

NZ Child and Youth Mortality Review Committee

9th Data Report

2008 – 2012

PREPARED BY THE NZ MORTALITY REVIEW DATA GROUP

2013

Executive summary

This is the 9th Data Report released by the CYMRC. It predominantly reports on data from 2008 to 2012, with some tables and figures for 2002-2012, and some for the time period 1979-2012. These data are from the Mortality Review Database, which contains information on all deaths in children and young people aged 28 days to 24 years who died in New Zealand from 2002 to the present.

For children and young people overall, the leading causes of death were medical conditions (38.3%), including neoplasms and congenital anomalies. Unintentional injury accounted for 30.6% of deaths overall, with transport crashes being the leading cause of unintentional injury death.

The leading cause of death changes with age, with the main cause of death in post-neonatal infants being Sudden Unexpected Death in Infancy (SUDI). Unintentional injury is the leading cause of death in all older age groups. There are, however, a significant number of deaths due to suicide in young people aged 15 to 24 years.

Overall the number of deaths for those aged between 28 days and 24 years has reduced. In 2008, there were 699 deaths and in 2012 there were 600. This reduction has, in part, been driven by a reduction in the number of deaths attributed to SUDI in the post-neonatal period (28 days to one year) and motor vehicle crashes in young people aged between 15 and 24 years.

SUDI rates in New Zealand are among the highest in industrialised countries.¹ Deaths attributed to SUDI in those aged 28 days to one year reduced from 55 in 2008 to 36 in 2012. SUDI rates among Māori are disproportionately high compared with non-Māori. However, a three-year rolling rate shows that there was a statistically significant decrease in the rate of post-neonatal Māori SUDI deaths between the periods 2002–04 and 2010–12.

There was also a statistically significant decrease in transport deaths overall between 2008 and 2012. Deaths from youth traffic incidents (people aged 15 to 24 years) also reduced from 135 in 2008 to 75 in 2012. This reduction in transport mortality was statistically significant in both the 15 to 19 and 20 to 24-year-old age groups.

Despite improvements in Māori SUDI rates, significant ethnic disparities still exist, with Māori children and young people having a statistically significantly higher mortality rate than other ethnic groups, followed by Pacific, NZ European, and Asian children and young people.

Males continue to be over-represented in mortality data.

¹ Moon RY, Horne RSC, Hauck FR. Sudden infant death syndrome. *Lancet* 2007; 370(9598): 1578-87.

1. Methodology

Overview

The Child and Youth Mortality Review process has evolved since the Committee was established in 2002. Many people and organisations are involved in providing information, reviewing deaths, collating information, and analysing and reviewing collated data. Particular processes that are central to mortality review are: review of individual deaths in the District Health Board region where the person resided, and national data collection and collation. Steps that are undertaken in the context of case review and data collation include:

1. National organisations and some individuals provide information directly to the Mortality Review Data Group (MRDG).
2. The information held centrally is available for use at local review meetings through DHB-appointed CYMRC Local Review Group co-ordinators.
3. Following the review of each death, CYMRC co-ordinators add further information to the national database.
4. The MRDG collate and analyse information held in the national database for the CYMRC.
5. The CYMRC reviews the collated case information as well as locally identified issues, recommendations and actions. This provides a detailed overview of regional and national trends, which can be used to inform prevention strategies and support recommendations at both a local and national level.

Data collection

The Mortality Review Data Group collect, securely store and link case information about all child and youth deaths from 1 January 2002 for the CYMRC. Information comes from a variety of sources, including:

1. Births, Deaths and Marriages (Department of Internal Affairs)
2. Ministry of Health
3. Child, Youth and Family (Ministry of Social Development)
4. Coroners
5. Coronial Services (Ministry of Justice)
6. Water Safety New Zealand
7. Ministry of Transport
8. Local Child and Youth Mortality Review Groups
9. Families of the deceased.

Information is provided in varying formats as well as being sent at times and time intervals that suit the data source. A weekly extract from Birth, Deaths and Marriages is the primary source of notification of deaths. Organisations such as Water Safety New Zealand and the Ministries of Health and Transport routinely provide selected information on all relevant deaths. The CYMRC continues to consider other suitable data sources in addition to these and to liaise with other organisations.

Some source providers have changed data format or have only recently started providing information. For example Child, Youth and Family provide information for cases which they have had contact with from June 2006 onwards. (The age range considered has gradually expanded from infant and preschool to include deaths in children and youth up to 24 years of age in 2009.) The majority of coroners have provided information on coronial cases from January 2003. The

Mortality Review Data Group enters and codes all information from the disparate and often conflicting data sources, in order to help facilitate local review as well as national reporting.

Figure M.1: Flow of case information from sources to the Mortality Review Database

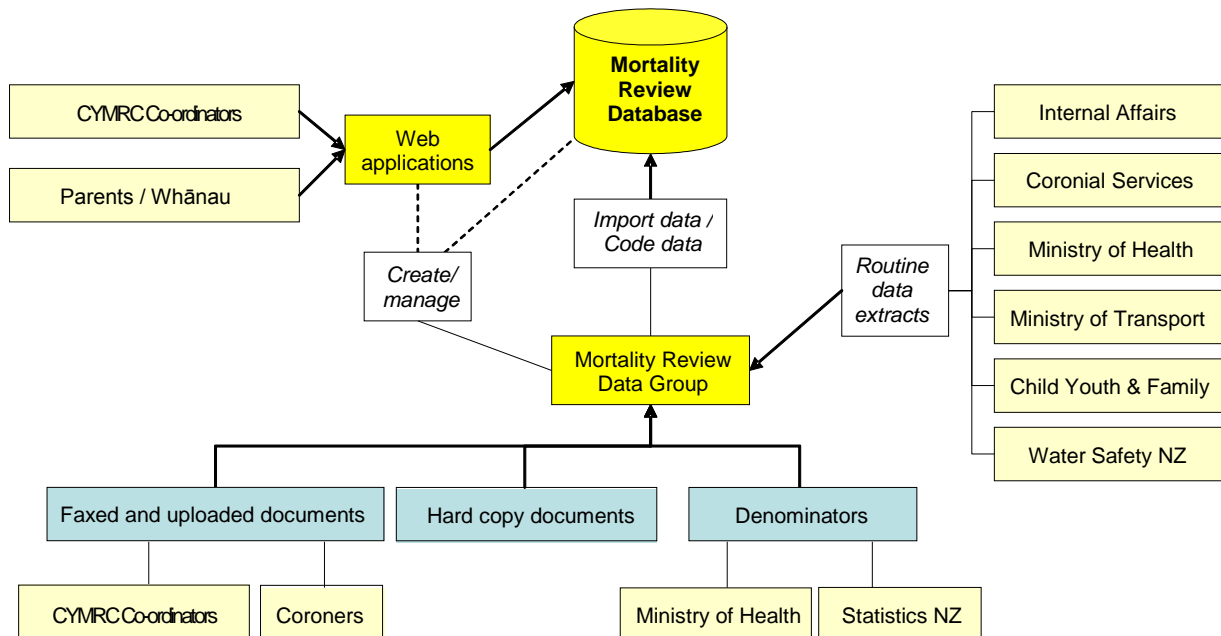


Figure M.1 illustrates these sources of information and some of the processing. The Mortality Review Data Group maintains websites which allow individuals to directly contribute information. A link on the public Health Quality and Safety Commission website (<http://www.hqsc.govt.nz/our-programmes/mrc/cymrc/information-for-parents-and-families/>) allows families, whānau and friends who have lost a child or young person to provide feedback about their experiences. The CYMRC Local Review Group Co-ordinator adds further details both before and after local review, via a private website. As well as data extracts — directly entered data and coded data — the information system also includes documents faxed by Coroners, electronic format coronial case information (post-2010), uploaded documents, hard copies of documents and denominators (provided by Statistics New Zealand and the Ministry of Health).

The Mortality Review Data Group identifies the NHI of the person for which each item of information is received. They import data into the Mortality Review Database and link the various sources of information that relate to each individual. Data are regularly cleaned to eliminate duplicate or incorrect records, follow up on missing details, and ensure completeness and internal consistency.

When interpreting CYMRC data it must be remembered that it is derived from a database that is constantly being updated. As well as details of new cases, there can also be new information for existing cases, and at times changing information for existing cases. The result of this is that details can change from year to year, even for cases whose death was some years previously. This is particularly true of cases that require an inquest, as in some cases this process may not be completed until years after the death. While this report includes deaths that occurred until 31 December 2012, the 2012 data are the least complete of any year, for the above reasons. The incompleteness of the data is not randomly spread across all causes. Deaths that are referred to the Coroner, such as unexpected deaths and some injury deaths, are less likely to have complete cause of death information available quickly. Therefore, information relating to deaths in 2012 in particular needs to be interpreted with caution. This also means that consecutive annual reports may have slightly different numbers in any one category, but the most recent reports will be the most accurate.

The local review process

Deaths of children and young people are reviewed by the Local Child and Youth Mortality Review Group (LCYMRG) in the DHB the individual lived in. The purpose of local review is to identify systems issues that can be modified to reduce the likelihood of future deaths. The CYMRC review process relies on information from the DHB of residence of the deceased child or youth. The co-ordinators of the local child and youth mortality review groups collect information from local organisations involved in the life and death of the individual. Some of the new information gathered as part of the local review process is entered into the Mortality Review Database.

Each Local Child and Youth Mortality Review Group has an appointed chair and co-ordinator. When the death of a child or youth aged between 28 days and 24 years occurs within a co-ordinator's region, the co-ordinator will access the secure database to gather initial information on the deceased. The co-ordinator will then initiate information requests to the various members of the local child and youth mortality review group who each act as a representative of their particular organisation.

As official agents of the CYMRC, the local child and youth mortality review group members can access their organisation's records to identify and collect information that may be relevant to the review process. The members bring this information to the review meeting and provide relevant details, as needed, for the review. Each review is facilitated by the local chair, whose task it is to bring together all the relevant factors relating to a death.

Information shared in the context of the review meeting must remain confidential to the process. Issues identified in the meeting that require urgent action from participating agencies, such as aspects of illegal activity or the safety of others, must be dealt with outside the review process using the normal inter-agency protocols and procedures. This ensures that participants do not compromise the no-blame focus of the review process or the confidentiality agreement signed as a condition of agent status. The process is exempt from Official Information Act requirements, but complaints about procedures can be reported to and investigated by the Ombudsman.

A review group might meet several times before all the information has been gathered on a case. Once all the information has been gathered, the group may choose to highlight issues or make specific recommendations. Local recommendations may be delegated to specific group members if the agency they represent is needed to facilitate a response. It is important that the issues and recommendations be presented in a way that does not assign blame but rather focuses on changes that could prevent future deaths.

Once a local death review is completed, the co-ordinator will enter all the relevant data into the secure national database. In this way, issues, recommendations and follow-up actions are forwarded to the national Child and Youth Mortality Review Committee.

The local child and youth mortality review group process allows high levels of detail about the context of death to be obtained. The process itself supports learning from cases to be acted upon locally. Although only a proportion of deaths prior to 2009 have been reviewed, the increased coverage of the local child and youth mortality review groups will allow for many more system improvements.

Analysis and coding

Mortality data

The data for this report are from the Mortality Review Database. The data were extracted from the database on 27 September 2013. For the purposes of mortality review in New Zealand, children and youth are defined as those aged between 28 days and less than 25 years. In all tables, the year of death relates to the calendar year in which the individual died, rather than the year the death was registered. This is different to some official collections, where the year the death is registered is used. Where neonatal deaths are included, these do not include stillbirths or terminations.

Cause of death

In response to requests for more detailed ICD-10-AM coding, the Ministry of Health data was altered in 2008 to include their mortality coding. Cause of death is now assigned using the Underlying Cause of Death from the Ministry of Health's Mortality Collection. This was backdated to include all cases in the database, not just those from 2008 onwards.

For deaths in infants less than one year of age, 'SUDI' (Sudden Unexpected Death in Infancy) is assigned as the cause of death where any one of the following ICD-10-AM codes were listed as the underlying cause of death in the Mortality Collection: R95 Sudden infant death syndrome; R96 Other sudden death, cause unknown; R98 Unattended death; R99 Other ill-defined and unspecified causes of mortality; W75 Accidental suffocation and strangulation in bed; W78 Inhalation of gastric contents; W79 Inhalation and ingestion of food causing obstruction of respiratory tract.

If the individual was between one and two years of age, and any of the following ICD-10-AM codes were listed as their underlying cause of death, the individual's cause of death was attributed to 'SUD' (Sudden Unexpected Death): R95 Sudden infant death syndrome; R96 Other sudden death, cause unknown; R98 Unattended death; R99 Other ill-defined and unspecified causes of mortality; W75 Accidental suffocation and strangulation in bed; W78 Inhalation of gastric contents.

The external causes of death as presented in the cause of death tables are arranged according to the International Collaborative Effort on Injury Statistics classification. This assigns ICD-10 groupings to various headings. Under this classification system, unintentional injury is further divided into presumed unintentional injury, injury of undetermined intent, and injuries due to legal intervention or war. The classification system used in this report has been used since 2011, and is slightly different to years prior to 2011; hence data from some previous reports may not match exactly.

Ethnicity

There are multiple sources of ethnicity data in the database. These are: Births, Deaths and Marriages, the Ministry of Health, Coronial records and the information entered by co-ordinators when reviewing a death. These data sources are prioritised based on evidence as to their quality and completeness in New Zealand. Prioritised ethnicity is used in this report to assign a single ethnic group to each individual.

Statistics

The data presented in this report were computed from the database by the NZ Mortality Review Data Group. Percentages are expressed to one decimal point. In some cases, due to rounding, percentages do not sum to 100 exactly.

The denominators used in the main analyses are from two sources. The first is the number of live births in New Zealand, as supplied by the Ministry of Health. Year is determined using the year of registration of birth, rather than the year of birth itself. Rates for infant deaths are expressed as per 1000 live births. The second denominator used is a population projection supplied to the Ministry of Health by Statistics New Zealand. These projections used assumptions as specified by the Ministry of Health, and were calculated for the years 2006 – 2015. These data are provided in five-year age

groups. The one to four year age group denominator used in this report was calculated by subtracting the number of live births from the population in the zero to four year age group. Mortality rates in those aged one to 24 years are expressed as per 100,000 estimated population. This is age-group specific.

Some of the figures in this document contain historical data dating back to 1979. The numerator for these deaths is as follows: CYMRC data are used for deaths aged 28 days to 24 years from 2002 onwards; prior to this Statistics New Zealand data are used. For neonatal deaths (zero to 27 days), Perinatal and Maternal Mortality Review Committee data are used from 2007 onwards; prior to this Statistics New Zealand data are used. The denominator used to calculate infant mortality rates was live births from Statistics New Zealand (1979-2012). The denominator used to calculate mortality rates for children and young people aged one to 24 years were population estimates from Statistics New Zealand (1979-2012). Statistics New Zealand use a historical de facto population for years prior to 1991, and from 1991 the estimated resident population is used. The historical de facto population estimates are based on counts of all people present at a given time, and does not account for people who are not usually resident, or those who are usually resident but temporarily out of the country.² The estimated resident population takes into account residents who are temporarily overseas and makes an adjustment for net census undercount, as well as excluding visitors from overseas.³ Due to the differences in the way rates are calculated and the different denominators used, there may be variations between the rates presented in this report and other published rates.

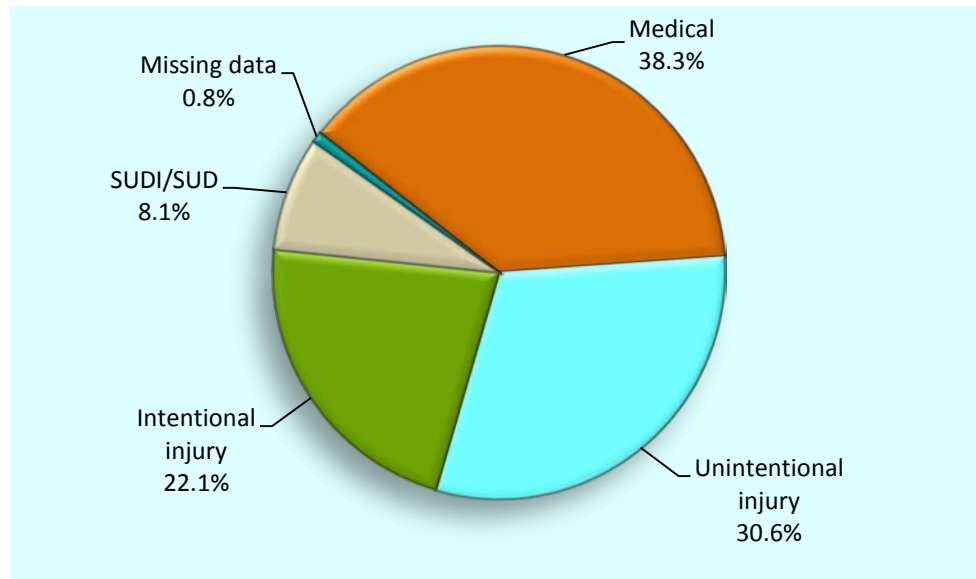
The deaths of non-New Zealand residents are excluded from the main sections of the report. Data on this population is provided as a supplement. Due to the lack of a suitable denominator, no rates are calculated for deaths in overseas residents.

² Statistics New Zealand website: <http://datainfolplus.stats.govt.nz/item/nz.govt.stats/bec27cc6-c9e2-4b7a-b1f4-cb5e096f91ad> accessed 26.11.2013

³ Statistics New Zealand website: <http://datainfolplus.stats.govt.nz/item/nz.govt.stats/7751f101-7b2d-4e97-a487-3ac4126d22d4> accessed 26.11.2013

1. New Zealand National Data Overview

Figure 1.1 Mortality (%) in children and young people aged 28 days to 24 years by cause of death, New Zealand 2008–2012 (n=3225 deaths)



Source: Mortality Review Database

Table 1.1 Mortality (number of deaths) in children and young people aged 28 days to 24 years by cause of death and age group, New Zealand 2008–2012 combined (n=3225 deaths)

Category	<1 year*	1–4 years	5–9 years	10–14 years	15–19 years	20–24 years	Total	Percentage (%)
Medical	340	202	88	116	229	261	1236	38.3
Unintentional injury	17	107	40	77	363	384	988	30.6
Intentional injury	7	17	4	41	293	351	713	22.1
SUDI/SUD	246	16	0	0	0	0	262	8.1
Missing data	8	3	0	1	6	8	26	0.8
Total	618	345	132	235	891	1004	3225	100.0

*This category represents infants 28 days and older, and less than one calendar year in age

Source: Mortality Review Database

Table 1.2 Mortality (number of deaths and rates per 100,000 resident population) by cause of death and age group, New Zealand 2008–2012 combined (n=3225 deaths)

Cause of death	<1 year*	1–4 years	5–9 years	10–14 years	15–19 years	20–24 years	Total	%	Rate 2008–2012
Medical									
Infectious and parasitic disease	38	22	2	3	5	4	74	2.3	0.97
Neoplasms	8	39	32	39	63	77	258	8.0	3.38
Diseases of the blood and blood-forming organs and disorders of the immune system	4	3	-	-	2	2	11	0.3	0.14
Endocrine, nutritional and metabolic diseases	10	13	9	4	15	20	71	2.2	0.93
Mental and behavioural disorders	-	-	-	1	1	1	3	0.1	0.04
Diseases of the nervous system	23	25	16	29	40	47	180	5.6	2.36
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-	-
Diseases of the circulatory system	16	17	6	12	30	44	125	3.9	1.64
Diseases of the respiratory system	48	26	10	7	17	17	125	3.9	1.64
Diseases of the digestive system	4	3	1	3	3	6	20	0.6	0.26
Diseases of the skin and subcutaneous tissue	1	-	-	-	3	1	5	0.2	0.07
Diseases of the musculoskeletal system and connective tissue	-	1	1	1	5	4	12	0.4	0.16
Diseases of the genitourinary system	3	-	-	-	2	4	9	0.3	0.12
Pregnancy, childbirth and the puerperium	-	-	-	-	-	3	3	0.1	0.04
Certain conditions originating in the perinatal period	74	8	-	1	-	-	83	2.6	1.09
Congenital anomalies	111	41	10	14	22	24	222	6.9	2.91
Symptoms & abnormal findings not elsewhere classified	-	4	1	2	21	7	35	1.1	0.46
Total medical	340	202	88	116	229	261	1,236	38.3	16.19
Unintentional injury (includes undetermined intent and legal intervention/war)#									
Cut/pierce	-	-	-	-	1	2	3	0.1	0.04
Drowning	2	31	4	6	23	23	89	2.8	1.17
Fall	1	3	1	2	20	18	45	1.4	0.59
Fire/hot object or substance	-	4	4	1	2	5	16	0.5	0.21
Firearm	-	-	-	1	4	1	6	0.2	0.08
Machinery	-	3	-	-	1	2	6	0.2	0.08
Transport	8	46	24	46	251	271	646	20.0	8.46
Natural/environmental	3	2	-	3	11	13	32	1.0	0.42
Overexertion	-	-	-	-	-	-	-	-	-
Poisoning	-	1	1	6	25	29	62	1.9	0.81
Struck by, against	-	5	2	2	1	4	14	0.4	0.18
Suffocation	2	9	2	9	17	8	47	1.5	0.62
Other specified, classifiable	-	-	1	-	4	8	13	0.4	0.17
Other specified, not elsewhere classified	-	1	1	-	2	-	4	0.1	0.05
Unspecified	1	1	-	-	-	-	2	0.1	s
Complications of medical and surgical care	-	1	-	1	1	-	3	0.1	0.04
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-	-
Total unintentional injury	17	107	40	77	363	384	988	30.6	12.94
Intentional injury									
Assault	7	17	3	3	18	31	79	2.4	1.03
Suicide	-	-	1	38	275	320	634	19.7	8.30
Total intentional injury	7	17	4	41	293	351	713	22.1	9.34
SUDI/SUD									
SUDI (28 days to <1 year) †	246	-	-	-	-	-	246	7.6	3.22
SUD (1-2 years) ‡	-	16	-	-	-	-	16	0.5	0.21
Total SUDI/SUD	246	16	-	-	-	-	262	8.1	3.43
Missing data	8	3	-	1	6	8	26	0.8	0.34
Total	618	345	132	235	891	1004	3225	100.0	42.23

's' indicates rate not calculated due to small numbers

*This category represents infants 28 days and older, and less than one calendar year in age

See table 1.3 for unintentional injury specified further by intent

† See table 2.1 for SUDI deaths by ICD-10-AM code

‡ See table 3.1 for SUD deaths by ICD-10-AM code

Source: Numerator Mortality Review Database; Denominator Statistics New Zealand population projection 2008-2012, 0-24 years

Table 1.3 Unintentional injury by cause of death, intent sub group and age group, New Zealand 2008–2012 combined (n=988 deaths)

Cause of death	Intent sub group																		Total
	< 1 year*			1-4 years			5-9 years			10-14 years			15-19 years			20-24 years			
	U	D	LW	U	D	LW	U	D	LW	U	D	LW	U	D	LW	U	D	LW	
Cut/pierce	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	3
Drowning	2	-	-	31	-	-	4	-	-	6	-	-	23	-	-	23	-	-	89
Fall	1	-	-	3	-	-	1	-	-	2	-	-	18	2	-	17	1	-	45
Fire/hot object or substance	-	-	-	4	-	-	4	-	-	1	-	-	2	-	-	5	-	-	16
Firearm	-	-	-	-	-	-	-	-	-	1	-	-	2	-	2	1	-	-	6
Machinery	-	-	-	3	-	-	-	-	-	-	-	-	1	-	-	2	-	-	6
Transport	8	-	-	46	-	-	24	-	-	46	-	-	251	-	-	270	1	-	646
Natural/environmental	3	-	-	2	-	-	-	-	-	3	-	-	11	-	-	13	-	-	32
Overexertion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poisoning	-	-	-	1	-	-	1	-	-	6	-	-	22	3	-	28	1	-	62
Struck by, against	-	-	-	5	-	-	2	-	-	2	-	-	1	-	-	4	-	-	14
Suffocation	2	-	-	9	-	-	2	-	-	3	6	-	5	12	-	3	5	-	47
Other specified, classifiable	-	-	-	-	-	-	1	-	-	-	-	-	3	1	-	8	-	-	13
Other specified, not elsewhere classified	-	-	-	1	-	-	1	-	-	-	-	-	2	-	-	-	-	-	4
Unspecified	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Complications of medical and surgical care	-	-	-	1	-	-	-	-	-	1	-	-	1	-	-	-	-	-	3
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total unintentional cause of death	17	-	-	106	1	-	40	-	-	71	6	-	343	18	2	375	9	-	988

*This category represents infants 28 days and older, and less than one calendar year in age

U indicates unintentional intent

D indicates undetermined intent

LW indicates legal intervention/war

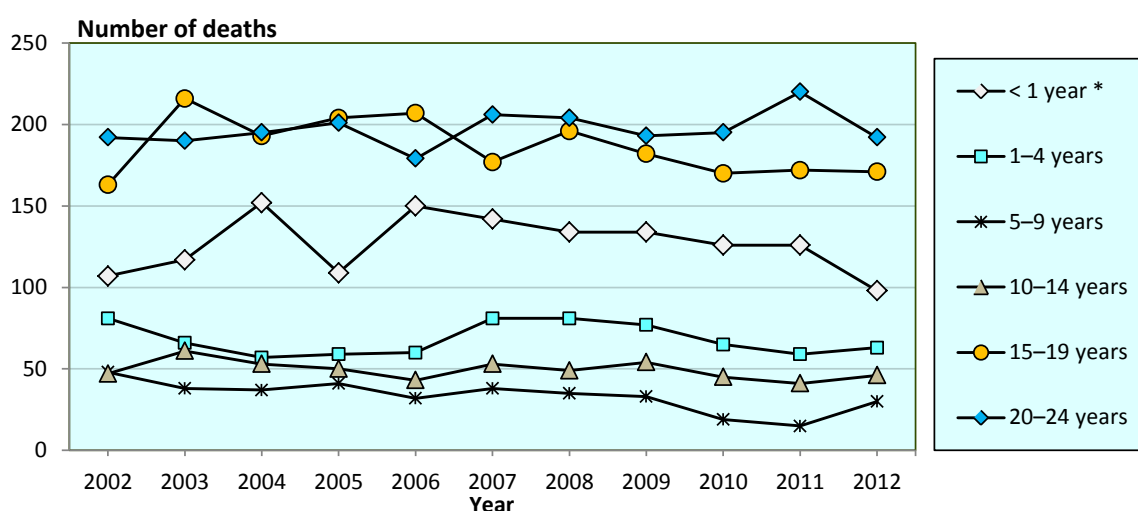
Source: Mortality Review Database

Table 1.4 Mortality (number of deaths) in children and young people aged 28 days to 24 years by age group and year of death, New Zealand 2008–2012 (n=3225 deaths)

Category	2008	2009	2010	2011	2012	Total	Percentage (%)
28 days – <1 year	134	134	126	126	98	618	19.2
1–4 years	81	77	65	59	63	345	10.7
5–9 years	35	33	19	15	30	132	4.1
10–14 years	49	54	45	41	46	235	7.3
15–19 years	196	182	170	172	171	891	27.6
20–24 years	204	193	195	220	192	1004	31.1
Total	699	673	620	633	600	3225	100.0

Source: Mortality Review Database

Figure 1.2 Mortality (number of deaths) in children and young people aged 28 days to 24 years by age group and year of death, New Zealand 2002–2012 (n=7270 deaths)



*This category represents infants 28 days and older, and less than one calendar year in age

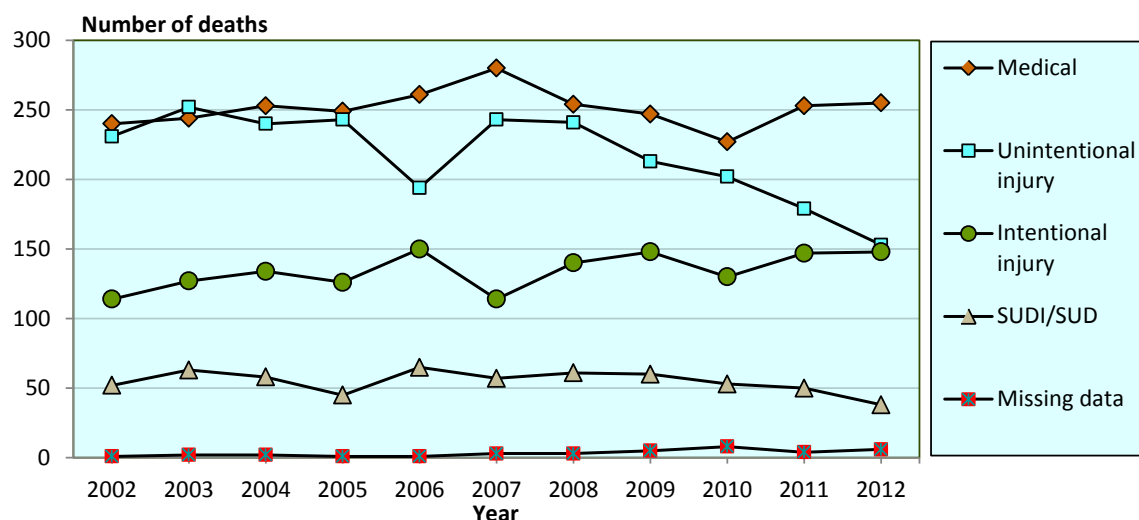
Source: Mortality Review Database

Table 1.5 Mortality (number of deaths) in children and young people aged 28 days to 24 years by cause of death and year, New Zealand 2008–2012 (n=3225 deaths)

Category	2008	2009	2010	2011	2012	Total	Percentage (%)
Medical	254	247	227	253	255	1236	38.3
Unintentional injury	241	213	202	179	153	988	30.6
Intentional injury	140	148	130	147	148	713	22.1
SUDI/SUD	61	60	53	50	38	262	8.1
Missing data	3	5	8	4	6	26	0.8
Total	699	673	620	633	600	3225	100.0

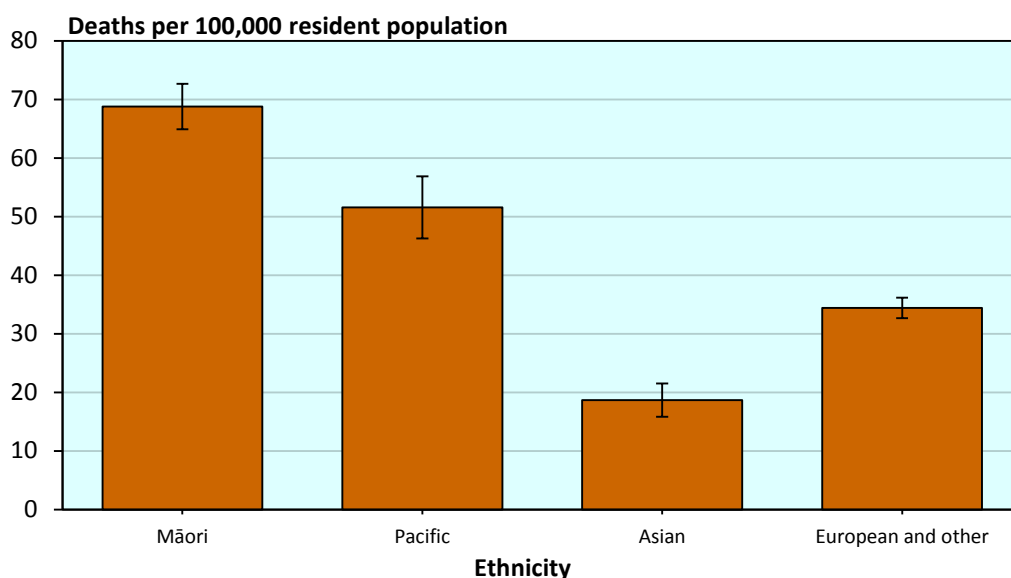
Source: Mortality Review Database

Figure 1.3 Mortality (number of deaths) in children and young people aged 28 days to 24 years by cause of death and year, New Zealand 2002–2012 (n=7270 deaths)



Source: Mortality Review Database

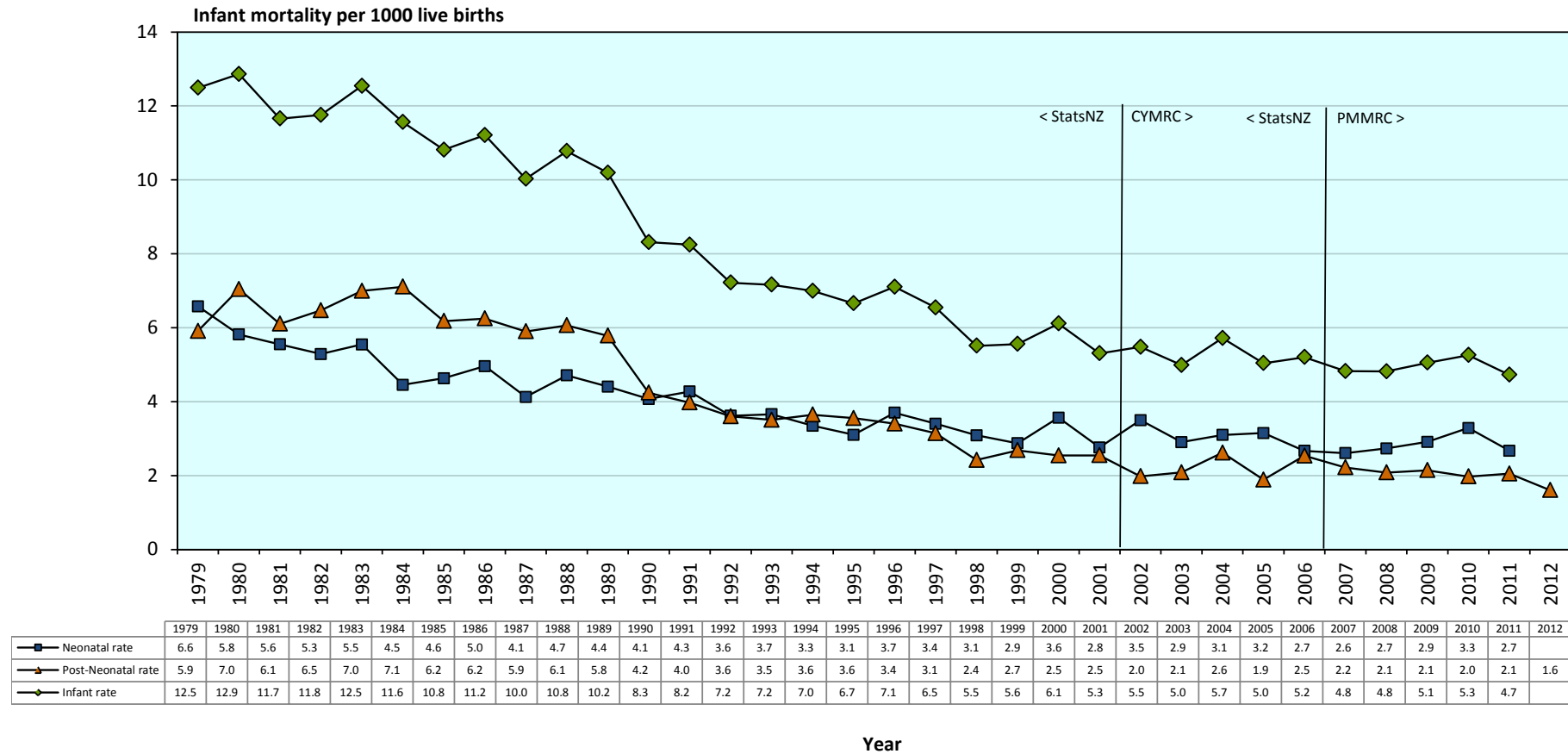
Figure 1.4 Mortality (rates per 100,000 population and 95% confidence intervals) in children and young people aged 28 days to 24 years by ethnicity, New Zealand 2008–2012 combined (n=3211 deaths*)



*Excludes 14 cases where ethnicity data are missing

Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

Figure 1.5 Neonatal, post-neonatal and infant mortality (rates per 1000 live births) in infants 0 days to less than 1 year of age, New Zealand 1979–2012



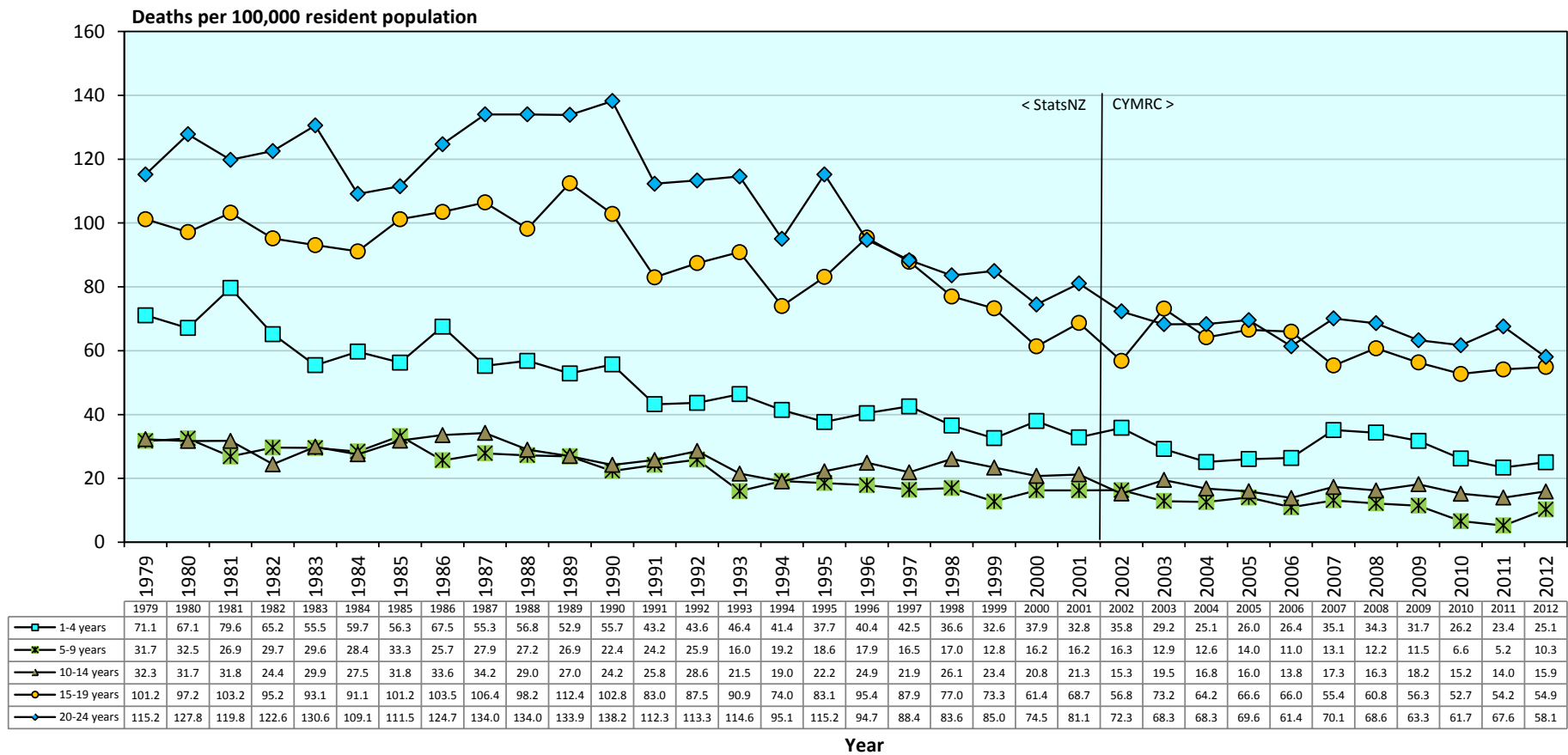
Source: *Numerator* Neonatal deaths (0-27 days): 1979-2006: Statistics New Zealand. 2007-2011: Mortality Review Database (PMMRC data); Note: 2012 data for neonatal deaths not yet available.

Post-neonatal deaths (28 days to less than one year): 1979-2001: Statistics New Zealand. 2002-2012: Mortality Review Database (CYMRC data).

Infant deaths (0 days to less than one year): sum of neonatal and post-neonatal deaths, as described above.

Denominator Statistics New Zealand live births 1979-2012.

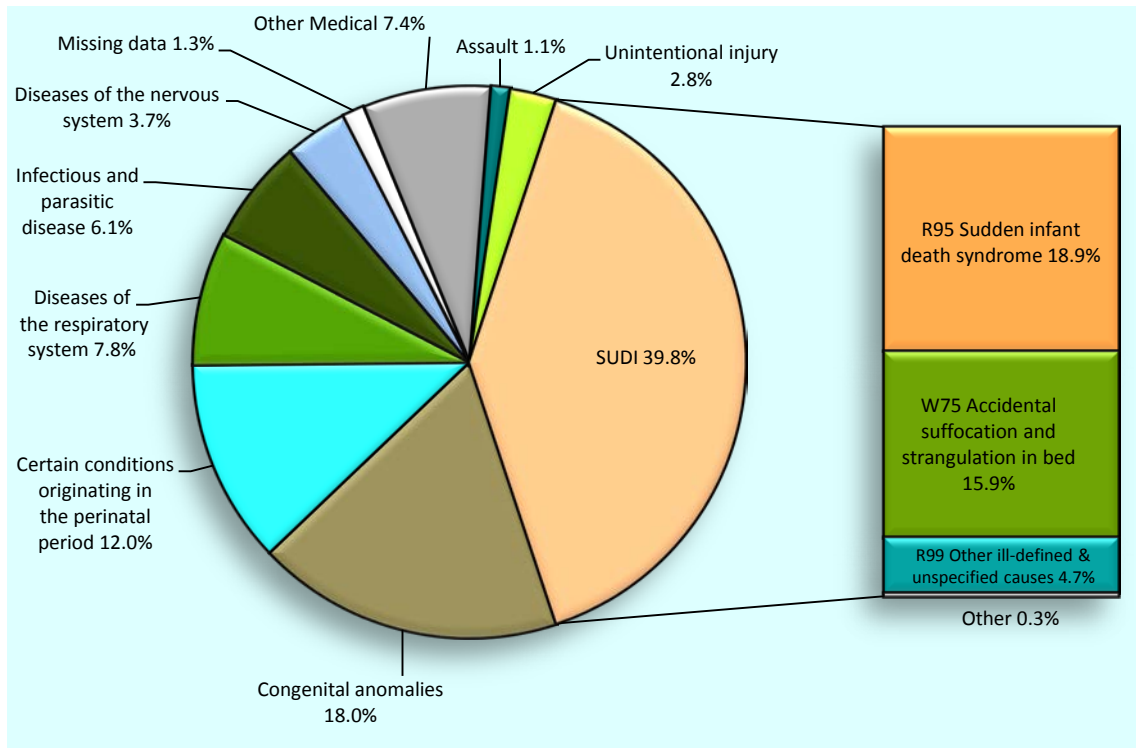
Figure 1.6 Mortality (age-specific rates per 100,000 population) by age group, 1-24 years, New Zealand 1979–2012



Source: Numerator 1979-2001: Statistics New Zealand. 2002-2012: Mortality Review Database; Denominator Statistics New Zealand estimated population 1979-2012.

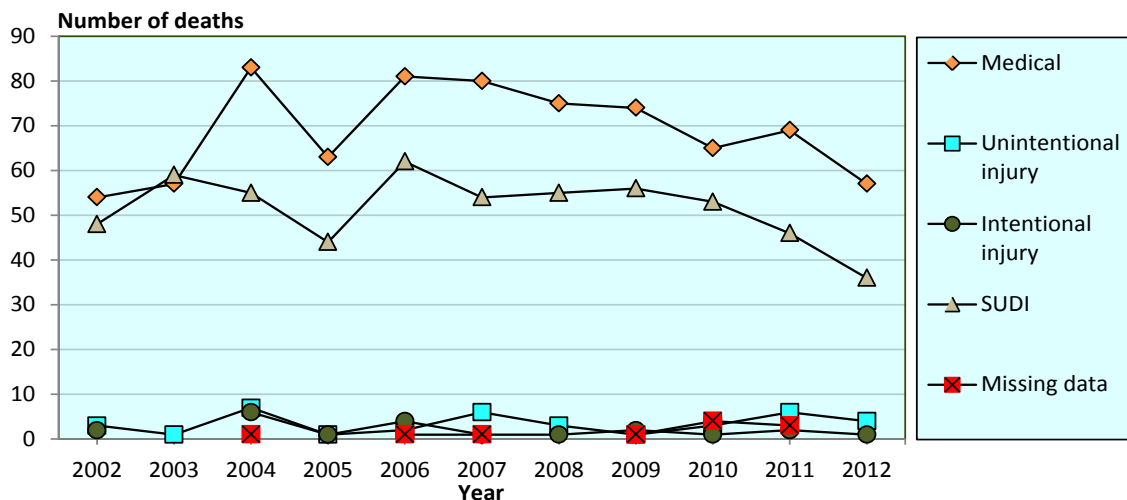
2. Infants aged 28 days to less than one year

Figure 2.1 Post-neonatal infant mortality (%) by cause of death, New Zealand 2008–2012 combined (n=618 deaths)



Source: Mortality Review Database

Figure 2.2 Post-neonatal infant mortality (number of deaths) by cause of death and year, New Zealand 2002–2012 (n=1395 deaths)



Source: Mortality Review Database

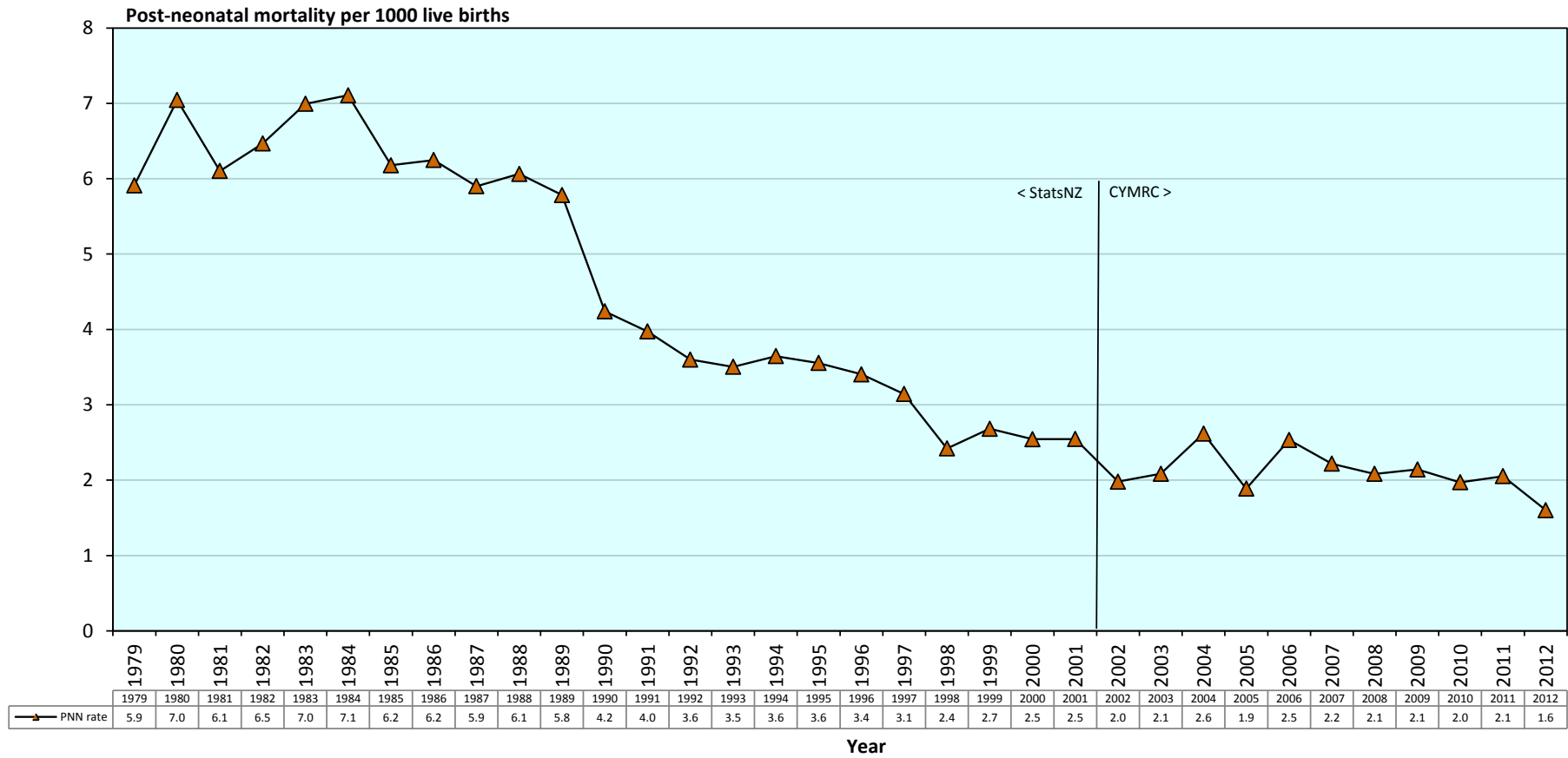
Table 2.1 Post-neonatal infant mortality (number of deaths and rates per 1000 live births) by cause of death and year, New Zealand 2008–2012 (n=618 deaths)

Cause of death	2008	2009	2010	2011	2012	Total	%	Rate 2008–2012
Medical								
Infectious and parasitic disease	9	11	4	10	4	38	6.1	0.12
Neoplasms	-	3	2	1	2	8	1.3	0.03
Diseases of the blood and blood-forming organs and disorders of the immune system	1	2	-	-	1	4	0.6	0.01
Endocrine, nutritional and metabolic diseases	1	3	3	2	1	10	1.6	0.03
Mental and behavioural disorders	-	-	-	-	-	-	-	-
Diseases of the nervous system	4	3	4	5	7	23	3.7	0.07
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	3	2	4	5	2	16	2.6	0.05
Diseases of the respiratory system	10	10	10	8	10	48	7.8	0.15
Diseases of the digestive system	2	1	-	1	-	4	0.6	0.01
Diseases of the skin and subcutaneous tissue	-	-	1	-	-	1	0.2	s
Diseases of the musculoskeletal system and connective tissue	-	-	-	-	-	-	-	-
Diseases of the genitourinary system	-	1	1	1	-	3	0.5	0.01
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	19	19	9	13	14	74	12.0	0.23
Congenital anomalies	26	19	27	23	16	111	18.0	0.35
Symptoms & abnormal findings not elsewhere classified	-	-	-	-	-	-	-	-
Total medical	75	74	65	69	57	340	55.0	1.07
Unintentional injury (includes undetermined intent and legal intervention/war)								
Cut/pierce	-	-	-	-	-	-	-	-
Drowning	-	-	1	1	-	2	0.3	s
Fall	-	-	-	-	1	1	0.2	s
Fire/hot object or substance	-	-	-	-	-	-	-	-
Firearm	-	-	-	-	-	-	-	-
Machinery	-	-	-	-	-	-	-	-
Transport	3	-	2	1	2	8	1.3	0.03
Natural/environmental	-	-	-	3	-	3	0.5	0.01
Overexertion	-	-	-	-	-	-	-	-
Poisoning	-	-	-	-	-	-	-	-
Struck by, against	-	-	-	-	-	-	-	-
Suffocation	-	1	-	1	-	2	0.3	s
Other specified, classifiable	-	-	-	-	-	-	-	-
Other specified, not elsewhere classified	-	-	-	-	-	-	-	-
Unspecified	-	-	-	-	1	1	0.2	s
Complications of medical and surgical care	-	-	-	-	-	-	-	-
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total unintentional injury	3	1	3	6	4	17	2.8	0.05
Intentional injury								
Assault	1	2	1	2	1	7	1.1	0.02
Total intentional injury	1	2	1	2	1	7	1.1	0.02
Sudden Unexpected Death in Infancy (SUDI)								
R95 Sudden infant death syndrome	33	35	20	16	13	117	18.9	0.37
R96 Other sudden death, cause unknown	-	-	-	-	-	-	-	-
R98 Unattended death	-	-	-	-	-	-	-	-
R99 Other ill-defined and unspecified causes of mortality	-	1	4	10	14	29	4.7	0.09
W75 Accidental suffocation and strangulation in bed	22	19	28	20	9	98	15.9	0.31
W78 Inhalation of gastric contents	-	-	1	-	-	1	0.2	s
W79 Inhalation and ingestion of food causing obstruction of respiratory tract	-	1	-	-	-	1	0.2	s
Total SUDI	55	56	53	46	36	246	39.8	0.78
Missing data	-	1	4	3	-	8	1.3	0.03
Total	134	134	126	126	98	618	100.0	1.95

's' indicates rate not calculated due to small numbers

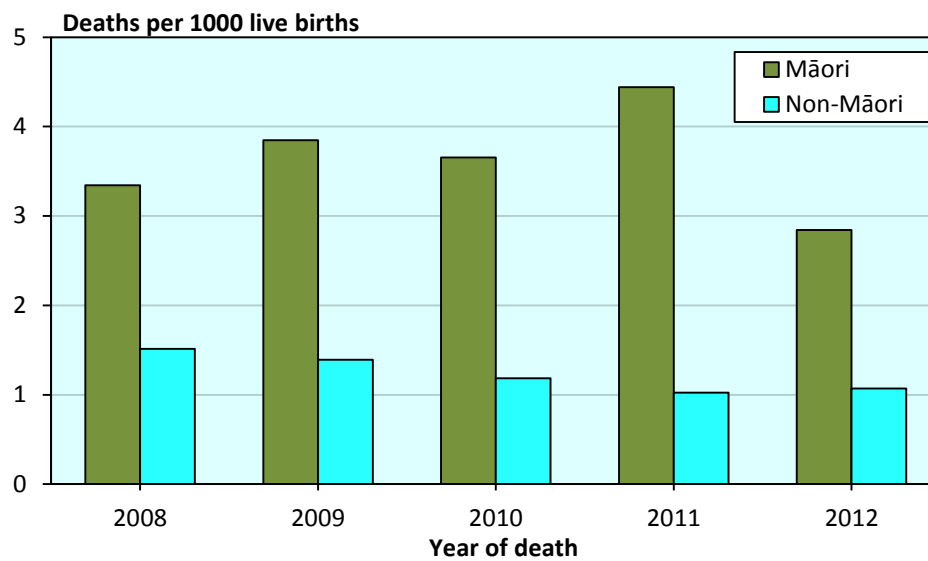
Source: *Numerator* Mortality Review Database; *Denominator* NZHIS Live Births 2008–2012

Figure 2.3 Post-neonatal mortality (rates per 1000 live births) in infants aged 28 days to 1 year, New Zealand 1979–2012



Source: Numerator 1979-2001: Statistics New Zealand. 2002-2012: Mortality Review Database (CYMRC data). Denominator Statistics New Zealand live births 1979-2012.

Figure 2.4 Post-neonatal infant mortality (rates per 1000 live births), Māori and non-Māori by year of death, New Zealand 2008–2012 (n=613 deaths*)

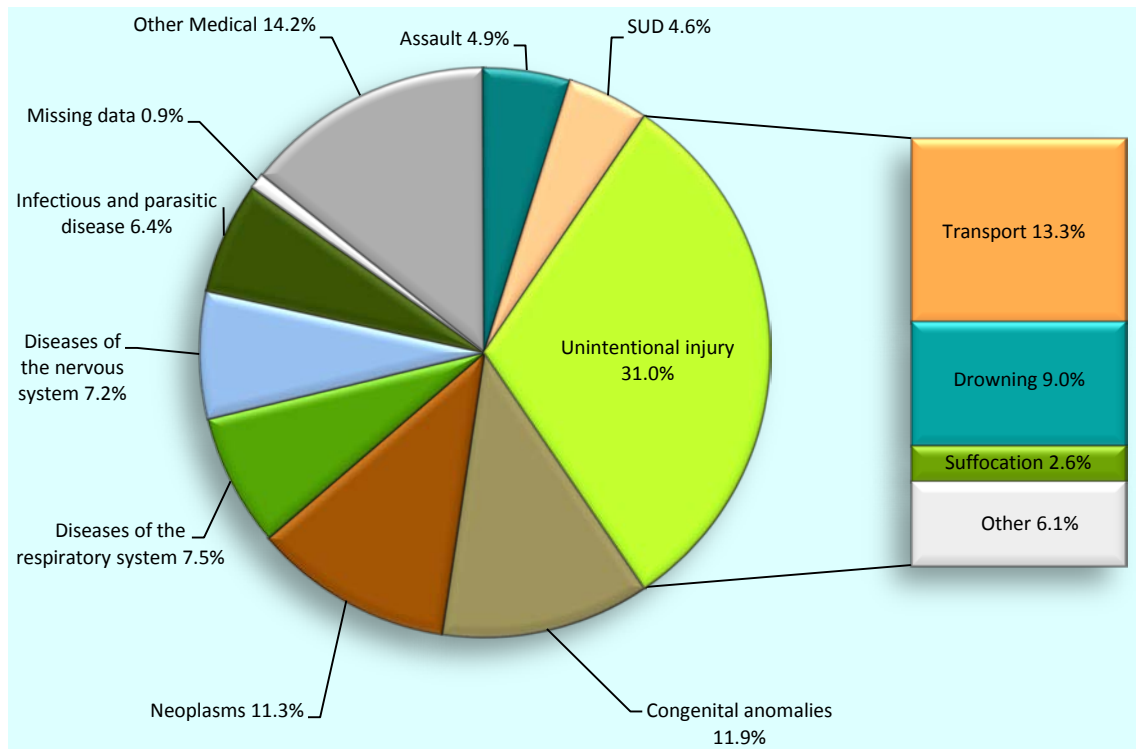


*Excludes 5 cases with no available ethnicity data

Source: *Numerator* Mortality Review Database; *Denominator* NZHIS Live Births 2008-2012

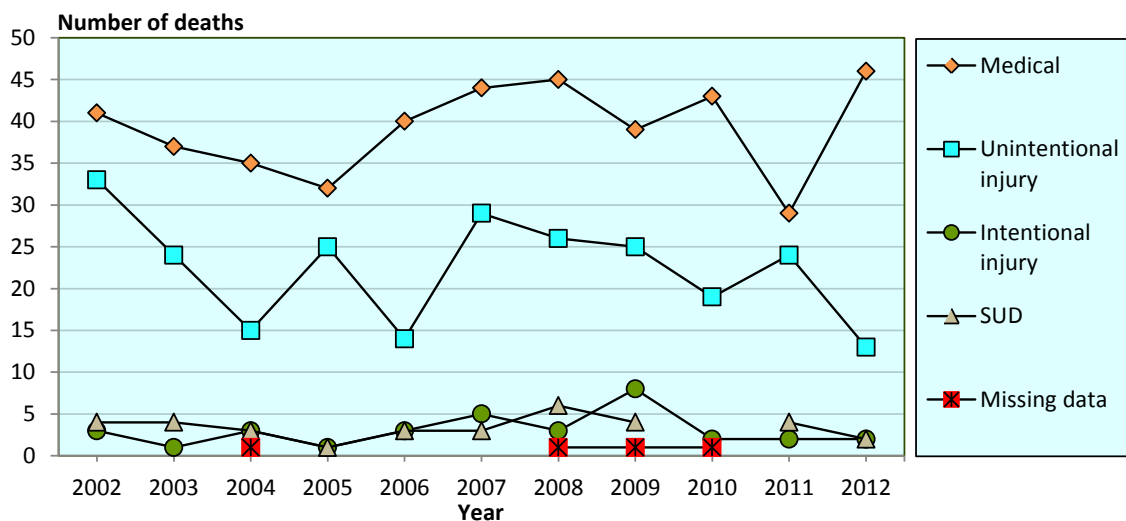
3. Children aged one to four years

Figure 3.1 Mortality (%) in children aged 1–4 years by cause of death, New Zealand 2008–2012 combined (n=345 deaths)



Source: Mortality Review Database

Figure 3.2 Mortality (number of deaths) in children aged 1–4 years by cause of death and year, New Zealand 2002–2012 (n=749 deaths)



Source: Mortality Review Database

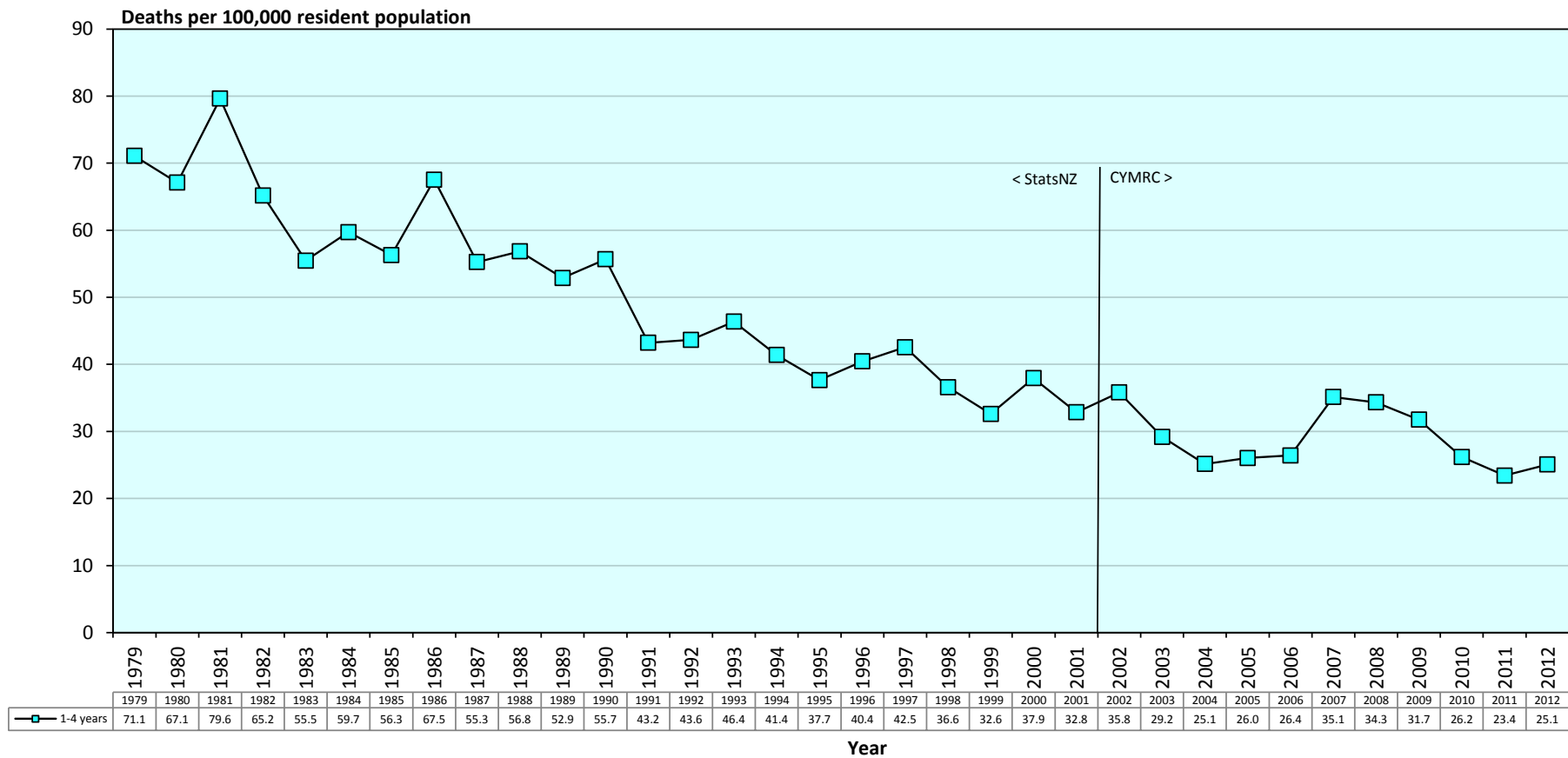
Table 3.1 Mortality (number of deaths and rates per 100,000 resident population) in children aged 1–4 years by cause of death and year, New Zealand 2008-2012 (n=345 deaths)

Cause of death	2008	2009	2010	2011	2012	Total	%	Rate 2008–2012
Medical								
Infectious and parasitic disease	6	1	5	6	4	22	6.4	1.80
Neoplasms	8	5	8	7	11	39	11.3	3.18
Diseases of the blood and blood-forming organs and disorders of the immune system	1	-	1	-	1	3	0.9	0.24
Endocrine, nutritional and metabolic diseases	6	3	2	1	1	13	3.8	1.06
Mental and behavioural disorders	-	-	-	-	-	-	-	-
Diseases of the nervous system	5	7	6	2	5	25	7.2	2.04
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	4	3	4	2	4	17	4.9	1.39
Diseases of the respiratory system	6	5	6	2	7	26	7.5	2.12
Diseases of the digestive system	1	-	1	-	1	3	0.9	0.24
Diseases of the skin and subcutaneous tissue	-	-	-	-	-	-	-	-
Diseases of the musculoskeletal system and connective tissue	-	-	-	-	1	1	0.3	s
Diseases of the genitourinary system	-	-	-	-	-	-	-	-
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	-	-	2	4	2	8	2.3	0.65
Congenital anomalies	8	13	6	5	9	41	11.9	3.35
Symptoms & abnormal findings not elsewhere classified	-	2	2	-	-	4	1.2	0.33
Total medical	45	39	43	29	46	202	58.6	16.48
Unintentional injury (includes undetermined intent and legal intervention/war)								
Cut/pierce	-	-	-	-	-	-	-	-
Drowning	7	6	4	11	3	31	9.0	2.53
Fall	1	1	-	1	-	3	0.9	0.24
Fire/hot object or substance	2	2	-	-	-	4	1.2	0.33
Firearm	-	-	-	-	-	-	-	-
Machinery	1	-	1	1	-	3	0.9	0.24
Transport	9	13	11	6	7	46	13.3	3.75
Natural/environmental	-	-	1	1	-	2	0.6	s
Overexertion	-	-	-	-	-	-	-	-
Poisoning	-	1	-	-	-	1	0.3	s
Struck by, against	1	-	1	1	2	5	1.4	0.41
Suffocation	5	1	-	2	1	9	2.6	0.73
Other specified, classifiable	-	-	-	-	-	-	-	-
Other specified, not elsewhere classified	-	-	1	-	-	1	0.3	s
Unspecified	-	1	-	-	-	1	0.3	s
Complications of medical and surgical care	-	-	-	1	-	1	0.3	s
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total unintentional injury	26	25	19	24	13	107	31.0	8.73
Intentional injury								
Assault	3	8	2	2	2	17	4.9	1.39
Total intentional injury	3	8	2	2	2	17	4.9	1.39
Sudden Unexpected Death								
R95 Sudden infant death syndrome	-	-	-	1	-	1	0.3	s
R96 Other sudden death, cause unknown	-	-	-	-	-	-	-	-
R98 Unattended death	-	-	-	-	-	-	-	-
R99 Other ill-defined and unspecified causes of mortality	1	4	-	3	1	9	2.6	0.73
W75 Accidental suffocation and strangulation in bed	5	-	-	-	1	6	1.7	0.49
W78 Inhalation of gastric contents	-	-	-	-	-	-	-	-
Total SUD	6	4	-	4	2	16	4.6	1.31
Missing data	1	1	1	-	-	3	0.9	0.24
Total	81	77	65	59	63	345	100.0	28.15

's' indicates rate not calculated due to small numbers

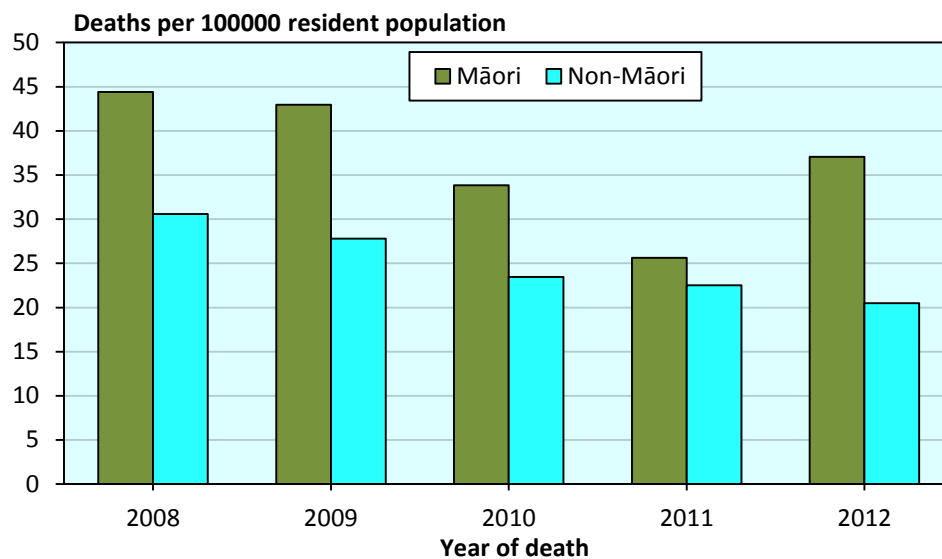
Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

Figure 3.3 Mortality (rates per 100,000 population) in children aged 1–4 years, New Zealand 1979–2012



Source: *Numerator* 1979-2001: Statistics New Zealand. 2002-2012: Mortality Review Database. *Denominator* Statistics New Zealand estimated population ages 1-4 years, 1979-2012.

Figure 3.4 Mortality (rates per 100,000 resident population) in children aged 1–4 years, Māori and non-Māori, New Zealand 2008-2012 (n=344 deaths*)

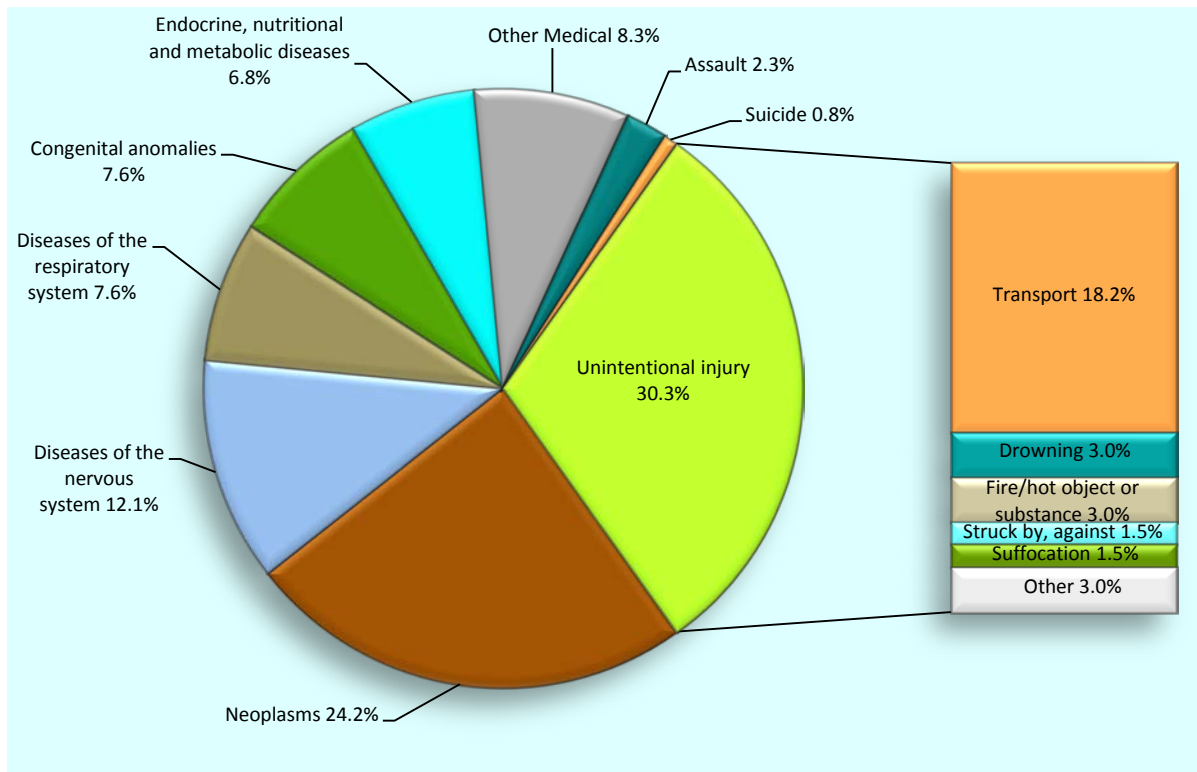


*Excludes 1 case with no available ethnicity data

Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

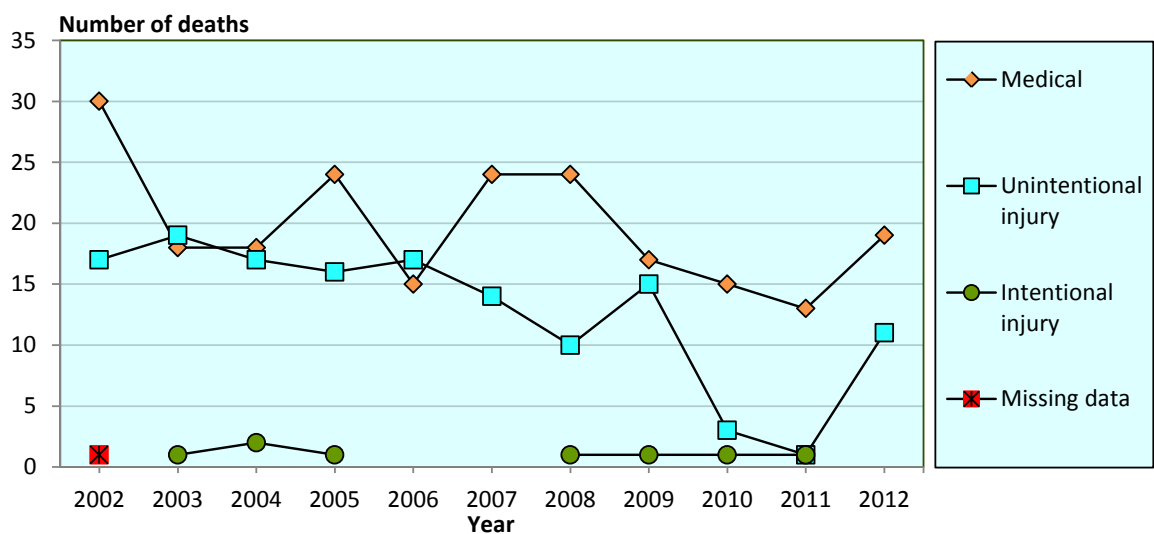
4. Children aged five to nine years

Figure 4.1 Mortality (%) in children aged 5–9 years by cause of death, New Zealand 2008–2012 combined (n=132 deaths)



Source: Mortality Review Database

Figure 4.2 Mortality (number of deaths) in children aged 5–9 years by cause of death and year, New Zealand 2002–2012 (n=366 deaths)



Source: Mortality Review Database

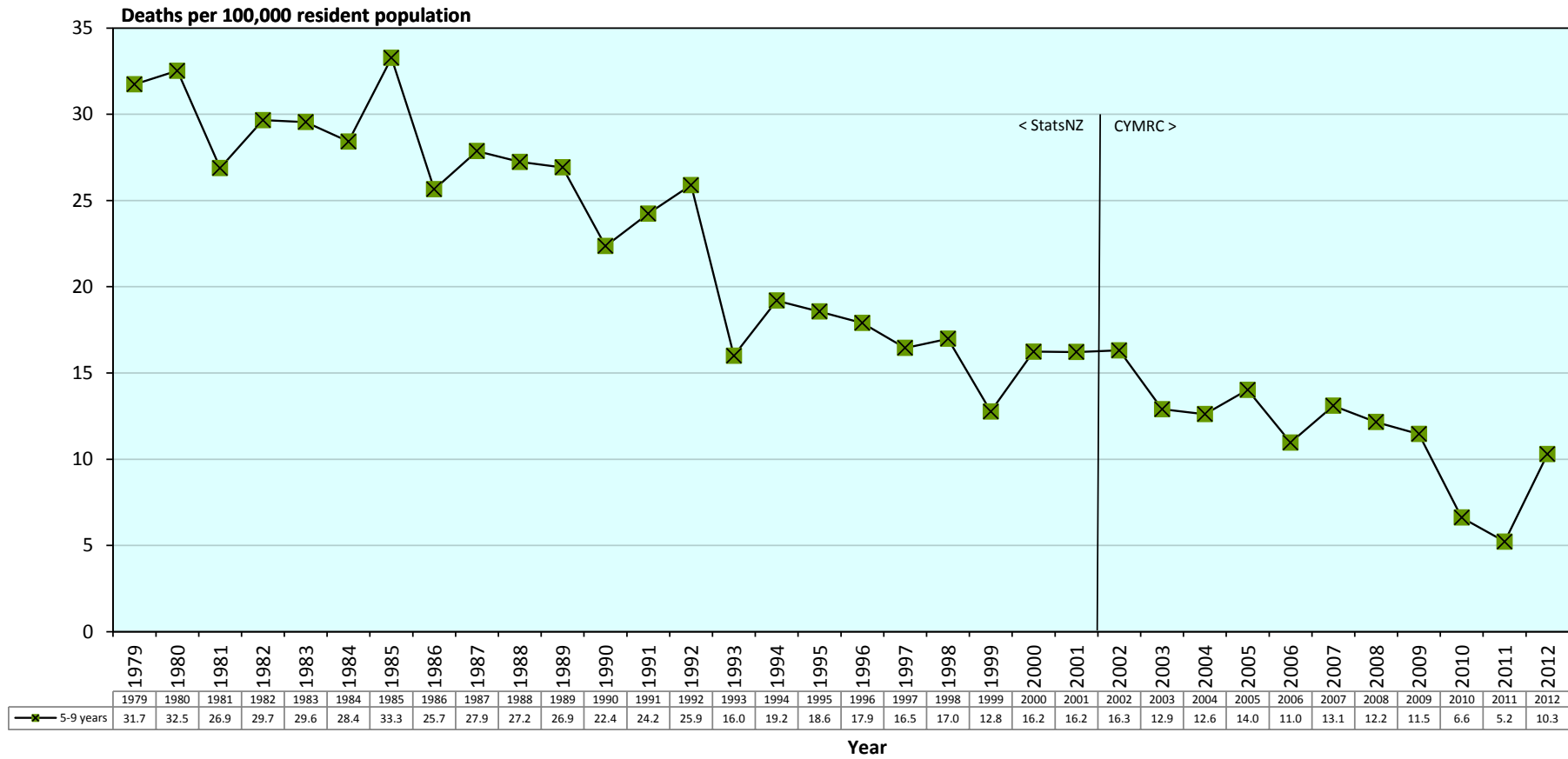
Table 4.1 Mortality (number of deaths and rates per 100,000 resident population) in children aged 5–9 years by cause of death and year, New Zealand 2008–2012 (n=132 deaths)

Cause of death	2008	2009	2010	2011	2012	Total	%	Rate 2008–2012
Medical								
Infectious and parasitic disease	1	-	-	1	-	2	1.5	s
Neoplasms	10	6	7	3	6	32	24.2	2.22
Diseases of the blood and blood-forming organs and disorders of the immune system	-	-	-	-	-	-	-	-
Endocrine, nutritional and metabolic diseases	-	1	1	2	5	9	6.8	0.62
Mental and behavioural disorders	-	-	-	-	-	-	-	-
Diseases of the nervous system	3	5	1	3	4	16	12.1	1.11
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	4	-	1	1	-	6	4.5	0.42
Diseases of the respiratory system	2	3	1	2	2	10	7.6	0.69
Diseases of the digestive system	1	-	-	-	-	1	0.8	s
Diseases of the skin and subcutaneous tissue	-	-	-	-	-	-	-	-
Diseases of the musculoskeletal system and connective tissue	-	1	-	-	-	1	0.8	s
Diseases of the genitourinary system	-	-	-	-	-	-	-	-
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	-	-	-	-	-	-	-	-
Congenital anomalies	3	1	4	1	1	10	7.6	0.69
Symptoms & abnormal findings not elsewhere classified	-	-	-	-	1	1	0.8	s
Total medical	24	17	15	13	19	88	66.7	6.10
Unintentional injury (includes undetermined intent and legal intervention/war)								
Cut/pierce	-	-	-	-	-	-	-	-
Drowning	2	1	-	-	1	4	3.0	0.28
Fall	-	1	-	-	-	1	0.8	s
Fire/hot object or substance	1	2	1	-	-	4	3.0	0.28
Firearm	-	-	-	-	-	-	-	-
Machinery	-	-	-	-	-	-	-	-
Transport	4	9	2	1	8	24	18.2	1.66
Natural/environmental	-	-	-	-	-	-	-	-
Overexertion	-	-	-	-	-	-	-	-
Poisoning	-	-	-	-	1	1	0.8	s
Struck by, against	-	1	-	-	1	2	1.5	s
Suffocation	2	-	-	-	-	2	1.5	s
Other specified, classifiable	1	-	-	-	-	1	0.8	s
Other specified, not elsewhere classified	-	1	-	-	-	1	0.8	s
Unspecified	-	-	-	-	-	-	-	-
Complications of medical and surgical care	-	-	-	-	-	-	-	-
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total unintentional injury	10	15	3	1	11	40	30.3	2.77
Intentional injury								
Assault	1	1	1	-	-	3	2.3	0.21
Suicide	-	-	-	1	-	1	0.8	s
Total intentional injury	1	1	1	1	-	4	3.0	0.28
Missing data	-	-	-	-	-	-	-	-
Total	35	33	19	15	30	132	100.0	9.16

's' indicates rate not calculated due to small numbers

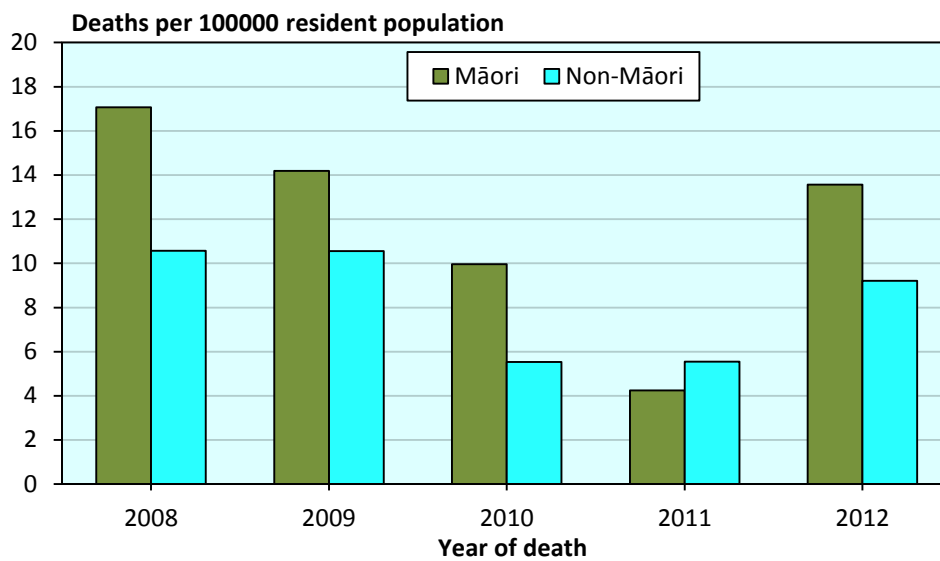
Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

Figure 4.3 Mortality (rates per 100,000 population) in children aged 5–9 years, New Zealand 1979–2012



Source: Numerator 1979-2001: Statistics New Zealand. 2002-2012: Mortality Review Database. Denominator Statistics New Zealand estimated population ages 5-9 years, 1979-2012.

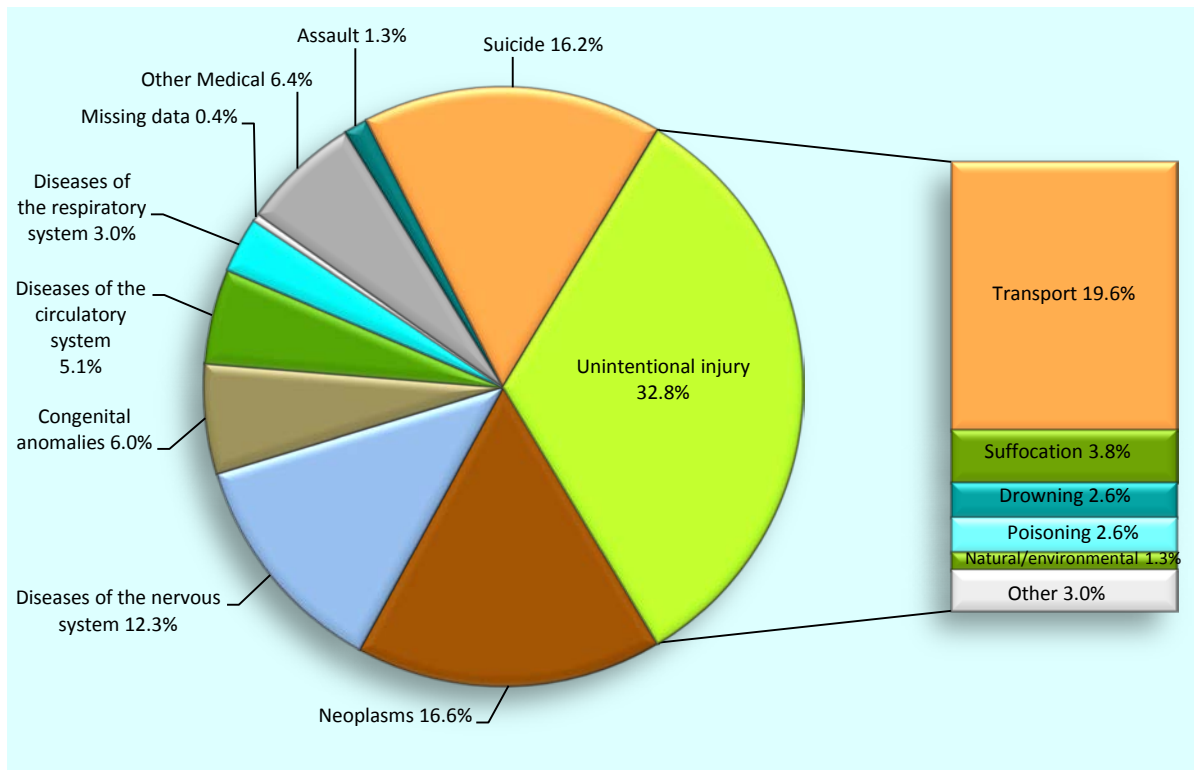
Figure 4.4 Mortality (rates per 100,000 resident population) in children aged 5–9 years, Māori and non-Māori, New Zealand 2008–2012 (n=132 deaths)



Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

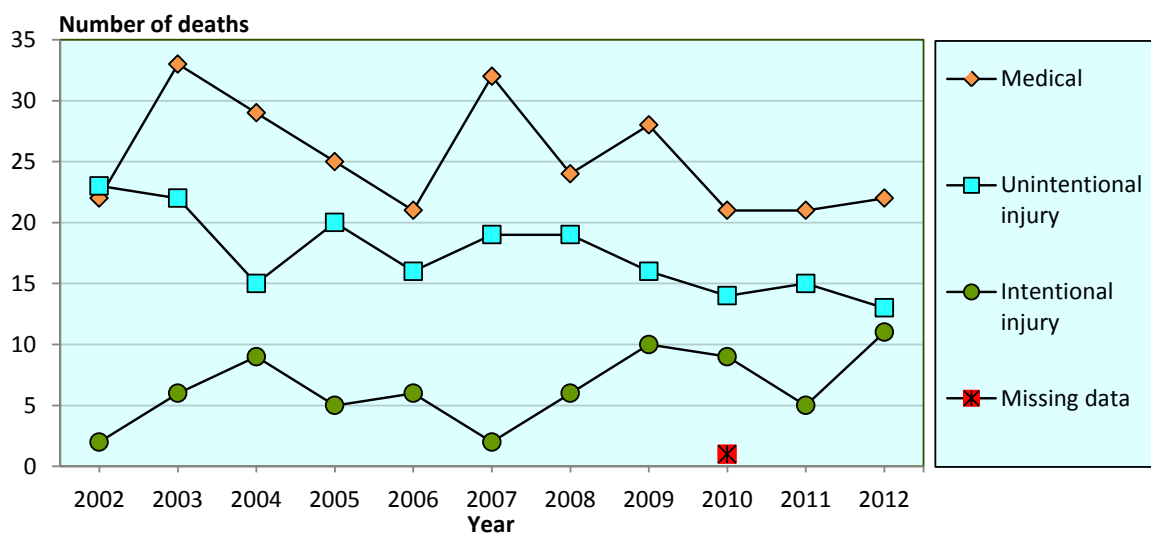
5. Children aged 10–14 years

Figure 5.1 Mortality (%) in children aged 10–14 years by cause of death, New Zealand 2008–2012 combined (n=235 deaths)



Source: Mortality Review Database

Figure 5.2 Mortality (number of deaths) in children aged 10–14 years by cause of death and year, New Zealand 2002–2012 (n=542 deaths)



Source: Mortality Review Database

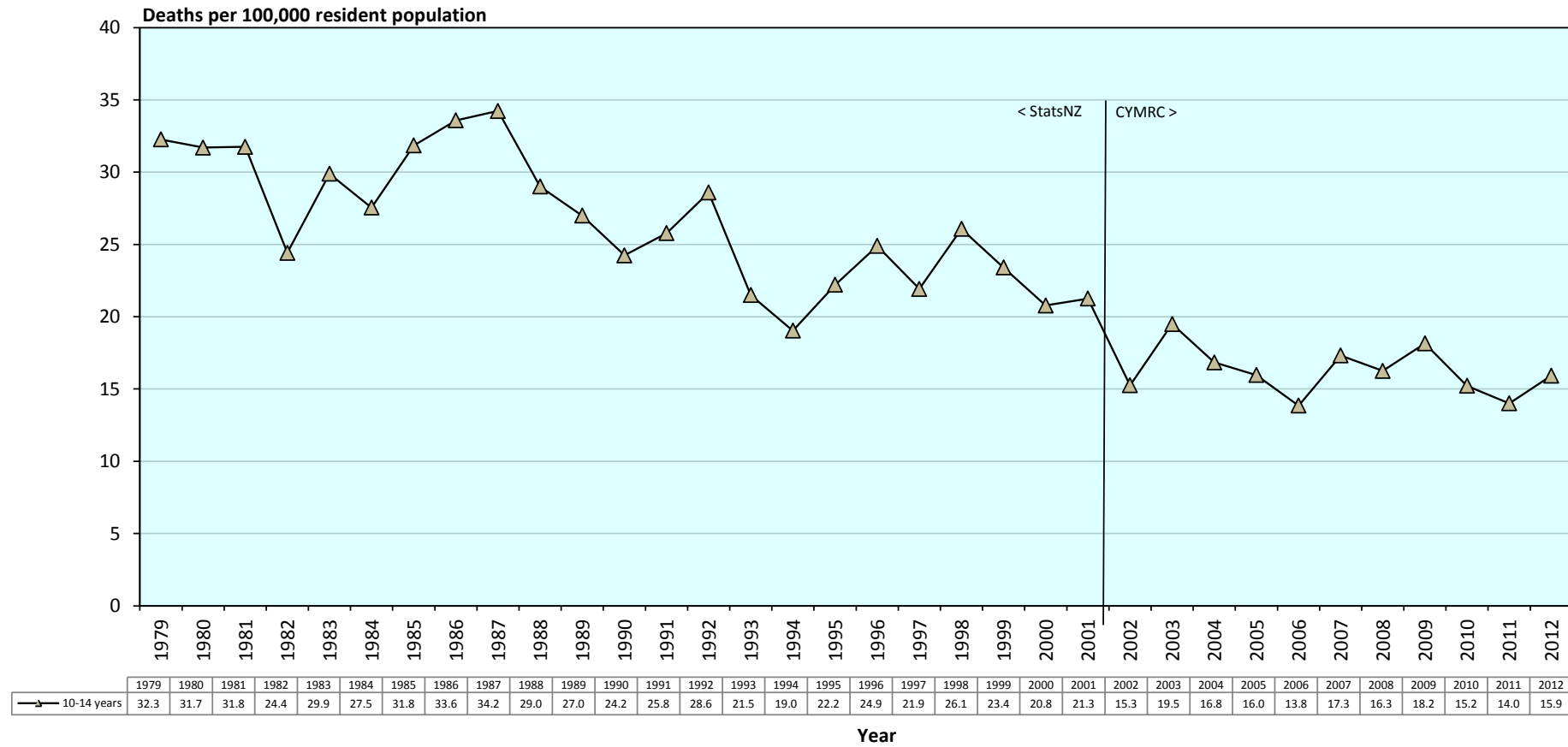
Table 5.1 Mortality (number of deaths and rates per 100,000 resident population) in children aged 10–14 years by cause of death and year, New Zealand 2008–2012 (n=235 deaths)

Cause of death	2008	2009	2010	2011	2012	Total	%	Rate 2008–2012
Medical								
Infectious and parasitic disease	-	1	-	1	1	3	1.3	0.20
Neoplasms	13	6	7	6	7	39	16.6	2.64
Diseases of the blood and blood-forming organs and disorders of the immune system	-	-	-	-	-	-	-	-
Endocrine, nutritional and metabolic diseases	-	-	2	2	-	4	1.7	0.27
Mental and behavioural disorders	-	1	-	-	-	1	0.4	s
Diseases of the nervous system	3	8	3	7	8	29	12.3	1.96
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	3	3	3	2	1	12	5.1	0.81
Diseases of the respiratory system	1	2	2	-	2	7	3.0	0.47
Diseases of the digestive system	-	1	-	-	2	3	1.3	0.20
Diseases of the skin and subcutaneous tissue	-	-	-	-	-	-	-	-
Diseases of the musculoskeletal system and connective tissue	-	1	-	-	-	1	0.4	s
Diseases of the genitourinary system	-	-	-	-	-	-	-	-
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	-	-	-	1	-	1	0.4	s
Congenital anomalies	3	5	3	2	1	14	6.0	0.95
Symptoms & abnormal findings not elsewhere classified	1	-	1	-	-	2	0.9	s
Total medical	24	28	21	21	22	116	49.4	7.86
Unintentional injury (includes undetermined intent and legal intervention/war)								
Cut/pierce	-	-	-	-	-	-	-	-
Drowning	-	2	1	1	2	6	2.6	0.41
Fall	1	-	-	-	1	2	0.9	s
Fire/hot object or substance	-	1	-	-	-	1	0.4	s
Firearm	-	1	-	-	-	1	0.4	s
Machinery	-	-	-	-	-	-	-	-
Transport	13	7	10	8	8	46	19.6	3.12
Natural/environmental	1	-	1	1	-	3	1.3	0.20
Overexertion	-	-	-	-	-	-	-	-
Poisoning	2	2	1	-	1	6	2.6	0.41
Struck by, against	-	-	1	1	-	2	0.9	s
Suffocation	1	3	-	4	1	9	3.8	0.61
Other specified, classifiable	-	-	-	-	-	-	-	-
Other specified, not elsewhere classified	-	-	-	-	-	-	-	-
Unspecified	-	-	-	-	-	-	-	-
Complications of medical and surgical care	1	-	-	-	-	1	0.4	s
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total unintentional injury	19	16	14	15	13	77	32.8	5.22
Intentional injury								
Assault	1	-	1	1	-	3	1.3	0.20
Suicide	5	10	8	4	11	38	16.2	2.57
Total intentional injury	6	10	9	5	11	41	17.4	2.78
Missing data	-	-	1	-	-	1	0.4	s
Total	49	54	45	41	46	235	100.0	15.92

's' indicates rate not calculated due to small numbers

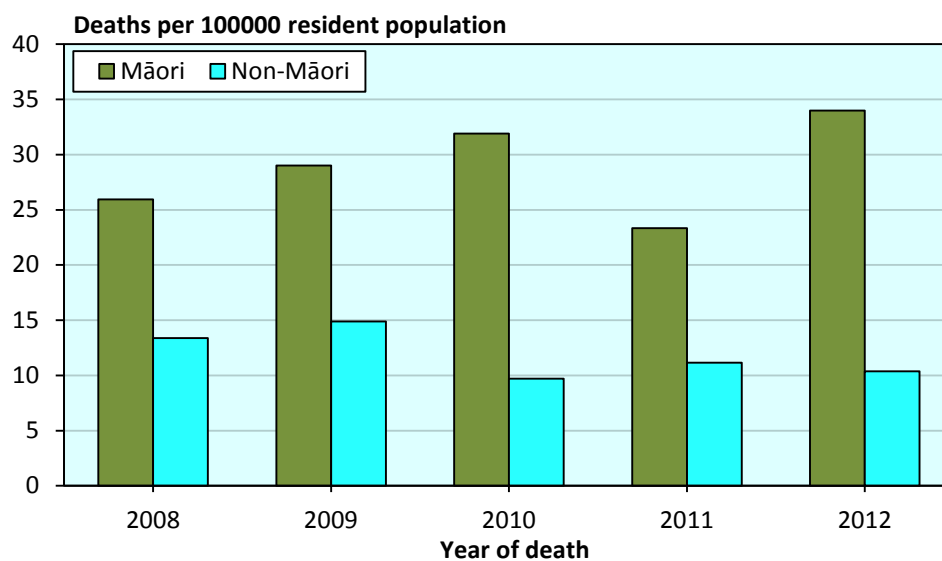
Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection, 2008-2012.

Figure 5.3 Mortality (rates per 100,000 population) in children aged 10–14 years, New Zealand 1979–2012



Source: Numerator 1979-2001: Statistics New Zealand. 2002-2012: Mortality Review Database. Denominator Statistics New Zealand estimated population ages 10-14 years, 1979-2012.

Figure 5.4 Mortality (rates per 100,000 resident population) in children aged 10–14 years, Māori and non-Māori, New Zealand 2008-2012 (n=234 deaths*)

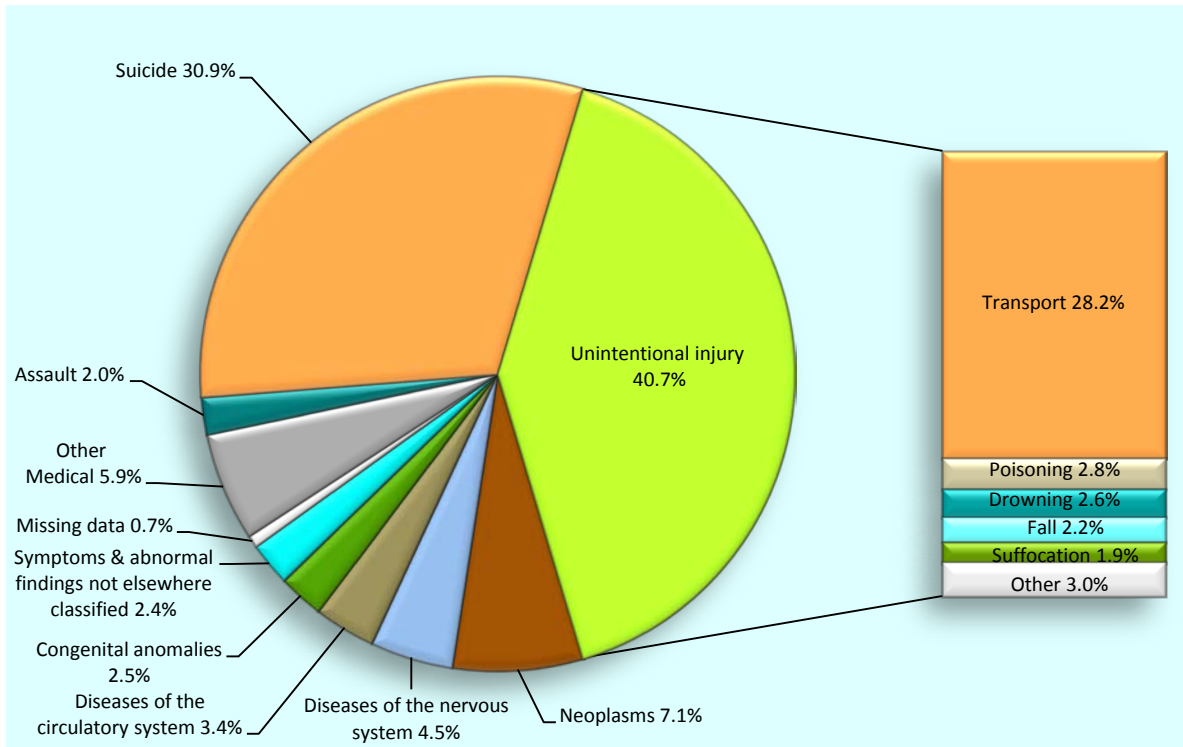


*Excludes 1 case with no available ethnicity data

Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

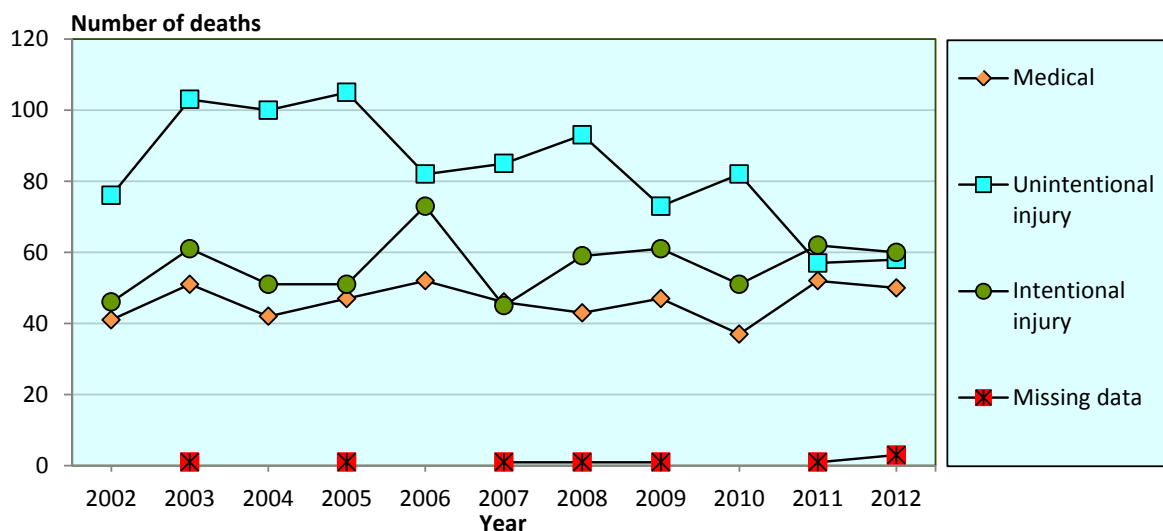
6. Young people aged 15–19 years

Figure 6.1 Mortality (%) in young people aged 15–19 years by cause of death, New Zealand 2008–2012 combined (n=891 deaths)



Source: Mortality Review Database

Figure 6.2 Mortality (number of deaths) in young people aged 15–19 years by cause of death and year, New Zealand 2002–2012 (n=2051 deaths)



Source: Mortality Review Database

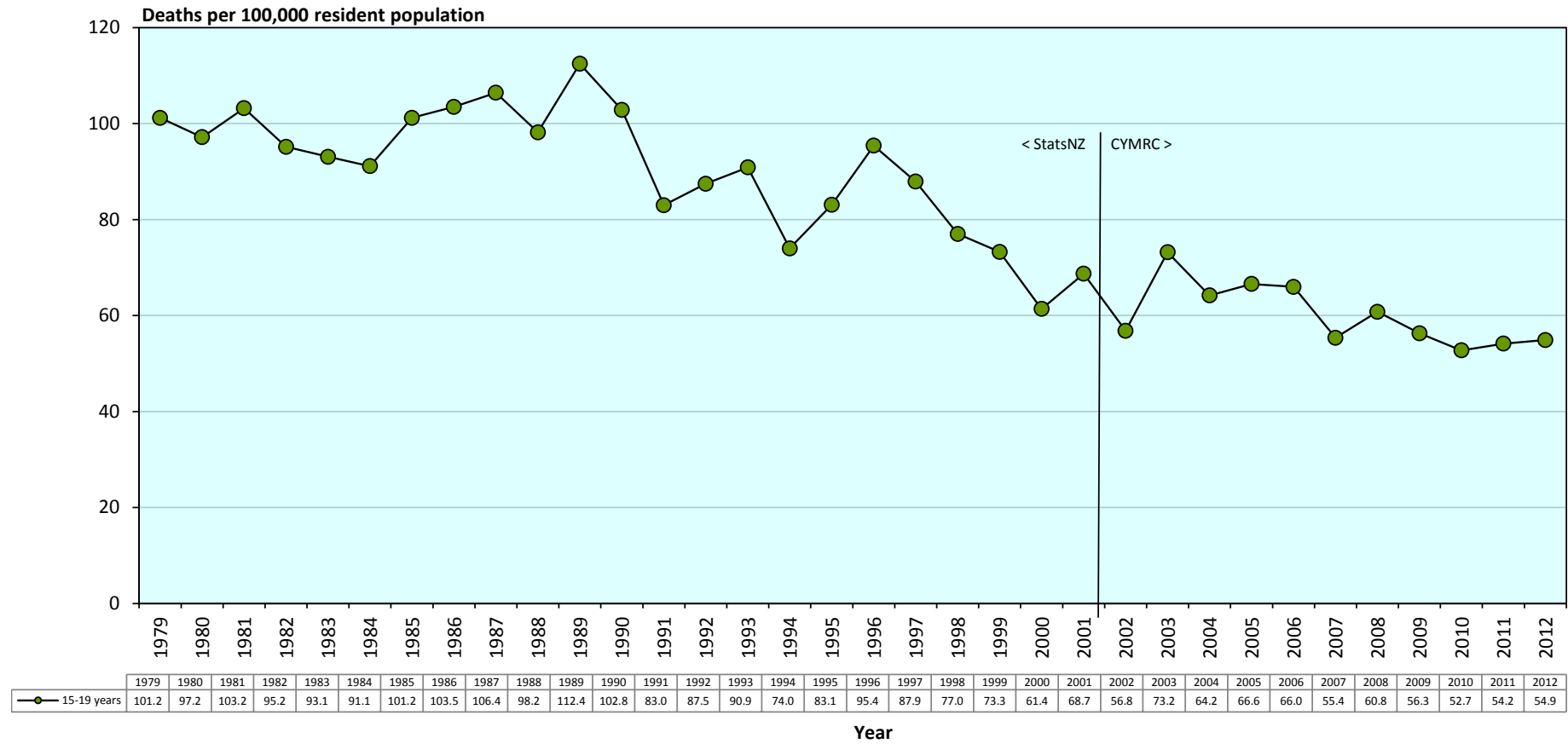
Table 6.1 Mortality (number of deaths and rates per 100,000 resident population) in young people aged 15–19 years by cause of death and year, New Zealand 2008–2012 (n=891 deaths)

Cause of death	2008	2009	2010	2011	2012	Total	%	Rate 2008–2012
Medical								
Infectious and parasitic disease	-	-	1	3	1	5	0.6	0.31
Neoplasms	11	13	13	14	12	63	7.1	3.94
Diseases of the blood and blood-forming organs and disorders of the immune system	-	-	-	1	1	2	0.2	s
Endocrine, nutritional and metabolic diseases	3	5	3	1	3	15	1.7	0.94
Mental and behavioural disorders	-	-	1	-	-	1	0.1	s
Diseases of the nervous system	7	9	3	14	7	40	4.5	2.50
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	11	4	5	7	3	30	3.4	1.88
Diseases of the respiratory system	1	6	4	4	2	17	1.9	1.06
Diseases of the digestive system	-	1	-	1	1	3	0.3	0.19
Diseases of the skin and subcutaneous tissue	1	-	1	1	-	3	0.3	0.19
Diseases of the musculoskeletal system and connective tissue	-	2	1	-	2	5	0.6	0.31
Diseases of the genitourinary system	1	-	-	-	1	2	0.2	s
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	-	-	-	-	-	-	-	-
Congenital anomalies	8	4	4	3	3	22	2.5	1.38
Symptoms & abnormal findings not elsewhere classified	-	3	1	3	14	21	2.4	1.31
Total medical	43	47	37	52	50	229	25.7	14.32
Unintentional injury (includes undetermined intent and legal intervention/war)								
Cut/pierce	-	1	-	-	-	1	0.1	s
Drowning	4	1	11	1	6	23	2.6	1.44
Fall	6	4	2	2	6	20	2.2	1.25
Fire/hot object or substance	-	1	1	-	-	2	0.2	s
Firearm	2	1	-	1	-	4	0.4	0.25
Machinery	-	-	1	-	-	1	0.1	s
Transport	67	55	54	40	35	251	28.2	15.69
Natural/environmental	6	2	-	3	-	11	1.2	0.69
Overexertion	-	-	-	-	-	-	-	-
Poisoning	6	4	6	4	5	25	2.8	1.56
Struck by, against	-	1	-	-	-	1	0.1	s
Suffocation	2	1	4	5	5	17	1.9	1.06
Other specified, classifiable	-	1	2	1	-	4	0.4	0.25
Other specified, not elsewhere classified	-	-	1	-	1	2	0.2	s
Unspecified	-	-	-	-	-	-	-	-
Complications of medical and surgical care	-	1	-	-	-	1	0.1	s
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total unintentional injury	93	73	82	57	58	363	40.7	22.70
Intentional injury								
Assault	6	5	3	3	1	18	2.0	1.13
Suicide	53	56	48	59	59	275	30.9	17.20
Total intentional injury	59	61	51	62	60	293	32.9	18.32
Missing data	1	1	-	1	3	6	0.7	0.38
Total	196	182	170	172	171	891	100.0	55.71

's' indicates rate not calculated due to small numbers

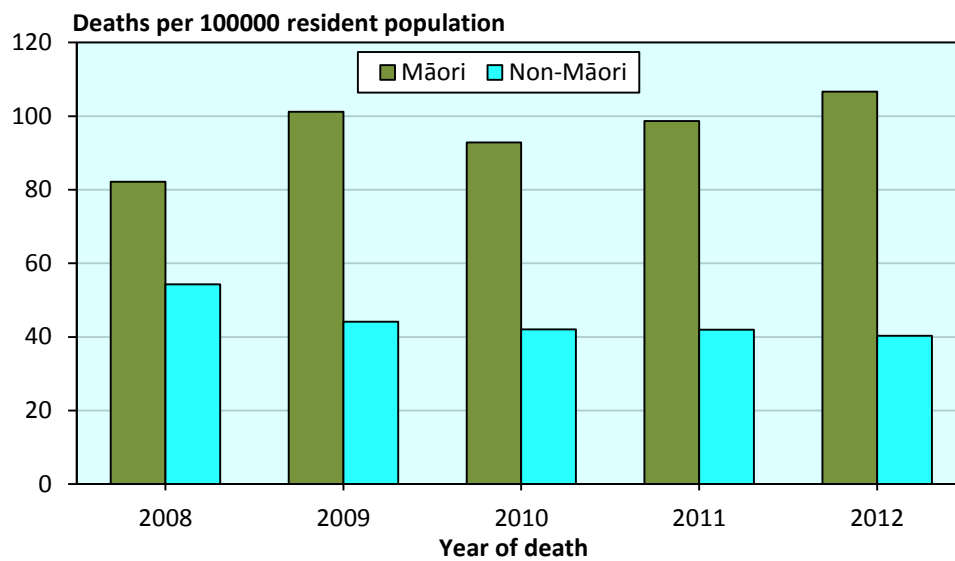
Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

Figure 6.3 Mortality (rates per 100,000 population) in young people aged 15–19 years, New Zealand 1979–2012



Source: *Numerator* 1979-2001: Statistics New Zealand. 2002-2012: Mortality Review Database. *Denominator* Statistics New Zealand estimated population ages 15-19 years, 1979-2012.

Figure 6.4 Mortality (rates per 100,000 resident population) in young people aged 15–19 years, Māori and non-Māori, New Zealand 2008–2012 (n=887* deaths)

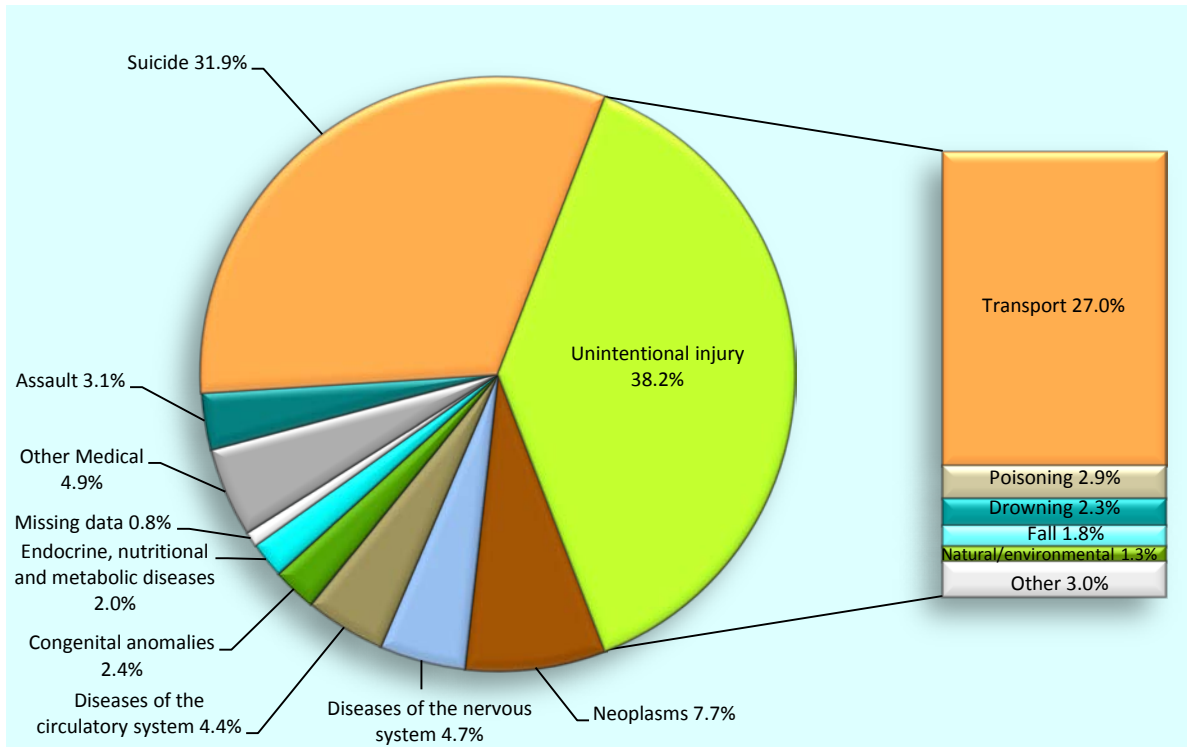


*Excludes 4 cases with no available ethnicity data

Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

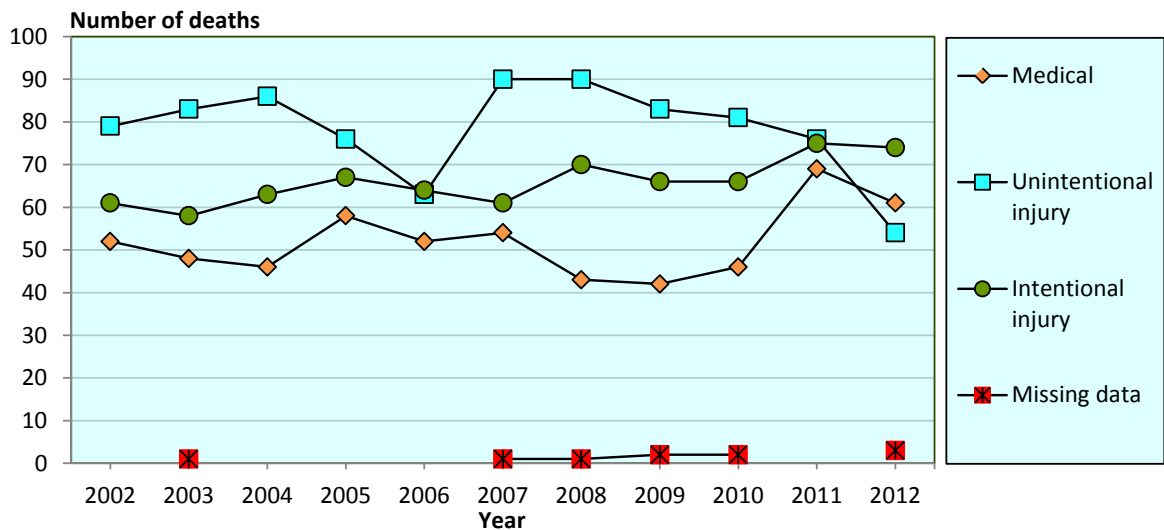
7. Young people aged 20–24 years

Figure 7.1 Mortality (%) in young people aged 20–24 years by cause of death, New Zealand 2008–2012 combined (n=1004 deaths)



Source: Mortality Review Database

Figure 7.2 Mortality (number of deaths) in young people aged 20–24 years by cause of death and year, New Zealand 2002–2012 (n=2167 deaths)



Source: Mortality Review Database

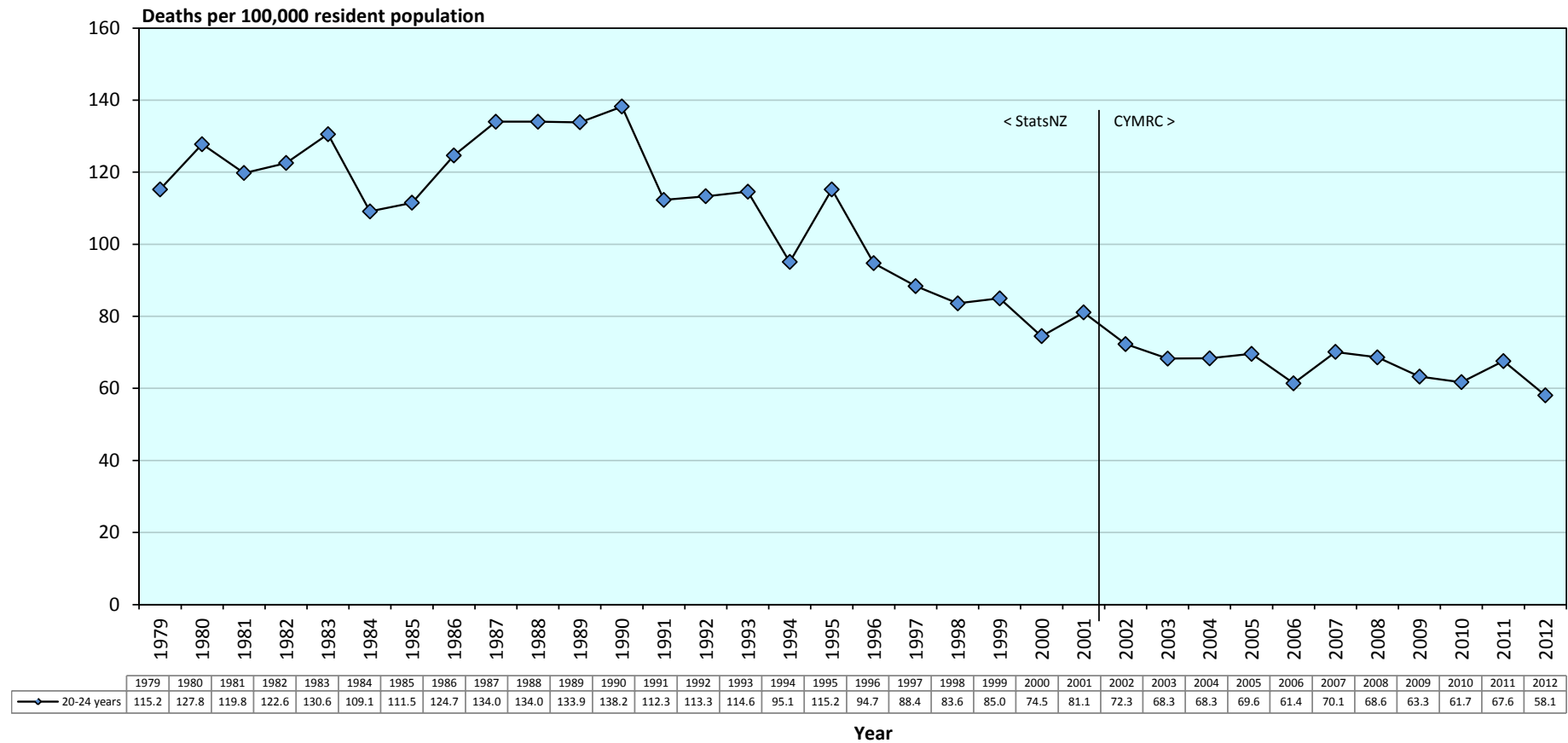
Table 7.1 Mortality (number of deaths and rates per 100,000 resident population) in young people aged 20–24 years by cause of death and year, New Zealand 2008–2012 (n=1004 deaths)

Cause of death	2008	2009	2010	2011	2012	Total	%	Rate 2008–2012
Medical								
Infectious and parasitic disease	-	1	-	1	2	4	0.4	0.25
Neoplasms	17	8	16	20	16	77	7.7	4.88
Diseases of the blood and blood-forming organs and disorders of the immune system	-	1	1	-	-	2	0.2	s
Endocrine, nutritional and metabolic diseases	4	3	2	7	4	20	2.0	1.27
Mental and behavioural disorders	-	-	1	-	-	1	0.1	s
Diseases of the nervous system	6	6	8	14	13	47	4.7	2.98
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	8	10	10	9	7	44	4.4	2.79
Diseases of the respiratory system	2	5	3	4	3	17	1.7	1.08
Diseases of the digestive system	-	2	-	1	3	6	0.6	0.38
Diseases of the skin and subcutaneous tissue	-	-	-	1	-	1	0.1	s
Diseases of the musculoskeletal system and connective tissue	1	-	1	1	1	4	0.4	0.25
Diseases of the genitourinary system	1	-	-	2	1	4	0.4	0.25
Pregnancy, childbirth and the puerperium	-	-	-	1	2	3	0.3	0.19
Certain conditions originating in the perinatal period	-	-	-	-	-	-	-	-
Congenital anomalies	4	6	4	6	4	24	2.4	1.52
Symptoms & abnormal findings not elsewhere classified	-	-	-	2	5	7	0.7	0.44
Total medical	43	42	46	69	61	261	26.0	16.55
Unintentional injury (includes undetermined intent and legal intervention/war)								
Cut/pierce	-	1	-	-	1	2	0.2	s
Drowning	3	4	6	6	4	23	2.3	1.46
Fall	6	4	2	4	2	18	1.8	1.14
Fire/hot object or substance	3	2	-	-	-	5	0.5	0.32
Firearm	-	-	-	1	-	1	0.1	s
Machinery	1	1	-	-	-	2	0.2	s
Transport	68	57	59	47	40	271	27.0	17.19
Natural/environmental	-	1	-	11	1	13	1.3	0.82
Overexertion	-	-	-	-	-	-	-	-
Poisoning	6	6	10	5	2	29	2.9	1.84
Struck by, against	-	1	1	1	1	4	0.4	0.25
Suffocation	2	3	-	-	3	8	0.8	0.51
Other specified, classifiable	1	3	3	1	-	8	0.8	0.51
Other specified, not elsewhere classified	-	-	-	-	-	-	-	-
Unspecified	-	-	-	-	-	-	-	-
Complications of medical and surgical care	-	-	-	-	-	-	-	-
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total unintentional injury	90	83	81	76	54	384	38.2	24.35
Intentional injury								
Assault	5	8	4	6	8	31	3.1	1.97
Suicide	65	58	62	69	66	320	31.9	20.29
Total intentional injury	70	66	66	75	74	351	35.0	22.26
Missing data	1	2	2	-	3	8	0.8	0.51
Total	204	193	195	220	192	1004	100.0	63.67

's' indicates rate not calculated due to small numbers

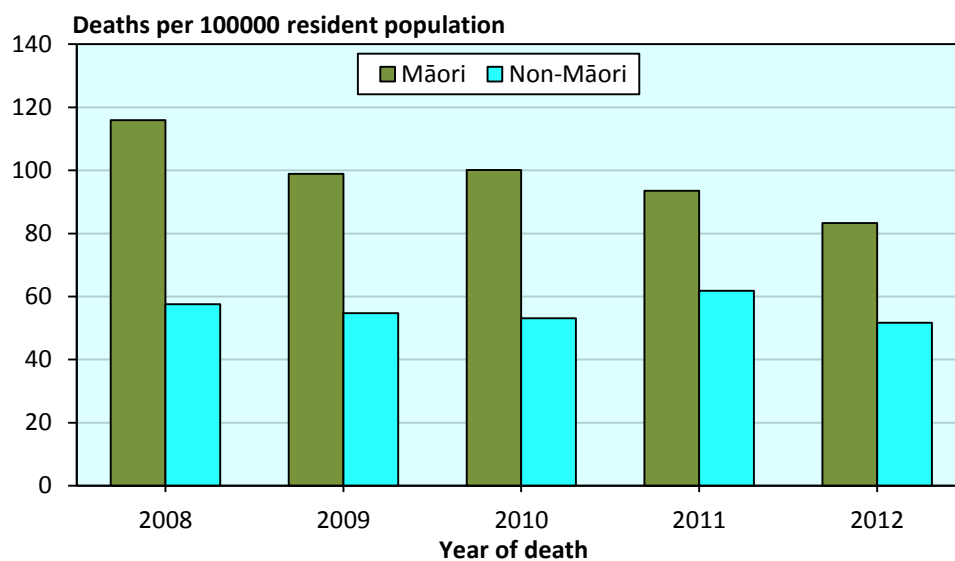
Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

Figure 7.3 Mortality (rates per 100,000 population) in young people aged 20–24 years, New Zealand 1979–2012



Source: *Numerator* 1979-2001: Statistics New Zealand. 2002-2012: Mortality Review Database. *Denominator* Statistics New Zealand estimated population ages 20-24 years, 1979-2012.

Figure 7.4 Mortality (rates per 100,000 resident population) in young people aged 20–24 years, Māori and non-Māori, New Zealand 2008–2012 (n=1001 deaths*)

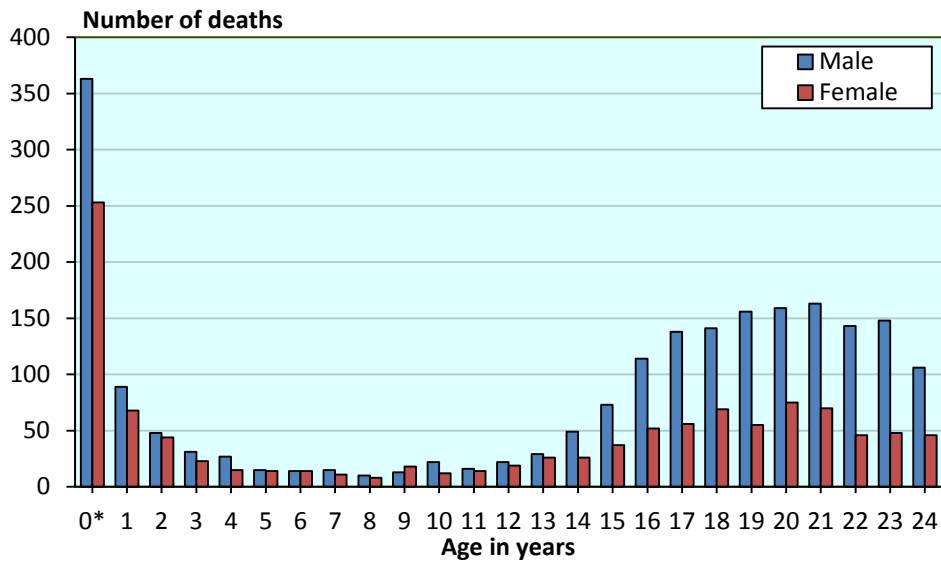


*Excludes 3 cases with no available ethnicity data

Source: *Numerator* Mortality Review Database; *Denominator* Statistics New Zealand population projection 2008-2012

8. Additional Data

Figure 8.1 Mortality (number of deaths) in children and young people aged 28 days to 24 years by year of age and sex, New Zealand 2008-2012 combined (n=3223* deaths)



*Excludes 2 cases of indeterminate gender
Source: Mortality Review Database

Table 8.1 Mortality (number of deaths) in children and young people aged 28 days to 24 years by age group and year, New Zealand 1979–2012

Year	<1 year*	1–4 years	5–9 years	10–14 years	15–19 years	20–24 years	Total
1979	309	150	97	98	320	302	1276
1980	356	138	96	96	306	342	1334
1981	310	160	77	97	316	327	1287
1982	323	130	82	75	287	345	1242
1983	353	111	79	92	279	381	1295
1984	367	120	74	84	274	323	1242
1985	320	113	85	95	307	326	1246
1986	330	135	65	97	312	351	1290
1987	326	112	70	95	324	372	1299
1988	349	117	68	77	298	367	1276
1989	336	111	67	70	335	362	1281
1990	255	120	56	62	299	375	1167
1991	238	98	63	67	239	324	1029
1992	213	102	68	74	245	331	1033
1993	206	110	43	56	248	336	999
1994	209	99	53	50	199	277	887
1995	205	90	53	59	223	331	961
1996	195	96	53	67	258	266	935
1997	181	100	50	60	238	242	871
1998	134	85	52	73	209	222	775
1999	153	75	39	67	199	220	753
2000	144	86	49	61	168	190	698
2001	142	74	48	64	191	208	727
2002	107	81	48	47	163	192	638
2003	117	66	38	61	216	190	688
2004	152	57	37	53	193	195	687
2005	109	59	41	50	204	201	664
2006	150	60	32	43	207	179	671
2007	142	81	38	53	177	206	697
2008	134	81	35	49	196	204	699
2009	134	77	33	54	182	193	673
2010	126	65	19	45	170	195	620
2011	126	59	15	41	172	220	633
2012	98	63	30	46	171	192	600

*This category represents infants 28 days and older, and less than one calendar year in age

Source: 1979-2001: Statistics New Zealand. 2002-2012: Mortality Review Database

Table 8.2 Mortality (number of deaths) in children and young people aged 28 days to 24 years, by cause of death and sex, 2008-2012 combined (n=3223 deaths*)

	Male	Female	Total
Medical			
Infectious and parasitic disease	42	32	74
Neoplasms	139	119	258
Diseases of the blood and blood-forming organs and disorders of the immune system	6	5	11
Endocrine, nutritional and metabolic diseases	44	27	71
Mental and behavioural disorders	1	2	3
Diseases of the nervous system	109	71	180
Diseases of the eye and adnexa	0	0	0
Diseases of the ear and mastoid process	0	0	0
Diseases of the circulatory system	74	51	125
Diseases of the respiratory system	70	55	125
Diseases of the digestive system	9	11	20
Diseases of the skin and subcutaneous tissue	5	0	5
Diseases of the musculoskeletal system and connective tissue	2	10	12
Diseases of the genitourinary system	6	3	9
Pregnancy, childbirth and the puerperium	0	3	3
Certain conditions originating in the perinatal period	45	37	82
Congenital anomalies	122	99	221
Symptoms & abnormal findings not elsewhere classified	27	8	35
Total medical	701	533	1234
Percentage by sex	56.8	43.2	100.0
Unintentional injury (undetermined intent, legal intervention war)			
Cut/pierce	2	1	3
Drowning	70	19	89
Fall	38	7	45
Fire/hot object or substance	8	8	16
Firearm	6	0	6
Machinery	5	1	6
Transport	473	173	646
Natural/environmental	18	14	32
Overexertion	0	0	0
Poisoning	44	18	62
Struck by, against	11	3	14
Suffocation	34	13	47
Other specified, classifiable	12	1	13
Other specified, not elsewhere classified	4	0	4
Unspecified	0	2	2
Complications of medical and surgical care	1	2	3
Sequelae of surgical and medical care as external cause	0	0	0
Total unintentional injury	726	262	988
Percentage by sex	73.5	26.5	100.0
Intentional injury			
Assault	43	36	79
Suicide	453	181	634
Total intentional injury	496	217	713
Percentage by sex	69.6	30.4	100.0
SUDI/SUD			
SUDI (28 days to <1 year)	153	93	246
SUD (1-2 years)	8	8	16
Total SUDI/SUD	161	101	262
Percentage by sex	61.5	38.5	100.0
Missing data	20	6	
Total	2104	1119	3223
Percentage by sex	65.3	34.7	100.0

* Excludes 2 cases of indeterminate gender

Source: Mortality Review Database

Overseas residents

Table 8.3 Mortality (number of deaths) in children and young people aged 28 days to 24 years among non-New Zealand residents, by cause of death and age group, 2008-2012 combined (n=74 deaths)

Category	<1 year*	1-4 years	5-9 years	10-14 years	15-19 years	20-24 years	Total	%
Medical	3	1	1	1	4	4	14	18.9
Unintentional injury	0	0	1	1	17	35	54	73.0
Intentional injury	2	0	0	0	0	1	3	4.1
SUDI/SUD	1	0	0	0	0	0	1	1.4
Missing data	0	0	0	1	0	1	2	2.7
Total	6	1	2	3	21	41	74	100.0

* This category represents infants 28 days and older, and less than one calendar year in age

Source: Mortality Review Database

Table 8.4 Mortality (number of deaths) in children and young people aged 28 days to 24 years among non-New Zealand residents by country of residence, 2008-2012 combined (n=74 deaths)

Country	Deaths per year					Total deaths	
	2008	2009	2010	2011	2012	Number	%
Australia	3	5	3	2	0	13	17.6
Canada	1	0	0	1	0	2	2.7
China	0	0	1	0	0	1	1.4
Cook Islands	0	0	0	1	0	1	1.4
England	3	1	1	0	0	5	6.8
Fiji	0	0	0	1	0	1	1.4
France	0	1	0	1	1	3	4.1
French Polynesia	1	0	2	0	0	3	4.1
Germany	0	0	2	1	1	4	5.4
India	0	0	0	1	1	2	2.7
Ireland	1	0	1	0	0	2	2.7
Israel	0	1	0	3	0	4	5.4
Italy	0	0	0	0	1	1	1.4
Japan	0	0	0	12	0	12	16.2
Korea	0	0	0	2	0	2	2.7
Malaysia	2	0	0	0	0	2	2.7
Mexico	0	0	0	0	1	1	1.4
Philippines	1	0	0	0	0	1	1.4
Samoa	1	0	3	0	1	5	6.8
South Korea	0	1	1	0	0	2	2.7
Tonga	0	0	1	0	0	1	1.4
Uruguay	0	0	1	0	0	1	1.4
USA	0	1	1	0	2	4	5.4
Vietnam	0	0	1	0	0	1	1.4
Total	13	10	18	25	8	74	100.0

Source: Mortality Review Database

Mortality by District Health Board of residence

Table 8.5 Mortality (number of deaths and age-specific mortality rates) by DHB of residence and age group, New Zealand 2008-2012 (n=3225 deaths)

DHB	28 days– <1 year	Rate*: 28 days– <1 year	1–4 years	Rate‡: 1–4 years	5–9 years	Rate‡: 5–9 years	10–14 years	Rate‡: 10–14 years	15–19 years	Rate‡: 15–19 years	20–24 years	Rate‡: 20–24 years	Total	%	Rate‡ per DHB	Number of deaths outside DHB of residence	Number of deaths in DHB of residence	% resident deaths outside DHB
Northland	38	3.25	23	50.74	7	12.41	14	23.49	57	103.17	31	73.90	170	5.3	62.91	19	151	11.2
Waitemata	43	1.09	31	20.54	15	8.35	17	9.11	61	30.33	92	49.40	259	8.0	27.44	77	182	29.7
Auckland	57	1.72	29	25.39	11	8.71	15	12.40	63	41.49	74	36.53	249	7.7	33.25	40	209	16.1
Counties Manukau	108	2.46	51	31.11	21	10.64	33	16.78	99	49.28	130	70.13	442	13.7	44.74	119	323	26.9
Waikato	74	2.65	24	21.91	13	10.18	26	19.71	102	72.88	89	68.20	328	10.2	49.14	31	297	9.5
Lakes	22	2.72	9	27.90	3	7.82	9	22.99	30	80.00	30	94.55	103	3.2	55.05	20	83	19.4
Bay of Plenty	32	2.15	20	34.01	6	8.32	20	26.39	59	80.93	60	105.69	197	6.1	56.08	45	152	22.8
Tairāwhiti	8	2.06	6	37.97	1	s	5	25.99	18	100.33	16	111.46	54	1.7	60.08	9	45	16.7
Hawke's Bay	31	2.65	18	39.50	6	10.94	16	27.25	33	58.96	39	88.18	143	4.4	52.76	21	122	14.7
Taranaki	17	2.14	7	22.54	5	13.83	4	10.48	29	74.97	18	55.02	80	2.5	43.31	15	65	18.8
Whanganui	18	4.03	8	45.42	3	14.45	9	38.89	14	59.94	16	80.46	68	2.1	62.26	15	53	22.1
MidCentral	18	1.55	18	38.58	3	5.49	8	13.85	36	53.60	61	91.98	144	4.5	47.34	31	113	21.5
Capital & Coast	30	1.51	17	21.72	7	7.96	6	7.05	39	39.27	43	33.20	142	4.4	28.40	23	119	16.2
Hutt Valley	31	2.90	14	32.15	4	7.91	5	9.77	26	48.26	23	47.62	103	3.2	39.90	21	82	20.4
Wairarapa	4	1.49	4	37.09	0	-	3	22.10	11	82.27	10	101.99	32	1.0	50.82	9	23	28.1
Nelson Marlborough	7	0.84	6	17.14	6	13.92	1	s	32	71.59	22	60.19	74	2.3	34.81	17	57	23.0
West Coast	0	0.00	4	46.16	5	50.40	1	s	11	101.34	12	139.21	33	1.0	65.10	4	29	12.1
Canterbury	45	1.41	32	24.90	8	5.32	23	14.83	79	44.51	132	70.15	319	9.9	38.36	21	298	6.6
South Canterbury	4	1.28	5	36.13	1	s	3	16.21	27	144.19	18	124.83	58	1.8	68.10	7	51	12.1
Otago	16	1.53	10	23.23	5	9.61	9	16.77	35	42.70	59	62.53	134	4.2	39.94	13	121	9.7
Southland	15	1.84	9	27.75	2	s	8	22.16	30	82.34	29	84.07	93	2.9	50.73	17	76	18.3
Total	618	1.95	345	28.15	132	9.16	235	15.92	891	55.71	1004	63.67	3225	100.0	42.23	574	2651	17.8

's' indicates rate not calculated due to small numbers

* rate per 1000 live births

‡ rate per 100,000 resident population

Source: *Numerator* Mortality Review Database; *Denominator* NZHIS Live Births 2008–2012 for 28 days to less than one year, Statistics New Zealand population projection 2008-2012 for ages 1-24 years.