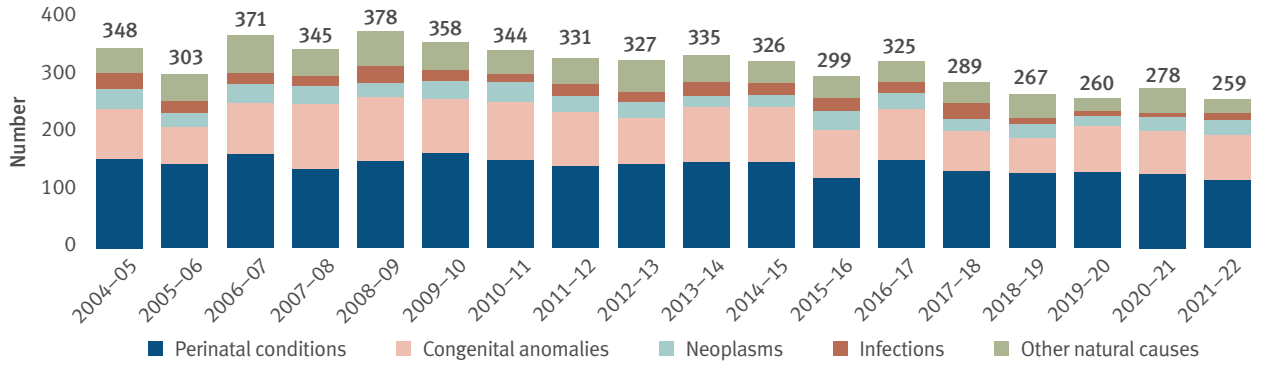
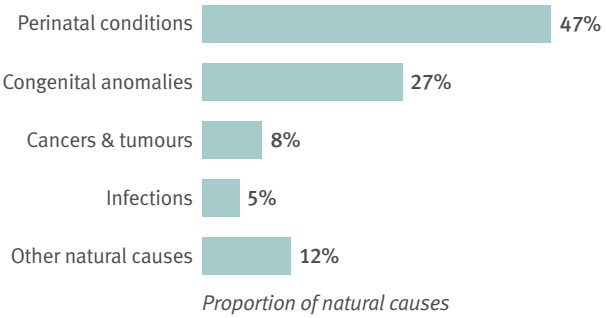
2 Deaths from natural causes

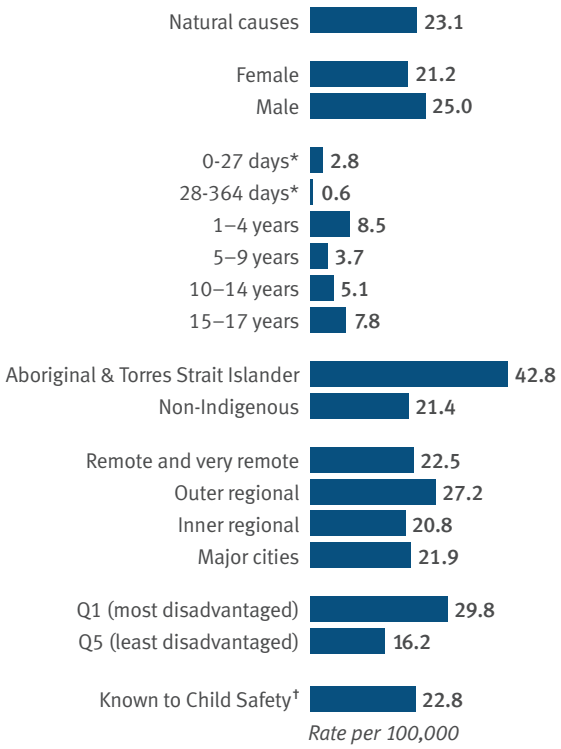
2004 to 2022



5-year summary (2017–22) | Cause of death category



Demographics



Leading natural causes by age

0–27 days	**Perinatal conditions** 1.9 per 1,000 births
28–364 days	**Congenital anomalies** 0.2 per 1,000 births
1–4 years	**Cancers & tumours; Congenital anomalies** 1.7 per 100,000
5–9 years	**Cancers & tumours** 1.5 per 100,000
10–14 years	**Cancers & tumours** 2.1 per 100,000
15–17 years	**Cancers & tumours** 2.2 per 100,000

Notes: Counting is by date of death registration. Percentages may not add to 100 due to rounding.
** rate per 1,000 births.*
† in the 12 months prior to death.

Key findings

In 2021–22, 259 children and young people died from natural causes (diseases and morbid conditions). The mortality rate for natural causes was 23.1 deaths per 100,000 children aged 0–17 years (5-year average).[22,23]

There has been a downward trend in child deaths from natural causes, with the mortality rate decreasing from 35.3 per 100,000 in 2004–09 to 23.1 per 100,000 in 2017–22 (a decrease of 3.2% per year on average). The majority of child deaths each year are from natural causes. Natural causes have accounted for 69% of all child deaths over the past 5 years.

Perinatal conditions and congenital anomalies were the most common natural causes in 2021–22 (118 and 78 deaths respectively). Together, these causes accounted for 76% of all deaths from natural causes.

Appendix A, **Table A.4** provides summary data and key characteristics for deaths from natural causes.

Classification of causes of death using ICD-10

The QFCC uses the ***International statistical classification of diseases and related health problems***, tenth revision (ICD-10) to classify causes of death.[24] The ICD-10 chapters and codes form the major groups and sub-groups of diseases and conditions in reporting on deaths from natural causes.

Sex

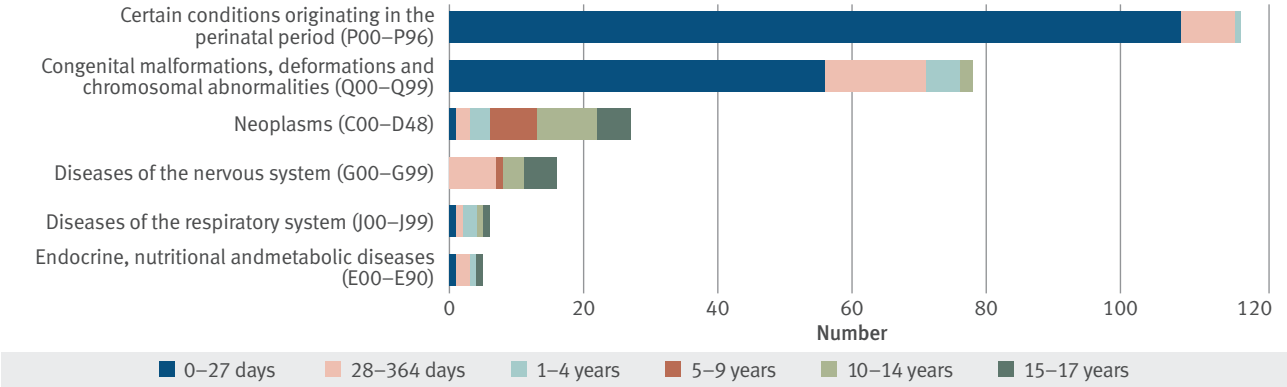
Child mortality from natural causes is marginally higher for males than females. The male mortality rate over the last 18 years is 1.2 times the rate for females (31.8 deaths per 100,000 male children and 26.9 deaths per 100,000 female children). In 2021–22, 133 male children died of natural causes, a rate of 24.9 per 100,000 (5-year averages). This compares with 124 female deaths, a rate 21.2 per 100,000 (5-year averages).

Age

Figure 2.1 illustrates the types of natural cause deaths for each age category in 2021–22. The following findings were evident:

- almost all natural causes of death for infants (under 1 year) were from perinatal conditions and congenital anomalies (93% of all natural causes within this age group)
- neoplasms (cancers and tumours) were the primary natural cause for children aged 5–9 years, 10–14 years and 15–17 years.
- congenital anomalies were the primary natural cause for children aged 1–4 years.

Figure 2.1: Deaths from natural causes by ICD-10 chapter and age (number), 2021–22



Notes: Excludes causes where the total number of deaths was less than 4.

22 Deaths are reported as explained diseases and morbid conditions only. Deaths from unexplained causes are included in **Chapter 8**.

23 Tables with data for 2004–22 are available online at **www.qfcc.qld.gov.au/about-us/publications/child-death-reports-and-data**

24 **www.who.int/standards/classifications/classification-of-diseases**

Neonatal and post-neonatal infants

Most child deaths from natural causes occur in the first year, most within the first days and weeks of life. Table 2.1 shows the age and causes of infant deaths in major groups in the last 5 years, across the neonatal and post-neonatal periods.

Neonatal period (0–27 days)

Neonatal deaths are those occurring in the first 28 days after birth (0–27 days). Of the 1,027 infant deaths due to natural causes in the last 5 years, 82% occurred in the neonatal period. Of the 845 neonatal deaths, 61% occurred on the day of birth and a further 19% had occurred by the end of the first week.

The two leading causes—perinatal conditions (585 deaths) and congenital anomalies (238 deaths)—represent 97% of the neonatal deaths from natural causes.

Post-neonatal period (28–364 days)

Post-neonatal deaths occur during the remainder of the first year (28–364 days). During the last 5 years, there were 182 deaths from natural causes during the post-neonatal period. The leading cause of death from natural causes in the post-neonatal period was congenital anomalies (73 deaths or 40%).[25]

Table 2.1: Age and cause of infant deaths from natural causes (number), 2017–18 to 2021–22

Age		Cause of death			Total
		Perinatal conditions (P00–P96)	Congenital anomalies (Q00–Q99)	Other diseases and morbid conditions[a]	
Neonatal (age in days)	<1	354	160	4	518
	1–6	114	46	4	164
	7–27	117	32	14	163
Neonatal total		**585**	**238**	**22**	**845**
Post-neonatal (age in months)	1*	30	21	11	62
	2	7	13	12	32
	3	1	8	8	17
	4	2	11	5	18
	5	4	3	3	10
	6	2	5	7	14
	7	0	6	6	12
	8	1	2	1	4
	9	0	1	3	4
	10	1	2	2	5
	11	2	1	1	4
Post-neonatal total		**50**	**73**	**59**	**182**
Total infants		**635**	**311**	**81**	**1,027**

* *28 days to <2 months.*

a *Includes neoplasms (C00–D48); diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50–D89); endocrine, nutritional and metabolic diseases (E00–E90); diseases of the nervous system (G00–G99); diseases of the circulatory system (I00–I99); diseases of the respiratory system (J00–J99); symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00–R99).*

25 The leading cause of death in the post-neonatal period was SIDS and undetermined causes, see Table 1.1.

Major causes

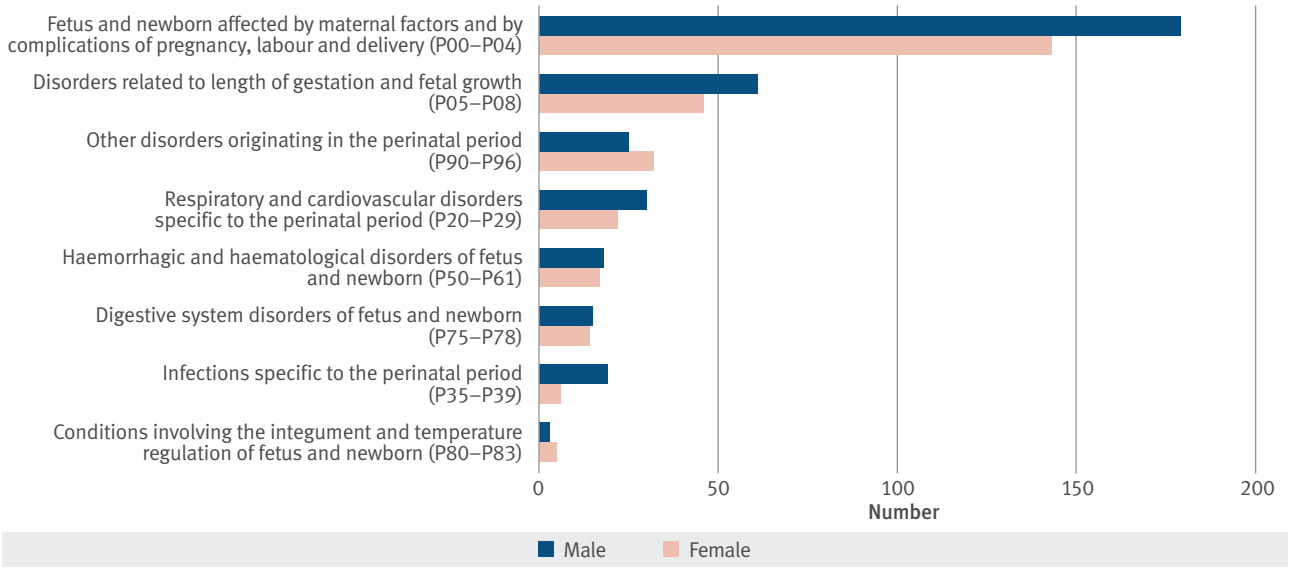
Perinatal conditions

Perinatal conditions are diseases and conditions which originate during pregnancy or the neonatal period (first 28 days of life), even though death or morbidity may occur later. Perinatal conditions include maternal conditions which affect the newborn, such as complications of labour and delivery, disorders relating to fetal growth, length of gestation and birth weight, as well as disorders specific to the perinatal period such as respiratory and cardiovascular disorders, infections, and endocrine and metabolic disorders.

During 2021–22, there were 118 child deaths from perinatal conditions, at a mortality rate of 11.0 deaths per 100,000 children aged 0–17 years (5-year average). Perinatal conditions were the leading cause of death for infants (under 1 year).

As shown in Figure 2.2, over the past 5 years the majority of deaths due to perinatal conditions resulted from the fetus and/or newborn being affected by maternal factors or complications of pregnancy, labour and delivery (50%, 323 deaths), followed by disorders related to the length of gestation and fetal growth (17%, 107 deaths). Together, these causes accounted for 67% of all deaths due to perinatal conditions (430 of 642 deaths).[26]

Figure 2.2: Deaths due to perinatal conditions by sex (number), 2017–18 to 2021–22



Notes: Excludes causes where the total number of deaths was less than 4.

Congenital anomalies

Congenital anomalies are mental and physical conditions present at birth which are either hereditary or caused by environmental factors.[27]

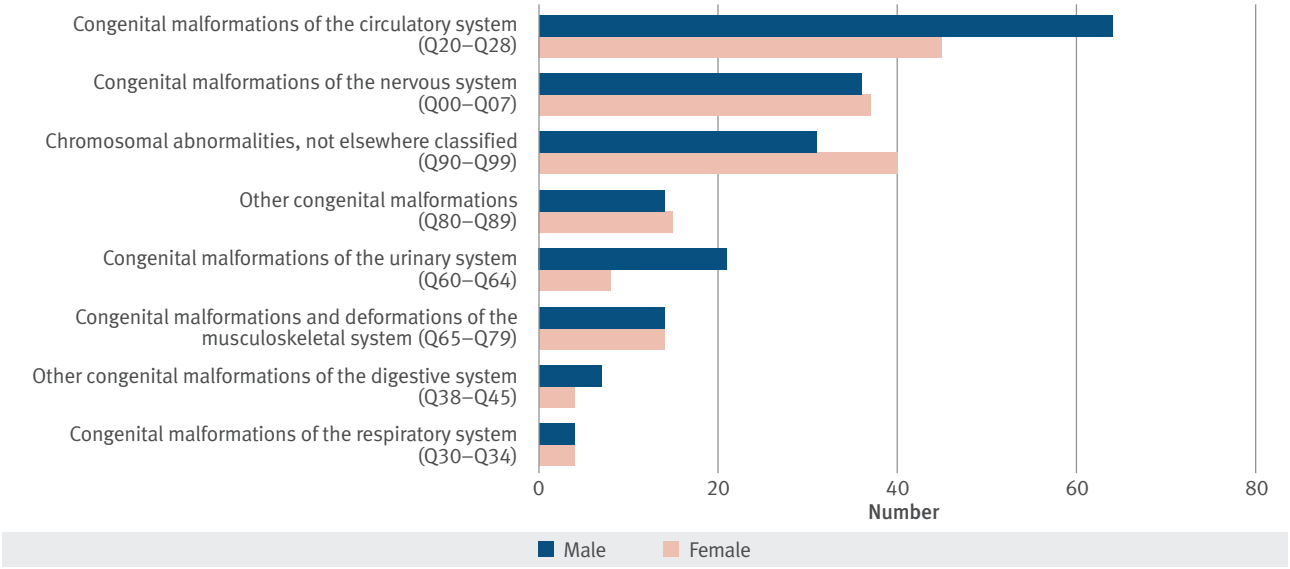
During 2021–22, there were 78 child deaths from congenital anomalies, at a 5-year average rate of 6.2 deaths per 100,000 children aged 0–17 years.

As shown in Figure 2.3, over the last 5 years the leading causes of death due to congenital anomalies were malformations of the circulatory system (30%, 109 deaths) and congenital malformations of the nervous system (20%, 74 deaths).

26 Noting a small number of deaths from perinatal conditions occur in children aged 1 year and over.

27 ICD-10 Chapter XVII, Congenital malformations, deformations and chromosomal abnormalities.

Figure 2.3: Deaths due to congenital anomalies by sex (number), 2017–18 to 2021–22



Notes: Excludes causes where the total number of deaths was less than 4.

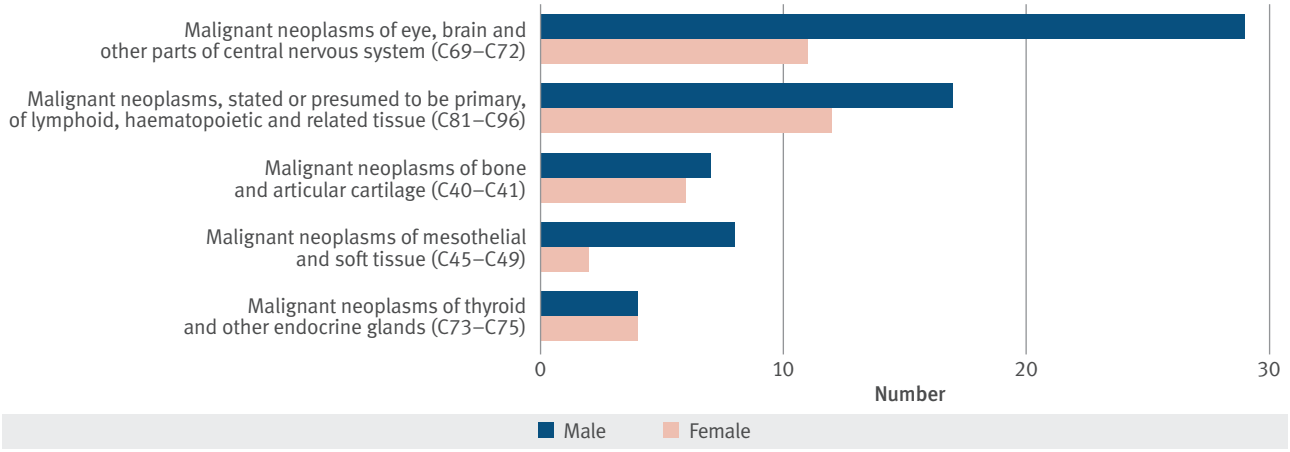
Neoplasms (cancers and tumours)

The term 'neoplasm' is often used interchangeably with the words 'tumour' and 'cancer'.[28]

Twenty-seven children and young people died from neoplasms in 2021–22, at a 5-year average rate of 1.9 deaths per 100,000 children aged 0–17 years. Neoplasms was the leading cause of death (all causes) for ages 5–9 and 10–14 years.

Over the last 5 years 114 children lost their lives to cancers and tumours. As illustrated in Figure 2.4 the most common types were neoplasms of the eye, brain and other parts of the central nervous system (40 deaths or 35%), followed by malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (29 deaths or 25%). Neoplasms was the leading cause of death (of all causes) for children aged 5–9 and 10–14 years, as noted in **Chapter 1**.

Figure 2.4: Deaths due to neoplasms (number), 2017–18 to 2021–22



Notes: Excludes causes where the total number of deaths was less than 4.

28 ICD-10 Chapter II, Neoplasms.

Infections

'Infections' is a hybrid category composed of certain infections and parasitic diseases, diseases of the nervous system and diseases of the respiratory system.[29]

Eleven children died from infections in 2021–22. Over the last 5 years 67 children and young people died from infections. The highest number of infections were caused by influenza and pneumonia (21 deaths or 31%).[30]

Deaths from notifiable conditions

There are national and local public health legislation requirements for health practitioners to notify public health authorities of certain diseases in Australia.[31] Key factors considered when deciding if a condition should be notifiable include the overall impact of the disease on morbidity and mortality, potential for control, demonstrated public health concern and the availability of control measures. Notification allows authorities to detect outbreaks early and take rapid public health action, if necessary, and to plan and monitor these efforts. It also provides information on the occurrence of disease.

Thirty-one children and young people died from a notifiable condition over the latest 5-year period as shown in Table 2.2. Twenty-one (68%) of the 31 deaths due to notifiable conditions were the result of potentially vaccine-preventable conditions, with the most common of these being invasive pneumococcal disease, influenza and invasive meningococcal disease.[32,33]

COVID-19 was added to Queensland's Schedule of Notifiable Conditions in the *Public Health Regulation 2018* in January 2020. There were 2 child deaths due to coronavirus (COVID-19) during the 5-year reporting period.[34]

Table 2.2: Deaths with notifiable conditions as underlying cause (number), 2017–18 to 2021–22

Notifiable condition	Total
Pneumococcal disease (invasive)^	7
Invasive group A streptococcal infection	6
Influenza^	5
Meningococcal disease (invasive)^	4
Melioidosis	3
Coronavirus (COVID-19)^	2
Salmonellosis	2
Haemophilus influenzae type b infection (invasive)^	1
Tuberculosis	1
Total	**31**

^ *Potentially vaccine-preventable condition. Vaccines are available for selected strains of meningococcal, coronavirus (COVID-19), seasonal influenza and selected serotypes of pneumococcal disease. Serotyping information in relation to coronavirus (COVID-19), influenza, meningococcal and pneumococcal-related deaths is not available to the QFCC, and so deaths are reported as being potentially vaccine-preventable only.*

Notes: Includes 4 deaths where the usual residence was outside of Queensland. The child deaths with notifiable conditions in this report may differ from communicable disease reports which use date of notification or date of onset of disease to define the reporting period. The deaths reported by QFCC use date of death registration to define the reporting period, which may occur sometime after the notification of disease.

29 ICD-10 references: Chapter I, Certain infectious and parasitic diseases; Chapter VI, Diseases of the nervous system, codes G00–G09 only; Chapter X, Diseases of the respiratory system, codes J00-J22 only, Chapter XXII, Codes for special purposes, codes U07.1-U07.2 only.

30 ICD-10 Chapter X, Diseases of the respiratory system, Influenza and pneumonia (J09–J18).

31 The Queensland Health list of notifiable conditions can be found at www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/notifiable-conditions/list

32 In Australia, publicly funded immunisation programs are administered by state and territory governments. The current National Immunisation Program Schedule (valid from April 2019) includes vaccinations against the following diseases: hepatitis B, diphtheria, tetanus, pertussis (whooping cough), poliomyelitis, Haemophilus influenzae type b (Hib), pneumococcal disease, rotavirus, measles, mumps, rubella, meningococcal ACWY disease, varicella (chicken pox), influenza and human papillomavirus (HPV).

33 Vaccines are available for only selected strains of influenza, meningococcal disease and pneumococcal disease.

34 Information in this report on child deaths with notifiable diseases, including COVID-19, may differ from official reporting by Queensland Health due to different methodology. Further information about the QFCC's methodology can be found in the Methodology in Appendix B. www.qfcc.qld.gov.au/about-us/publications/child-death-reports-and-data