>
	Rate per 100,000	*	0.0	0.0	*	0.0	<b>3.6</b>
ACT	Number	0	0	0	<5	0	<b>&lt;5</b>
	Rate per 100,000	0.0	0.0	0.0	*	0.0	<b>*</b>
NT	Number	3	1	2	2	0	<b>8</b>
	Rate per 100,000	*	*	*	*	0.0	<b>12.9</b>
NZ	Number	NA	NA	NA	NA	NA	<b>NA</b>
	Rate per 100,000	NA	NA	NA	NA	NA	<b>NA</b>

Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

\* Rates have not been calculated for numbers less than 4 or where small numbers are confidentialised by the source jurisdiction.

NA Not available at the time of reporting (New Zealand).

1. Classification of external-cause deaths may differ from state to state. The methodology section in this report 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 information by cause of death type. In some instances these deaths have been included on the basis of 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 2019.
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 2019 and should not be used to infer the general probability of death for specific cohorts.

**Table A.6: Number and rate of child deaths from SIDS and undetermined causes by age and jurisdiction 2019**

Jurisdiction		Age category		Total
		Under 1 year	1–17 years	
NSW	Number	31	3	<b>34</b>
	Rate per 1,000 births	0.32	–	–
	Rate per 100,000	–	*	<b>1.9</b>
VIC	Number	26	8	<b>34</b>
	Rate per 1,000 births	0.33	–	–
	Rate per 100,000	–	0.6	<b>2.4</b>
QLD	Number	27	8	<b>35</b>
	Rate per 1,000 births	0.44	–	–
	Rate per 100,000	–	0.7	<b>3.0</b>
WA	Number	14	4	<b>18</b>
	Rate per 1,000 births	0.42	–	–
	Rate per 100,000	–	0.7	<b>3.0</b>
SA	Number	7	0	<b>7</b>
	Rate per 1,000 births	0.36	–	–
	Rate per 100,000	–	0.0	<b>1.9</b>
TAS	Number	2	0	<b>2</b>
	Rate per 1,000 births	*	–	–
	Rate per 100,000	–	0.0	<b>*</b>
ACT	Number	<5	<5	<b>&lt;5</b>
	Rate per 1,000 births	*	–	–
	Rate per 100,000	–	*	<b>*</b>
NT	Number	1	0	<b>1</b>
	Rate per 1,000 births	*	–	–
	Rate per 100,000	–	0.0	<b>*</b>
NZ	Number	NA	NA	<b>NA</b>
	Rate per 1,000 births	NA	–	–
	Rate per 100,000	–	NA	<b>NA</b>

Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)

\* Rates have not been calculated for numbers less than 4 or where small numbers are confidentialised by the source jurisdiction.

– Rate not applicable for this category.

NA Not available at the time of reporting (New Zealand).

1. Classification of SIDS and undetermined-cause deaths may differ from state to state. The methodology section in this report 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 information by cause of death type. In some instances these deaths have been included on the basis of 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 1,000 births in 2019 (for deaths under 1 year) and per 100,000 ERP as at 30 June 2019 in each jurisdiction (for 1–17 years and total).
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 2019 and should not be used to infer the general probability of death for specific cohorts.

**Table A.7: Number child deaths pending a cause of death by jurisdiction 2019**

Jurisdiction		Case status		Total
		Cause of death allocated	Cause of death pending	
NSW	Number	499	22	<b>521</b>
VIC	Number	387	0	<b>387</b>
QLD	Number	396	1	<b>397</b>
WA	Number	129	21	<b>150</b>
SA	Number	79	2	<b>81</b>
TAS	Number	16	0	<b>16</b>
ACT	Number	19	0	<b>19</b>
NT	Number	34	0	<b>34</b>
NZ	Number	NA	NA	<b>NA</b>

Data source: Australian and New Zealand Child Death Review and Prevention Group; Western Australia Department of Health (2021)  
 NA Not available at the time of reporting (New Zealand).

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

## Population data

**Table A.8: Estimated resident population by age category and jurisdiction, as at June 2019**

Jurisdiction	Age category					Total
	Under 1 year	1–4 years	5–9 years	10–14 years	15–17 years	
<b>New South Wales</b>	98,436	399,838	511,342	489,448	273,225	<b>1,772,289</b>
<b>Victoria</b>	77,660	328,433	411,385	386,057	217,413	<b>1,420,948</b>
<b>Queensland</b>	61,021	255,082	338,239	335,989	186,871	<b>1,177,202</b>
<b>Western Australia</b>	33,187	139,578	173,227	166,114	91,025	<b>603,131</b>
<b>South Australia</b>	18,887	80,536	105,898	103,406	59,640	<b>368,367</b>
<b>Tasmania</b>	5,548	23,735	31,789	33,000	18,410	<b>112,482</b>
<b>Australian Capital Territory</b>	5,332	22,676	28,312	24,875	13,520	<b>94,715</b>
<b>Northern Territory</b>	3,593	14,470	18,089	16,669	9,130	<b>61,951</b>
<b>New Zealand</b>	59,280	246,060	328,110	317,890	187,250	<b>1,138,590</b>

Data source: Australian Bureau of Statistics (March 2021), 'Estimated Resident Population By Single Year Of Age' (Tables 51-58 for each state/territory) [time series spreadsheet], [National, state and territory population](#), accessed 19 November 2021; Statistics New Zealand (2021), 'Estimated Resident Population by Age and Sex (1991+) (Annual-Jun)' [dataset], [Stats NZ Infoshare](#), accessed 19 November 2021.

**Table A.9: Estimated resident population aged 0–17 years by sex and jurisdiction, as at June 2019**

Jurisdiction	Sex	
	Female	Male
<b>New South Wales</b>	861,465	910,824
<b>Victoria</b>	690,893	730,055
<b>Queensland</b>	573,203	603,999
<b>Western Australia</b>	294,049	309,082
<b>South Australia</b>	179,488	188,879
<b>Tasmania</b>	54,492	57,990
<b>Australian Capital Territory</b>	45,747	48,968
<b>Northern Territory</b>	29,959	31,992
<b>New Zealand</b>	553,850	584,750

Data source: Australian Bureau of Statistics (March 2021), 'Estimated Resident Population By Single Year Of Age' (Tables 51-58) [time series spreadsheets], [National, state and territory population](#), accessed 19 November 2021; Statistics New Zealand (2021), 'Estimated Resident Population by Age and Sex (1991+) (Annual-Jun)' [dataset], [Stats NZ Infoshare](#), accessed 19 November 2021.

**Table A.10: Estimated resident population aged 0–17 years by Indigenous status and jurisdiction, as at June 2019**

Jurisdiction	Indigenous status		Indigenous %
	Indigenous children	Non-Indigenous children	
<b>New South Wales</b>	112,241	1,660,048	<b>6.3%</b>
<b>Victoria</b>	24,252	1,396,696	<b>1.7%</b>
<b>Queensland</b>	96,678	1,080,524	<b>8.2%</b>
<b>Western Australia</b>	40,544	562,587	<b>6.7%</b>
<b>South Australia</b>	17,759	350,608	<b>4.8%</b>
<b>Tasmania</b>	11,563	100,666	<b>10.3%</b>
<b>Australian Capital Territory</b>	2,904	91,811	<b>3.1%</b>
<b>Northern Territory</b>	25,883	36,068	<b>41.8%</b>
<b>New Zealand</b>	305,110	833,480	<b>26.8%</b>

Data source: Australian Bureau of Statistics (July 2021) 'Estimated resident and projected population, Aboriginal and Torres Strait Islander Australians, Series B, Single year of age, Australia, states and territories, 2006 to 2031' (Tables 5.1-5.9) [dataset] [Estimates and Projections, Aboriginal and Torres Strait Islander Australians](#), accessed 11 November 2021; Statistics New Zealand (2021), 'Māori Ethnic Group Estimated Resident Population by Age and Sex (1991+) (Annual-Jun)' [dataset], [Stats NZ Infoshare](#), accessed 19 November 2021.

**Table A.11: Live births by jurisdiction, 2019**

Jurisdiction	Births
New South Wales	96,909
Victoria	78,463
Queensland	61,795
Western Australia	33,510
South Australia	19,526
Tasmania	5,716
Australian Capital Territory	6,300
Northern Territory	3,613
New Zealand	59,637

Data source: Australian Bureau of Statistics (Dec 2020) 'Births registered by state and territory' [dataset], [Births, Australia](#), accessed 22 November 2021; Statistics New Zealand (Aug 2021), 'Population summary figures' [dataset], [Population](#), accessed 22 November 2021.