

NZ Child and Youth Mortality Review Committee

National data overview

NZ MORTALITY REVIEW DATA GROUP

2011

This report contains data from 1979-2010, with most tables and figures for 2006-2010

Methodology

Overview

The Child and Youth Mortality Review process has evolved since the Committee was established nine years ago. 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 CYMRC-appointed DHB 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 and recommendations. 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 relevant 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 all deaths 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

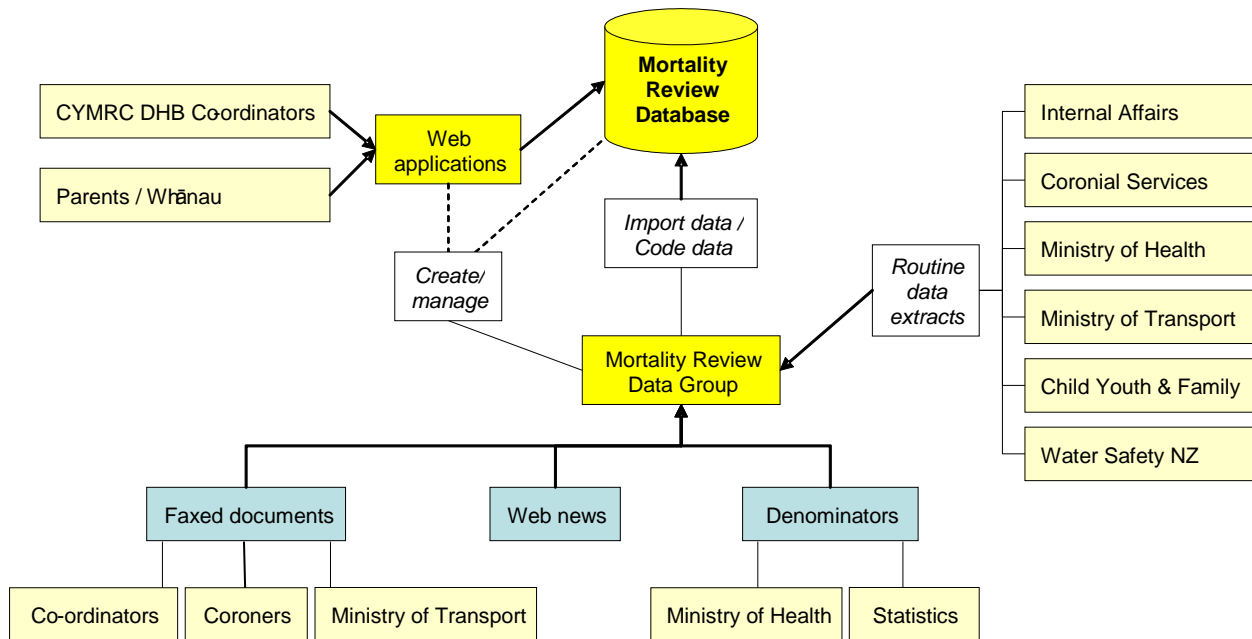


Figure M.1 illustrates these sources of information and some of the processing. The Mortality Review Data Group maintains two websites which allow individuals to directly contribute information. A link on the public website (www.cymrc.health.govt.nz) allows families to provide feedback on health systems. The DHB 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 (pre-2010), electronic format coronial case information (post-2010), copies of news reports 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 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 this can take some years to complete. While this report includes deaths that occurred until 31 December 2010, the 2010 data is the least complete of any year, for the above reasons. The incompleteness in the data is not randomly spread across all causes. Deaths that require an inquest, such as sudden unexpected deaths and some injury deaths, are less likely to have complete cause of death information. Therefore, information relating to deaths in 2010 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

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. 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 (LCYMRG) 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 any 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 CYMRC.

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. A challenging process is to distil this detailed contextual information into recommendations that can work nationally.

Analysis and coding

Mortality data

The data for this report are from the Mortality Review Database. The data were extracted from the database on 7 October 2011. 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 of age. 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 other 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 Main Underlying Cause of Death from the National Mortality Collection, from the Ministry of Health. This was back-dated to include all cases in the database, not just those from 2008 onwards. Where there is no ICD-10-AM code assigned, the cause of death was determined by the information gained through the process of local review of the case.

In addition, for deaths in infants less than one year of age, 'SUDI' (Sudden Unexpected Death in Infancy) was assigned as the cause of death where any one of the following ICD-10-AM codes were listed as the main 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 main 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 is arranged according to the International Collaborative Effort on Injury Statistics classification. This assigns ICD-10 groupings to various headings. The classification system used in this report is slightly different to previous years, hence data from 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 accuracy generally in New Zealand. The ethnicity comparisons in this report are between Māori and non-Māori.

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.

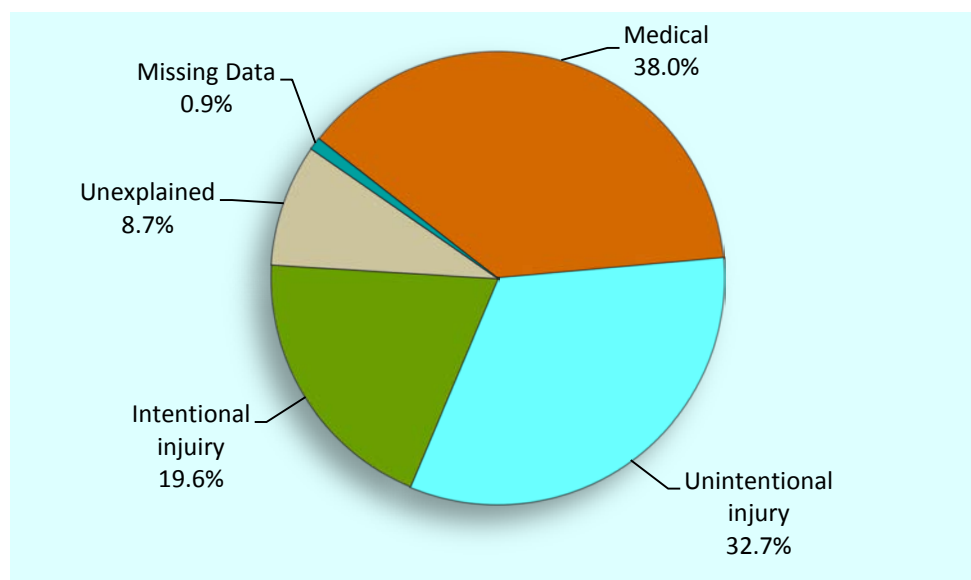
The denominators used in this analysis are from two sources. The first is the number of live births in New Zealand, as supplied by the Ministry of Health. The other denominator used is a derived estimated resident population. This is calculated for each year, and is based on the Statistics New Zealand Estimated Resident Population from census years 2001 and 2006. Linear extrapolation was undertaken to calculate the estimated resident population between 2001 and 2006, and projected out to 2010. The one to four year age group denominator was calculated using the above methods to derive the under four year population, with the number of live births from each year being subtracted off this total to compute the one to four year age group denominator. Rates in this report are presented as per 100 000 age-specific population for most age groups, except for infants less than one year of age where rates are expressed as per thousand live births.

The deaths of non-New Zealand residents are excluded from the main sections of the report because the denominator in rate calculations (as above) excludes visitors from overseas. Data on this population is provided as a supplement, with rates excluded.

New Zealand National Data Overview

The leading causes of death in children and young people aged 28 days to 24 years are medical causes and unintentional injury. Intentional injury is the third leading cause of death overall. The leading causes of death vary by age group, with medical causes and unexplained deaths accounting for the majority of deaths in infants. In young people, the leading causes are injury (unintentional and intentional).

Figure 1.1: Mortality (%) in children and young people aged 28 days to 24 years by cause of death, New Zealand 2006–2010 (n=3356 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 2006–2010 combined (n=3356 deaths)

Category	<1 year*	1–4 years	5–9 years	10–14 years	15–19 years	20–24 years	Total	Percentage (%)
Medical	371	209	95	126	233	242	1276	38.0
Unintentional injury	15	112	59	85	419	409	1099	32.7
Intentional injury	8	22	3	32	274	320	659	19.6
Unexplained	275	17	-	-	-	-	292	8.7
Missing data	14	3	-	1	6	6	30	0.9
Total	683	363	157	244	932	977	3356	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 2006–2010 combined (n=3356 deaths)

Cause of death	<1 year*	1–4 years	5–9 years	10–14 years	15–19 years	20–24 years	Total	%	Rate 2006–2010
Medical									
Infectious and parasitic diseases	38	19	3	2	2	4	68	2.0	0.89
Neoplasms	11	37	34	47	72	77	278	8.3	3.64
Diseases of the blood and blood-forming organs and disorders of immune system	4	5	1	1	1	2	14	0.4	0.18
Endocrine, nutritional and metabolic diseases	11	15	3	7	18	19	73	2.2	0.96
Mental and behavioural disorders	-	-	-	1	1	-	2	0.1	0.03
Diseases of the nervous system	22	28	20	22	39	39	170	5.1	2.23
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-	-
Diseases of the circulatory system	15	18	6	12	31	37	119	3.5	1.56
Diseases of the respiratory system	63	27	10	8	15	14	137	4.1	1.80
Diseases of the digestive system	3	4	1	2	1	4	15	0.4	0.20
Diseases of the skin and subcutaneous tissue	-	-	-	-	2	-	2	0.1	0.03
Diseases of the musculoskeletal system and connective tissue	1	2	2	1	4	7	17	0.5	0.22
Diseases of the genitourinary system	4	-	-	-	1	2	7	0.2	0.09
Pregnancy, childbirth and the puerperium	-	-	-	-	-	3	3	0.1	0.04
Certain conditions originating in the perinatal period	81	2	1	-	-	1	85	2.5	1.11
Congenital anomalies	118	47	14	21	33	26	259	7.7	3.39
Symptoms & abnormal findings not elsewhere classified	-	5	-	2	13	7	27	0.8	0.35
Total medical	371	209	95	126	233	242	1276	38.0	16.72
Non-intentional injury (includes unintentional, undetermined intent, legal intervention/war)#									
Cut/pierce	-	-	-	-	3	3	6	0.2	0.08
Drowning	4	27	3	3	21	22	80	2.4	1.05
Fall	-	6	2	2	17	16	43	1.3	0.56
Fire/hot object or substance	-	6	6	3	7	6	28	0.8	0.37
Firearm	-	-	-	1	4	2	7	0.2	0.09
Machinery	-	3	-	1	-	3	7	0.2	0.09
Transport	8	49	39	53	309	298	756	22.5	9.91
Natural/environmental	-	1	1	4	9	2	17	0.5	0.22
Overexertion	-	-	-	-	-	1	1	0.0	0.01
Poisoning	-	1	1	7	22	33	64	1.9	0.84
Struck by, against	-	5	1	-	2	4	12	0.4	0.16
Suffocation	2	11	2	10	18	8	51	1.5	0.67
Other specified, classifiable	-	-	2	-	4	9	15	0.4	0.20
Other specified, not elsewhere classified	-	1	2	-	2	1	6	0.2	0.08
Unspecified	-	1	-	-	-	1	2	0.1	0.03
Complications of medical and surgical care	-	1	-	1	1	-	3	0.1	0.04
Sequelae of surgical and medical care as external cause	1	-	-	-	-	-	1	0.0	0.01
Total non-intentional injury	15	112	59	85	419	409	1099	32.7	14.40
Intentional injury									
Assault	8	22	3	3	29	28	93	2.8	1.22
Suicide	-	-	-	29	245	292	566	16.9	7.42
Total intentional injury	8	22	3	32	274	320	659	19.6	8.64
Sudden unexpected death									
SUDI (<1 year)†	275	-	-	-	-	-	275	8.2	3.60
SUD (1–2 years)‡	-	17	-	-	-	-	17	0.5	0.22
Total sudden unexpected death	275	17	-	-	-	-	292	8.7	3.83
Missing data	14	3	-	1	6	6	30	0.9	0.39
Total	683	363	157	244	932	977	3356	100.0	43.98

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

See table 1.3 for non-intentional 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* NZHIS Live Births 2006–2010 for 28 days – less than 1 year, NZ MRDG Estimated Resident Population 2006–2010 for 1–24 years of age

Table 1.3: Non-intentional injury by intent and age group, New Zealand 2006–2010 combined (n=1099 deaths)

Non-intentional cause of death	Non-intentional injury (includes unintentional, undetermined intent, legal intervention/war)																		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	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	3	-	-	6
Drowning	4	-	-	27	-	-	3	-	-	3	-	-	21	-	-	22	-	-	80
Fall	-	-	-	6	-	-	2	-	-	2	-	-	17	-	-	16	-	-	43
Fire/hot object or substance	-	-	-	6	-	-	6	-	-	3	-	-	5	2	-	6	-	-	28
Firearm	-	-	-	-	-	-	-	-	-	1	-	-	2	1	1	1	1	-	7
Machinery	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	3	-	-	7
Transport	8	-	-	49	-	-	39	-	-	53	-	-	309	-	-	297	1	-	756
Natural/environmental	-	-	-	1	-	-	1	-	-	4	-	-	9	-	-	2	-	-	17
Overexertion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Poisoning	-	-	-	1	-	-	1	-	-	7	-	-	19	3	-	29	4	-	64
Struck by, against	-	-	-	5	-	-	1	-	-	-	-	-	2	-	-	3	1	-	12
Suffocation	2	-	-	11	-	-	2	-	-	7	3	-	8	10	-	4	4	-	51
Other specified, classifiable	-	-	-	-	-	-	2	-	-	-	-	-	4	-	-	9	-	-	15
Other specified, not elsewhere classified	-	-	-	1	-	-	2	-	-	-	-	-	2	-	-	-	1	-	6
Unspecified	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2
Complications of medical and surgical care	-	-	-	1	-	-	-	-	-	1	-	-	1	-	-	-	-	-	3
Sequelae of surgical and medical care as external cause	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Total non-intentional cause of death	15	-	-	112	-	-	59	-	-	82	3	-	401	17	1	396	13	-	1099

*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

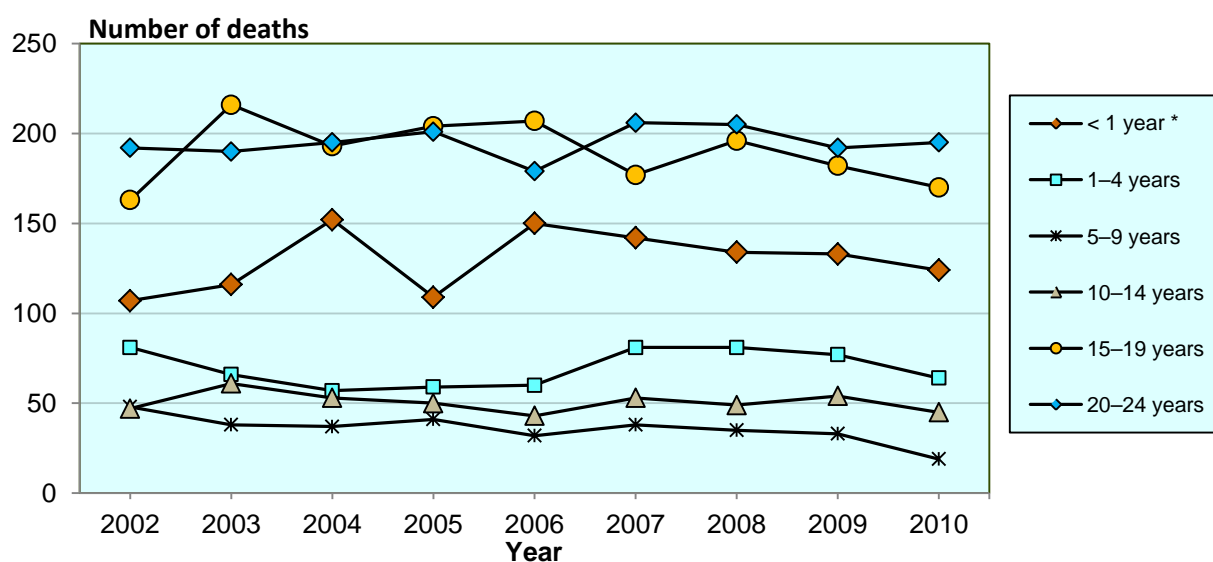
Table 1.4: Mortality (number of deaths) in children and young people aged 28 days to 24 years by age group and year of death, New Zealand 2006–2010 (n=3356 deaths)

Age group	2006	2007	2008	2009	2010*	Total	Percentage (%)
28 days – <1 year	150	142	134	133	124	683	20.4
1–4 years	60	81	81	77	64	363	10.8
5–9 years	32	38	35	33	19	157	4.7
10–14 years	43	53	49	54	45	244	7.3
15–19 years	207	177	196	182	170	932	27.8
20–24 years	179	206	205	192	195	977	29.1
Total	671	697	700	671	617	3356	100.0

* Note: while data from any year may potentially be altered due to Coronial inquests and other such proceedings and late notification of cases, this is particularly true of 2010 data; therefore caution should be used when interpreting these data.

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 2002–2010 (n=6032 deaths)



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

Source: Mortality Review Database

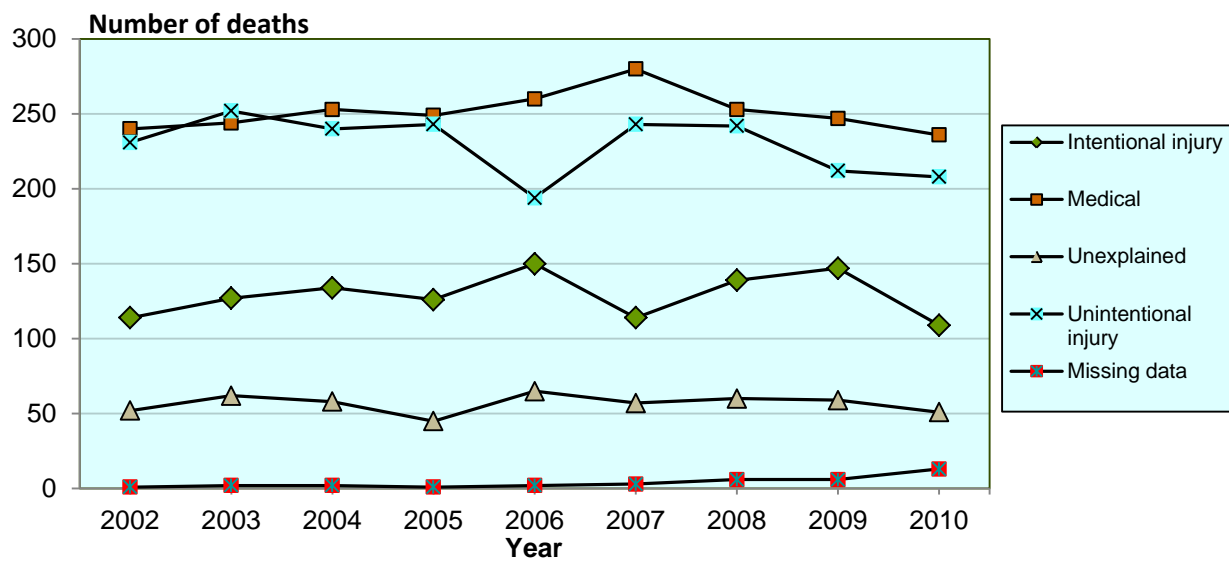
Table 1.5: Mortality (number of deaths) in children and young people aged 28 days to 24 years by cause of death and year, New Zealand 2006–2010 (n=3356 deaths)

Category	2006	2007	2008	2009	2010*	Total	Percentage (%)
Medical	260	280	253	247	236	1276	38.0
Unintentional injury	194	243	242	212	208	1099	32.7
Intentional injury	150	114	139	147	109	659	19.6
Unexplained	65	57	60	59	51	292	8.7
Missing data	2	3	6	6	13	30	0.9
Total	671	697	700	671	617	3356	100.0

* Note: while data from any year may potentially be altered due to Coronial inquests and other such proceedings and late notification of cases, this is particularly true of 2010 data; therefore caution should be used when interpreting these data.

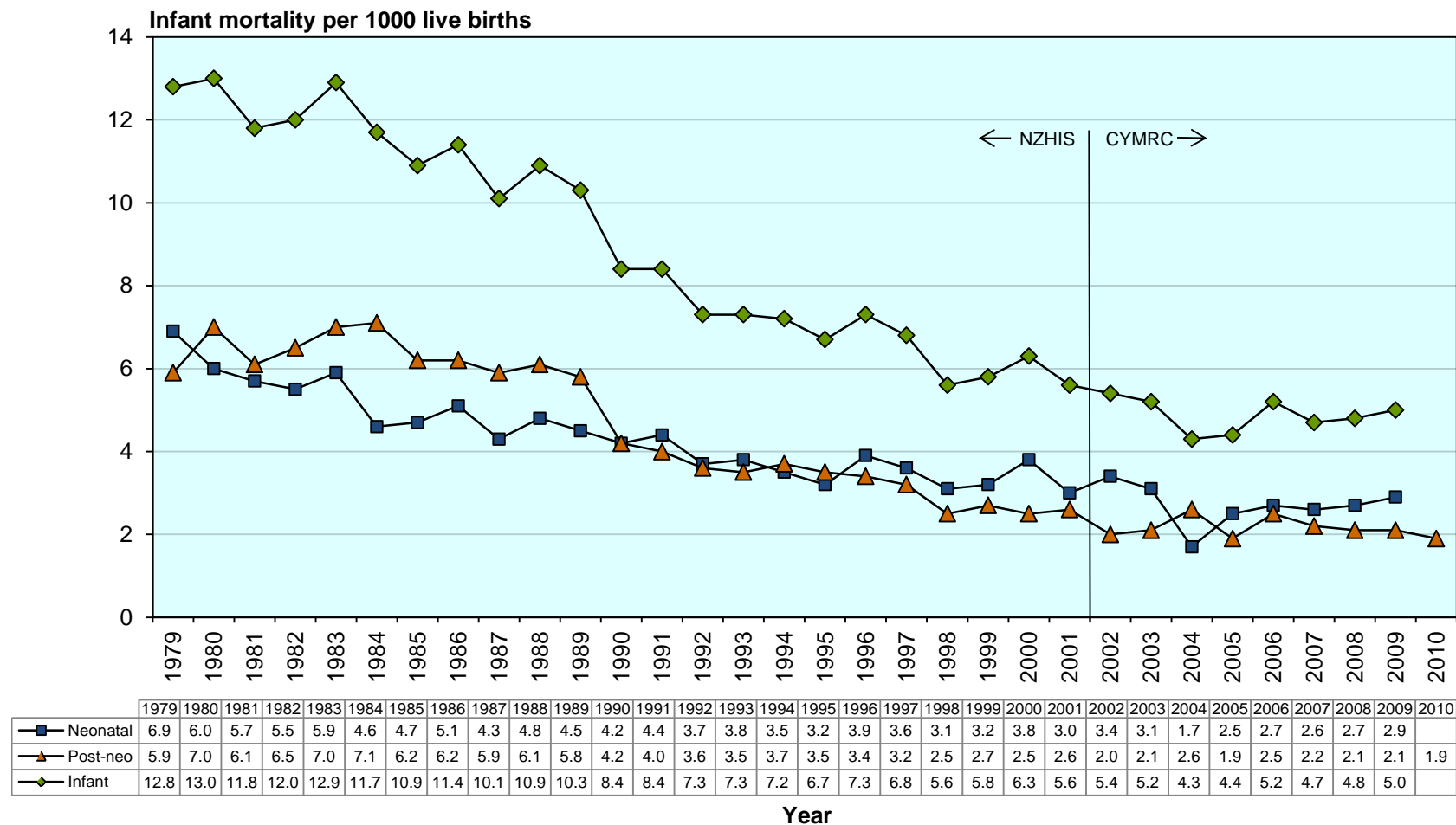
Source: Mortality Review Database

Figure 1.3: Mortality (number of deaths) in children and young people aged 28 days to 24 years by cause and year of death, New Zealand 2002–2010 (n=6032 deaths)



Source: Mortality Review Database

Figure 1.4: Infant, neonatal and post-neonatal mortality (age specific rates per 1000 live births) in infants 0 days to 1 year of age, New Zealand 1979–2010

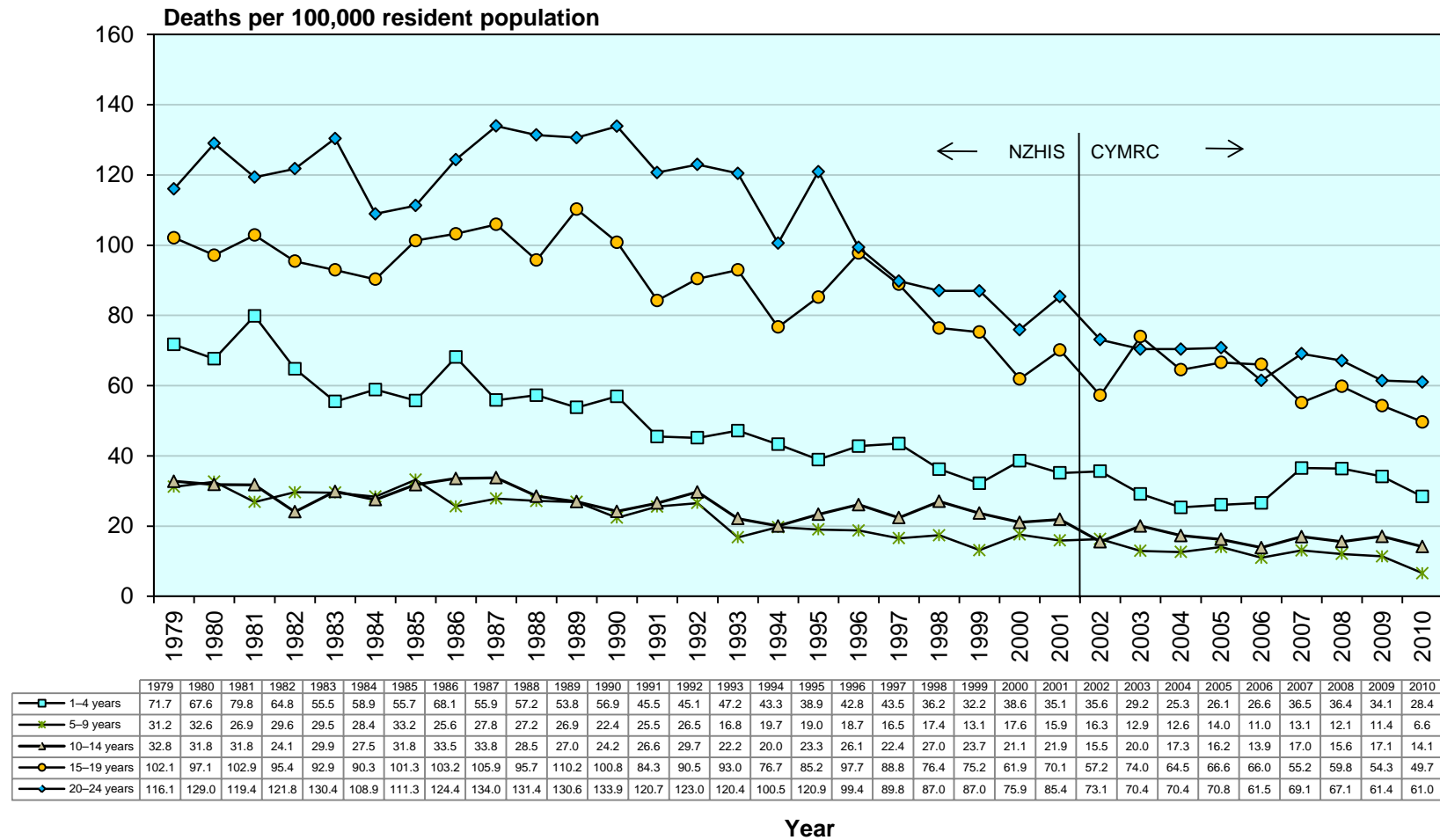


Note: Neonatal rates (for deaths 0 days – 27 days) for 2002–2009 taken from Perinatal Maternal Mortality Review Committee reporting extracts; pre-2002 neonatal rates from NZHIS.

Note: 2010 data for neonatal deaths not yet available

Source: *Numerator:* NZHIS pre-2002 data, Mortality Review Database 2002–2010 data; *Denominator:* NZHIS Live Births

Figure 1.5: Mortality (age-specific rates per 100,000 resident population) by age group (excluding post-neonatal mortality), New Zealand 1979–2010

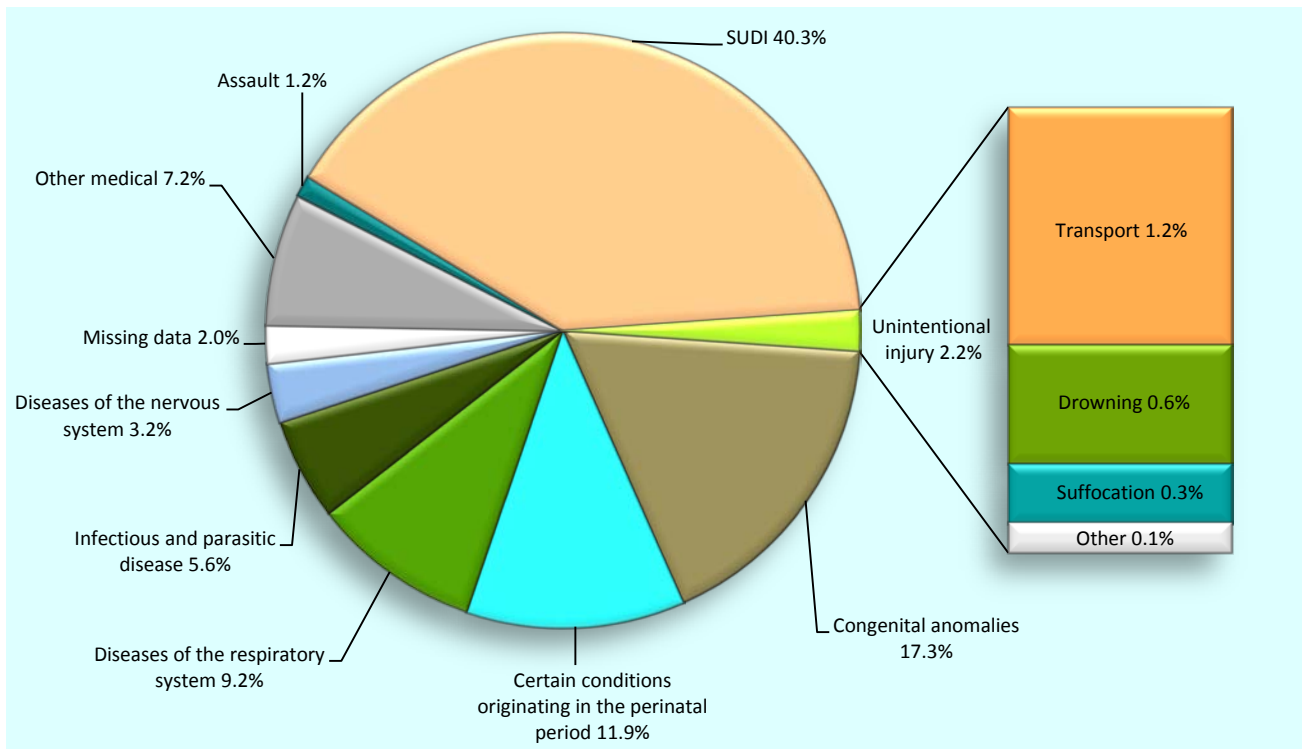


Source: *Numerator*: NZHIS pre-2002 data, Mortality Review Database 2002–2010 data; *Denominator*: Statistics NZ Estimated Resident Population pre-2002, NZ MRDG Estimated Resident Population 2002–2010

Infants aged 28 days to less than one year

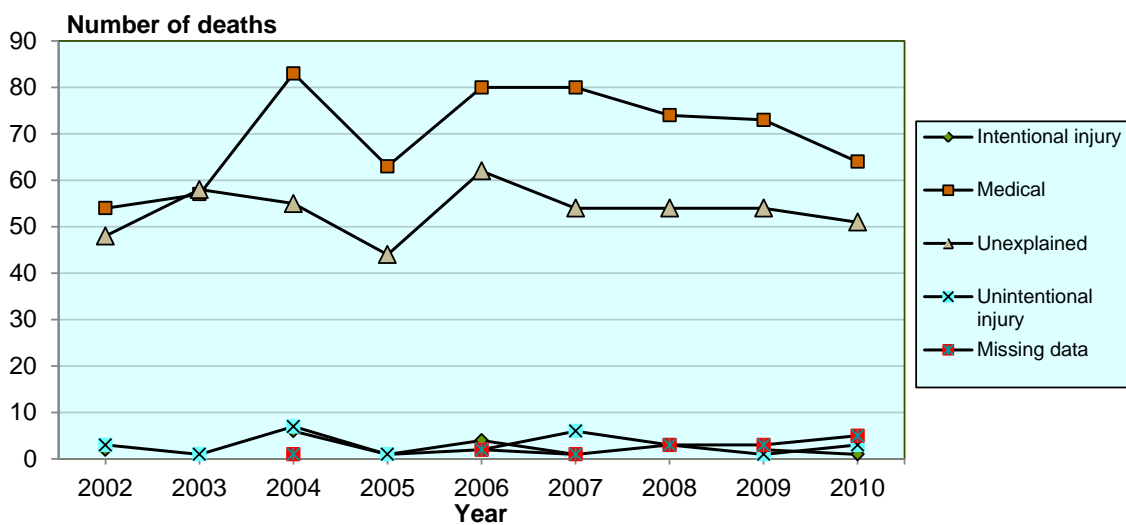
The leading causes of death in post neonatal infants are Sudden Unexpected Death in Infancy and congenital anomalies. Other medical causes account for the majority of the remaining deaths, with injury accounting for a small proportion of the overall deaths.

Figure 2.1: Mortality (%) in infants aged 28 days to less than one year by cause of death, New Zealand 2006–2010 (n=683 deaths)



Source: Mortality Review Database

Figure 2.2: Mortality (number of deaths) in infants aged 28 days to less than one year by cause of death and year, New Zealand 2002–2010 (n=1167 deaths)



Source: Mortality Review Database

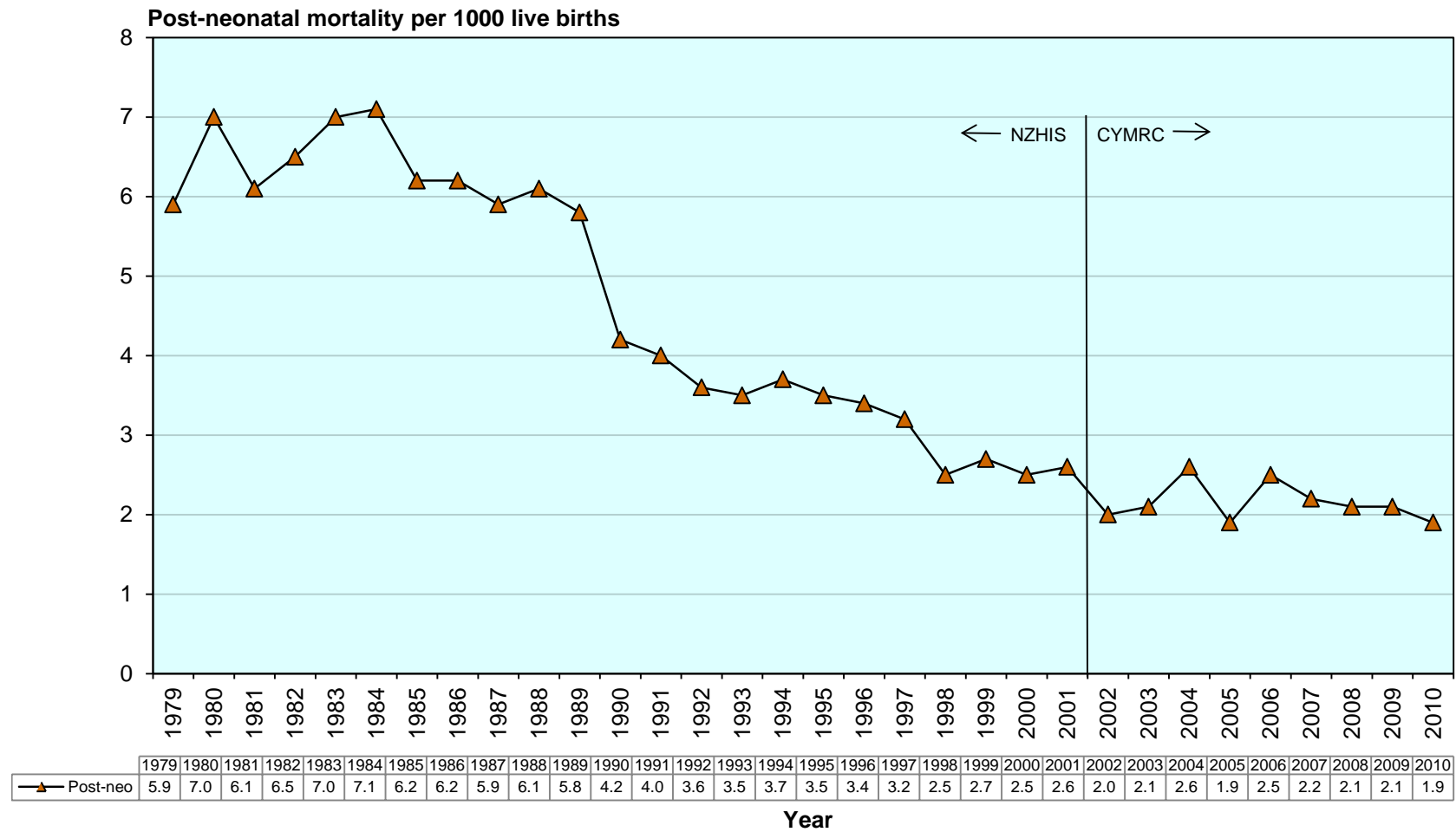
Table 2.1: Post-neonatal infant mortality (number of deaths and rates per 1000 live births) by cause of death and year, New Zealand 2006–2010 (n=683 deaths)

Cause of death	2006	2007	2008	2009	2010*	Total	%	Rate 2006–2010
Medical								
Infectious and parasitic diseases	7	7	8	12	4	38	5.6	0.12
Neoplasms	2	4	-	3	2	11	1.6	0.03
Diseases of the blood and blood-forming organs and disorders of immune system	-	1	1	2	-	4	0.6	0.01
Endocrine, nutritional and metabolic diseases	1	4	1	3	2	11	1.6	0.03
Mental and behavioural disorders	-	-	-	-	-	-	-	-
Diseases of the nervous system	7	4	4	3	4	22	3.2	0.07
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	3	2	3	3	4	15	2.2	0.05
Diseases of the respiratory system	15	15	10	11	12	63	9.2	0.20
Diseases of the digestive system	1	-	2	-	-	3	0.4	0.01
Diseases of the skin and subcutaneous tissue	-	-	-	-	-	-	-	-
Diseases of the musculoskeletal system and connective tissue	-	1	-	-	-	1	0.1	0.00
Diseases of the genitourinary system	1	-	-	1	2	4	0.6	0.01
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	19	15	19	16	12	81	11.9	0.25
Congenital anomalies	24	27	26	19	22	118	17.3	0.37
Symptoms & abnormal findings not elsewhere classified	-	-	-	-	-	-	-	-
Total medical	80	80	74	73	64	371	54.3	1.16
Non-intentional injury (undetermined intent, legal intervention war)								
Cut/pierce	-	-	-	-	-	-	-	-
Drowning	-	3	-	-	1	4	0.6	0.01
Fall	-	-	-	-	-	-	-	-
Fire/hot object or substance	-	-	-	-	-	-	-	-
Firearm	-	-	-	-	-	-	-	-
Machinery	-	-	-	-	-	-	-	-
Transport	1	2	3	-	2	8	1.2	0.03
Natural/environmental	-	-	-	-	-	-	-	-
Overexertion	-	-	-	-	-	-	-	-
Poisoning	-	-	-	-	-	-	-	-
Struck by, against	-	-	-	-	-	-	-	-
Suffocation	-	1	-	1	-	2	0.3	0.01
Other specified, classifiable	-	-	-	-	-	-	-	-
Other specified, not elsewhere classified	-	-	-	-	-	-	-	-
Unspecified	-	-	-	-	-	-	-	-
Complications of medical and surgical care	-	-	-	-	-	-	-	-
Sequelae of surgical and medical care as external cause	1	-	-	-	-	1	0.1	0.00
Total non-intentional injury	2	6	3	1	3	15	2.2	0.05
Intentional injury								
Assault	4	1	-	2	1	8	1.2	0.03
Suicide	-	-	-	-	-	-	-	-
Total intentional injury	4	1	-	2	1	8	1.2	0.03
Sudden Unexpected Death in Infancy								
R95 Sudden infant death syndrome	39	36	32	34	11	152	22.3	0.48
R96 Other sudden death, cause unknown	-	-	-	-	-	-	-	-
R98 Unattended death	-	-	-	-	-	-	-	-
R99 Other ill-defined and unspecified causes of mortality	6	-	-	1	21	28	4.1	0.09
W75 Accidental suffocation and strangulation in bed	17	18	22	18	19	94	13.8	0.29
W78 Inhalation of gastric contents	-	-	-	-	-	-	-	-
W79 Inhalation and ingestion of food causing obstruction of respiratory tract	-	-	-	1	-	1	0.1	0.00
Total SUDI	62	54	54	54	51	275	40.3	0.86
Missing data	2	1	3	3	5	14	2.0	0.04
Total	150	142	134	133	124	683	100.0	2.14

* Note: while data from any year may potentially be altered due to Coronial inquests and other such proceedings and late notification of cases, this is particularly true of 2010 data; therefore caution should be used when interpreting these data.

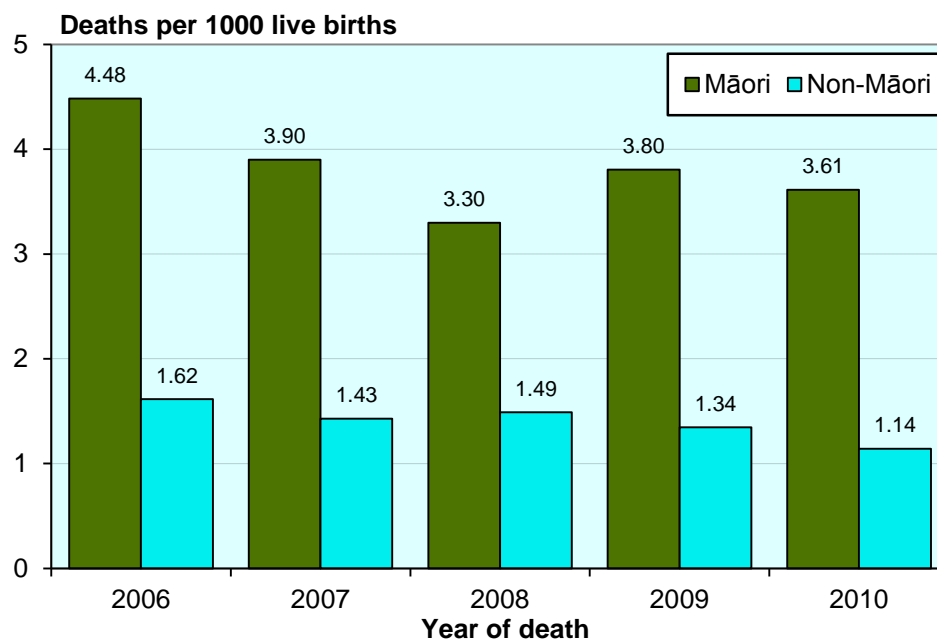
Source: *Numerator:* Mortality Review Database; *Denominator:* NZHIS Live Births 2006–2010

Figure 2.3: Post-neonatal mortality (rates per 1000 live births) in infants 28 days to 1 year of age, New Zealand 1979–2010



Source: *Numerator:* NZHIS pre-2002 data, Mortality Review Database 2002–2010 data; *Denominator:* NZHIS Live Births

Figure 2.4: Post-neonatal mortality (rates per 1000 live births), Māori and non-Māori, New Zealand 2006–2010 (n=670 deaths*)



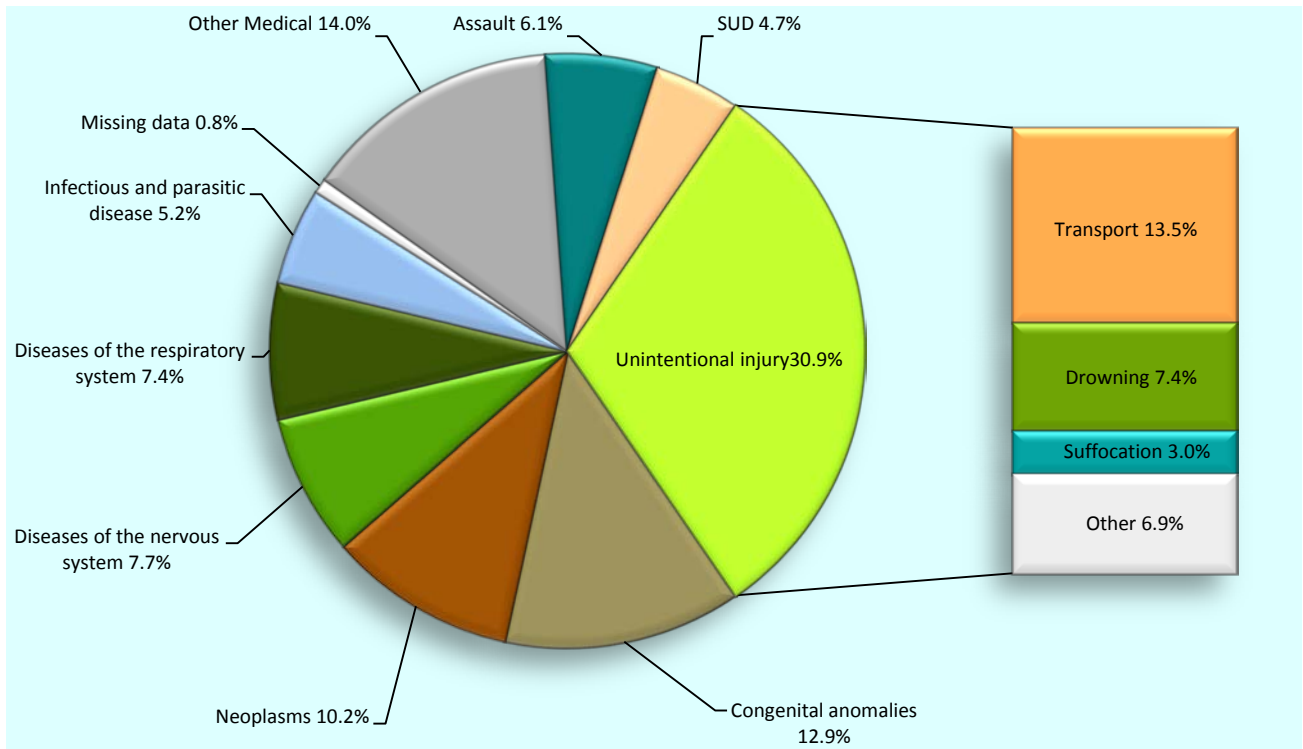
*Thirteen cases with no available ethnicity data excluded

Source: *Numerator:* Mortality Review Database; *Denominator:* NZHIS Live Births 2006–2010

Children aged one to four years

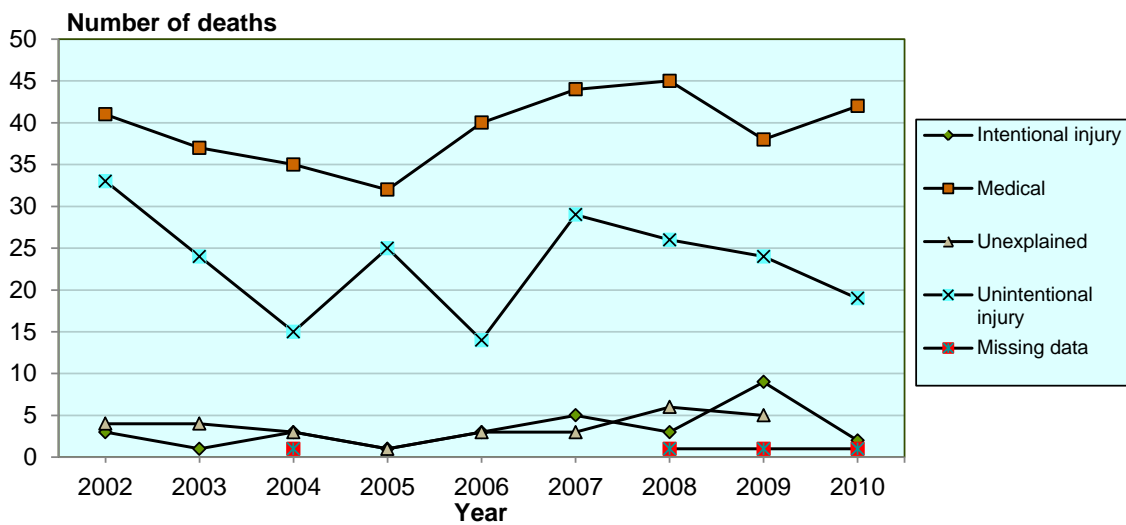
The leading causes of death in children aged one to four years were unintentional injury, followed by congenital anomalies and neoplasms. Of the injury deaths, transport and drowning accounted for the majority of deaths. While Sudden Unexpected Death did not cause as many deaths as in infants, there were still some deaths from SUD in the one to two year age range.

Figure 3.1: Mortality (%) in children aged 1–4 years by cause of death, New Zealand 2006–2010 (n=363 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 2002–2010 (n=626 deaths)



Source: Mortality Review Database

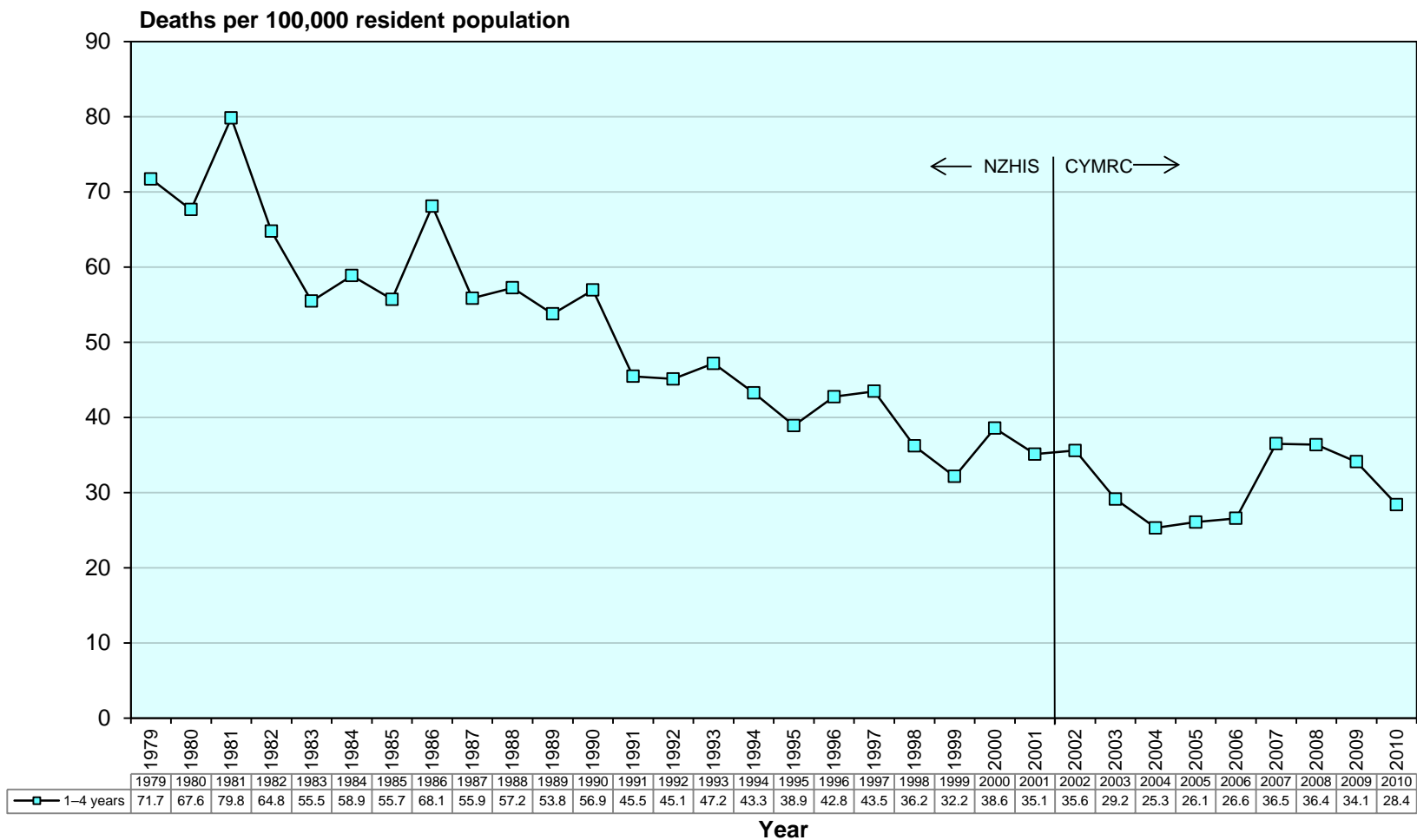
Table 3.1: Mortality (number of deaths and rates per 100,000 resident population) in children aged 1–4 years by cause of death and year, New Zealand 2006–2010 (n=363 deaths)

Cause of death	2006	2007	2008	2009	2010*	Total	%	Rate 2006–2010
Medical								
Infectious and parasitic diseases	3	3	6	1	6	19	5.2	1.69
Neoplasms	7	9	8	5	8	37	10.2	3.30
Diseases of the blood and blood-forming organs and disorders of immune system	1	2	1	-	1	5	1.4	0.45
Endocrine, nutritional and metabolic diseases	1	3	6	3	2	15	4.1	1.34
Mental and behavioural disorders	-	-	-	-	-	-	-	-
Diseases of the nervous system	7	4	5	7	5	28	7.7	2.50
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	5	3	4	2	4	18	5.0	1.61
Diseases of the respiratory system	4	7	6	5	5	27	7.4	2.41
Diseases of the digestive system	-	2	1	-	1	4	1.1	0.36
Diseases of the skin and subcutaneous tissue	-	-	-	-	-	-	-	-
Diseases of the musculoskeletal system and connective tissue	-	2	-	-	-	2	0.6	0.18
Diseases of the genitourinary system	-	-	-	-	-	-	-	-
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	-	-	-	-	2	2	0.6	0.18
Congenital anomalies	11	9	8	13	6	47	12.9	4.19
Symptoms & abnormal findings not elsewhere classified	1	-	-	2	2	5	1.4	0.45
Total medical	40	44	45	38	42	209	57.6	18.64
Non-intentional injury (undetermined intent, legal intervention war)								
Cut/pierce	-	-	-	-	-	-	-	-
Drowning	3	7	7	6	4	27	7.4	2.41
Fall	2	2	1	1	-	6	1.7	0.54
Fire/hot object or substance	1	1	2	2	-	6	1.7	0.54
Firearm	-	-	-	-	-	-	-	-
Machinery	-	1	1	-	1	3	0.8	0.27
Transport	6	10	9	13	11	49	13.5	4.37
Natural/environmental	-	-	-	-	1	1	0.3	0.09
Overexertion	-	-	-	-	-	-	-	-
Poisoning	-	-	-	1	-	1	0.3	0.09
Struck by, against	1	2	1	-	1	5	1.4	0.45
Suffocation	1	4	5	1	-	11	3.0	0.98
Other specified, classifiable	-	-	-	-	-	-	-	-
Other specified, not elsewhere classified	-	-	-	-	1	1	0.3	0.09
Unspecified	-	1	-	-	-	1	0.3	0.09
Complications of medical and surgical care	-	1	-	-	-	1	0.3	0.09
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total non-intentional injury	14	29	26	24	19	112	30.9	9.99
Intentional injury								
Assault	3	5	3	9	2	22	6.1	1.96
Suicide	-	-	-	-	-	-	-	-
Total intentional injury	3	5	3	9	2	22	6.1	1.96
Sudden Unexpected Death								
R95 Sudden infant death syndrome	1	-	-	-	-	1	0.3	0.09
R96 Other sudden death, cause unknown	-	-	-	-	-	-	-	-
R98 Unattended death	-	-	-	-	-	-	-	-
R99 Other ill-defined and unspecified causes of mortality	1	2	1	5	-	9	2.5	0.80
W75 Accidental suffocation and strangulation in bed	1	1	5	-	-	7	1.9	0.62
W78 Inhalation of gastric contents	-	-	-	-	-	-	-	-
Total SUD	3	3	6	5	-	17	4.7	1.52
Missing data	-	-	1	1	1	3	0.8	0.27
Total	60	81	81	77	64	363	100.0	32.37

* Note: while data from any year may potentially be altered due to Coronial inquests and other such proceedings and late notification of cases, this is particularly true of 2010 data; therefore caution should be used when interpreting these data.

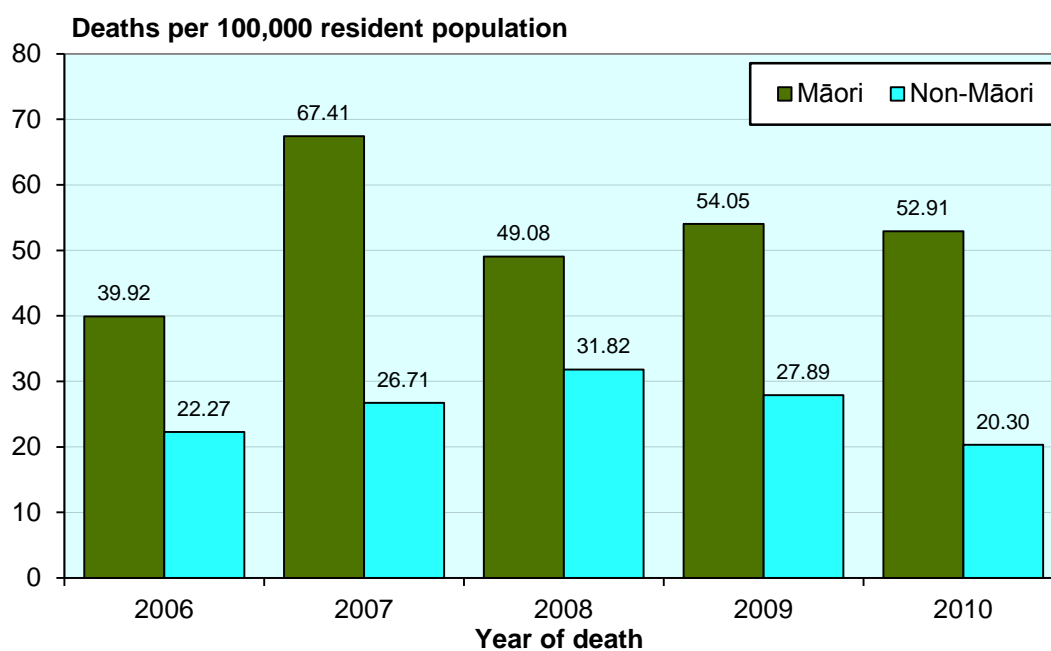
Source: *Numerator*: Mortality Review Database; *Denominator*: NZ MRDG Estimated Resident Population 2006–2010

Figure 3.3: Mortality (rates per 100,000 resident population) in children aged 1–4 years, New Zealand 1979–2010



Source: *Numerator:* NZHIS pre-2002 data, Mortality Review Database 2002–2010 data; *Denominator:* Statistics NZ Estimated Resident Population pre-2002, NZ MRDG Estimated Resident Population 2002–2010

Figure 3.4: Mortality (rates per 100,000 resident population) in children aged 1–4 years for Māori and non-Māori, New Zealand 2006–2010 (n=361 deaths*)



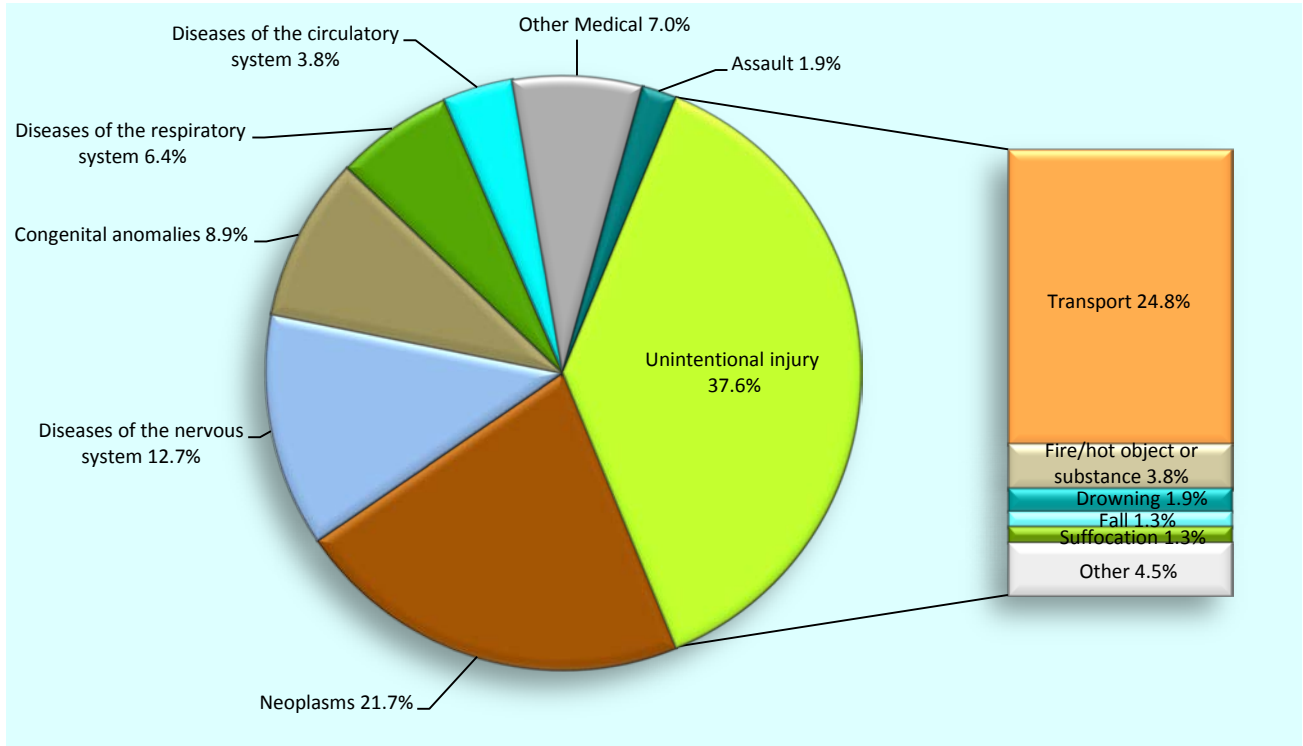
*Two cases with no available ethnicity data excluded

Source: *Numerator:* Mortality Review Database; *Denominator:* NZ MRDG Estimated Resident Population 2006–2010

Children aged five to nine years

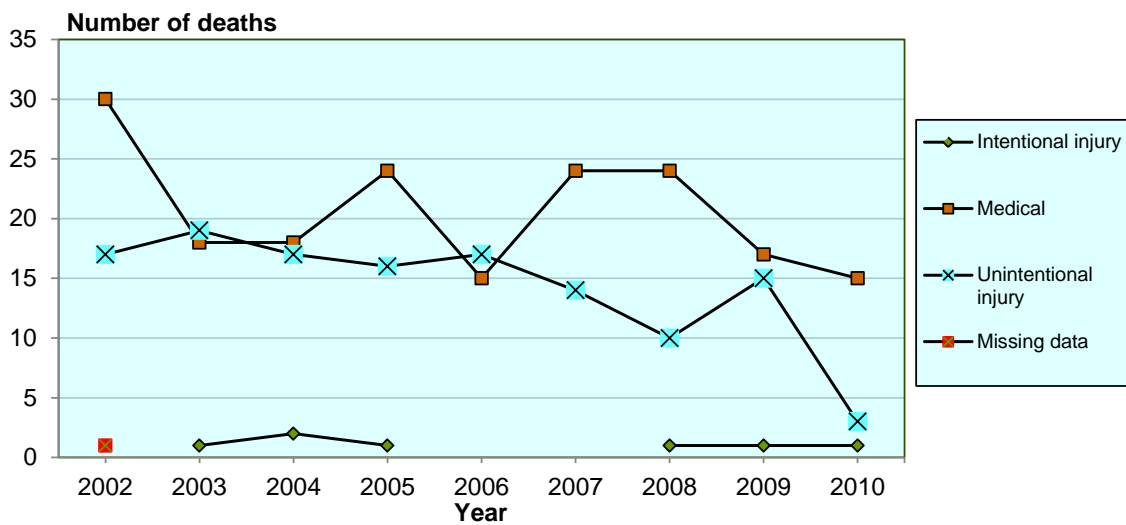
The leading causes of death in children aged five to nine years were unintentional injury, followed by neoplasms and diseases of the nervous system. Within injury deaths, transport-related injuries caused the greatest number of deaths.

Figure 4.1: Mortality (%) in children aged 5–9 years by cause of death, New Zealand 2006–2010 (n=157 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 2002–2010 (n=321 deaths)



Source: Mortality Review Database

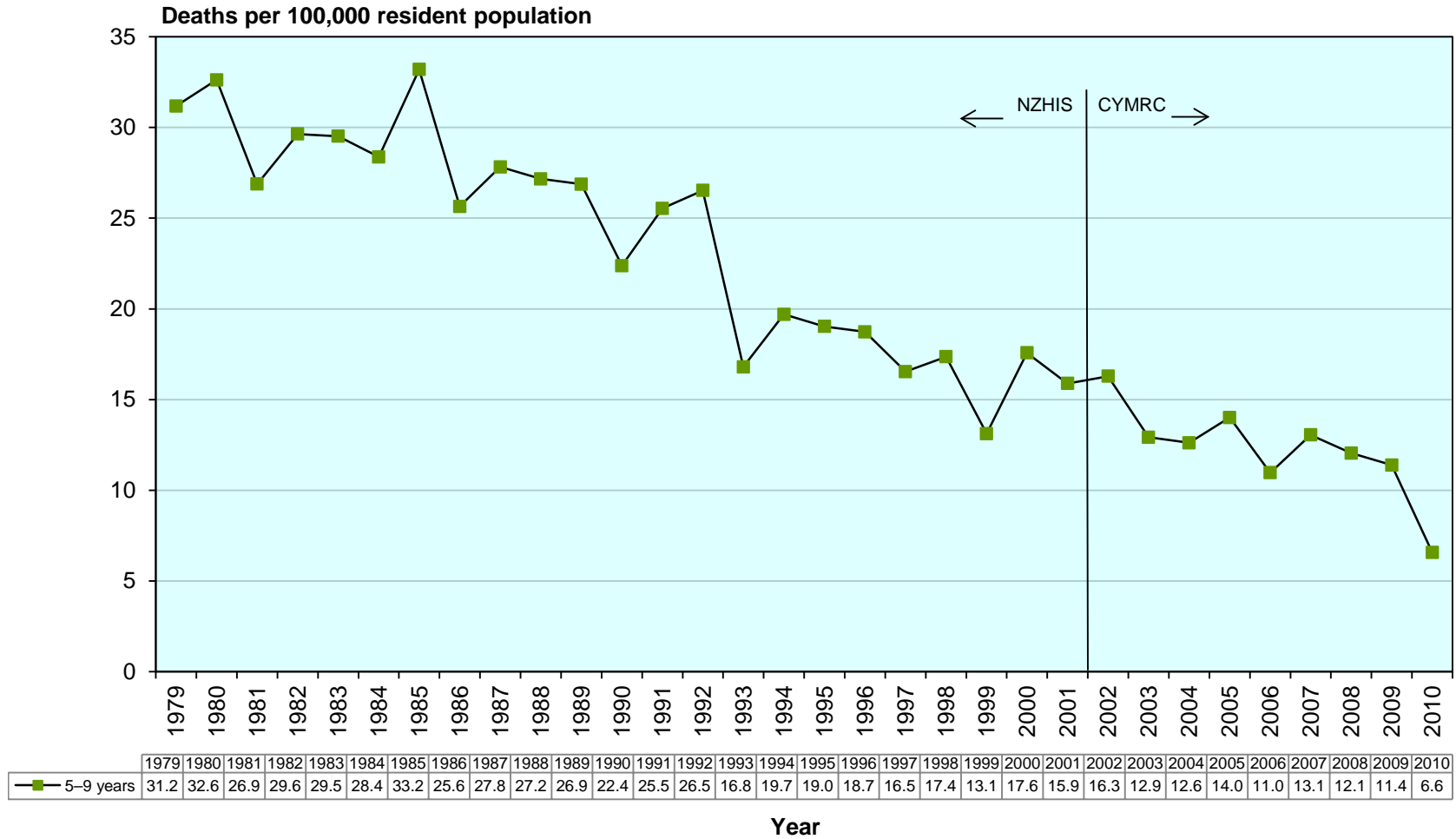
Table 4.1: Mortality (number of deaths and rates per 100,000 resident population) in children aged 5–9 years by cause of death and year, New Zealand 2006–2010 (n=157 deaths)

Cause of death	2006	2007	2008	2009	2010*	Total	%	Rate 2006–2010
Medical								
Infectious and parasitic diseases	1	1	1	-	-	3	1.9	0.21
Neoplasms	5	6	10	6	7	34	21.7	2.34
Diseases of the blood and blood-forming organs and disorders of immune system	-	1	-	-	-	1	0.6	0.07
Endocrine, nutritional and metabolic diseases	1	-	-	1	1	3	1.9	0.21
Mental and behavioural disorders	-	-	-	-	-	-	-	-
Diseases of the nervous system	4	7	3	5	1	20	12.7	1.38
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	-	1	4	-	1	6	3.8	0.41
Diseases of the respiratory system	1	3	2	3	1	10	6.4	0.69
Diseases of the digestive system	-	-	1	-	-	1	0.6	0.07
Diseases of the skin and subcutaneous tissue	-	-	-	-	-	-	-	-
Diseases of the musculoskeletal system and connective tissue	-	1	-	1	-	2	1.3	0.14
Diseases of the genitourinary system	-	-	-	-	-	-	-	-
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	-	1	-	-	-	1	0.6	0.07
Congenital anomalies	3	3	3	1	4	14	8.9	0.96
Symptoms & abnormal findings not elsewhere classified	-	-	-	-	-	-	-	-
Total medical	15	24	24	17	15	95	60.5	6.54
Non-intentional injury (undetermined intent, legal intervention war)								
Cut/pierce	-	-	-	-	-	-	-	-
Drowning	-	-	2	1	-	3	1.9	0.21
Fall	-	1	-	1	-	2	1.3	0.14
Fire/hot object or substance	-	2	1	2	1	6	3.8	0.41
Firearm	-	-	-	-	-	-	-	-
Machinery	-	-	-	-	-	-	-	-
Transport	14	10	4	9	2	39	24.8	2.69
Natural/environmental	1	-	-	-	-	1	0.6	0.07
Overexertion	-	-	-	-	-	-	-	-
Poisoning	1	-	-	-	-	1	0.6	0.07
Struck by, against	1	-	-	-	-	1	0.6	0.07
Suffocation	-	-	2	-	-	2	1.3	0.14
Other specified, classifiable	-	-	1	1	-	2	1.3	0.14
Other specified, not elsewhere classified	-	1	-	1	-	2	1.3	0.14
Unspecified	-	-	-	-	-	-	-	-
Complications of medical and surgical care	-	-	-	-	-	-	-	-
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total non-intentional injury	17	14	10	15	3	59	37.6	4.06
Intentional injury								
Assault	-	-	1	1	1	3	1.9	0.21
Suicide	-	-	-	-	-	-	-	-
Total intentional injury	-	-	1	1	1	3	1.9	0.21
Missing data	-	-	-	-	-	-	-	-
Total	32	38	35	33	19	157	100.0	10.81

* Note: while data from any year may potentially be altered due to Coronial inquests and other such proceedings and late notification of cases, this is particularly true of 2010 data, therefore caution should be used when interpreting these data.

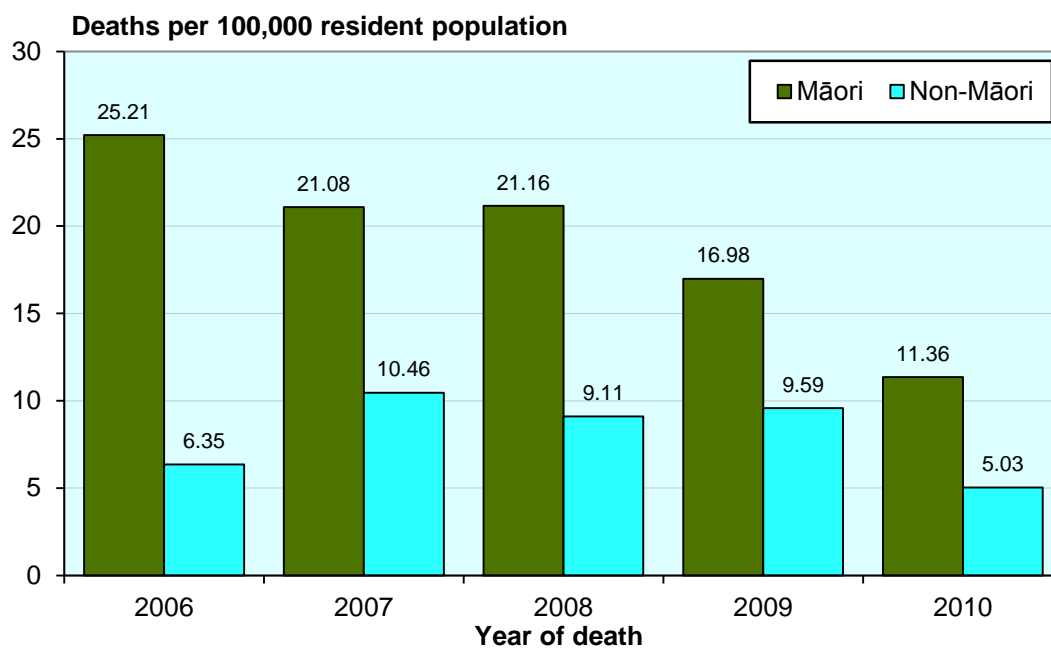
Source: Numerator: Mortality Review Database; Denominator: NZ MRDG Estimated Resident Population 2006–2010

Figure 4.3: Mortality (rates per 100,000 resident population) in children aged 5–9 years, New Zealand 1979–2010



Source: *Numerator:* NZHIS pre-2002 data, Mortality Review Database 2002–2010 data; *Denominator:* Statistics NZ Estimated Resident Population pre-2002, NZ MRDG Estimated Resident Population 2002–2010

Figure 4.4: Mortality (rates per 100,000 resident population) in children aged 5-9 years, Māori and non-Māori, New Zealand 2006–2010 (n=157 deaths)

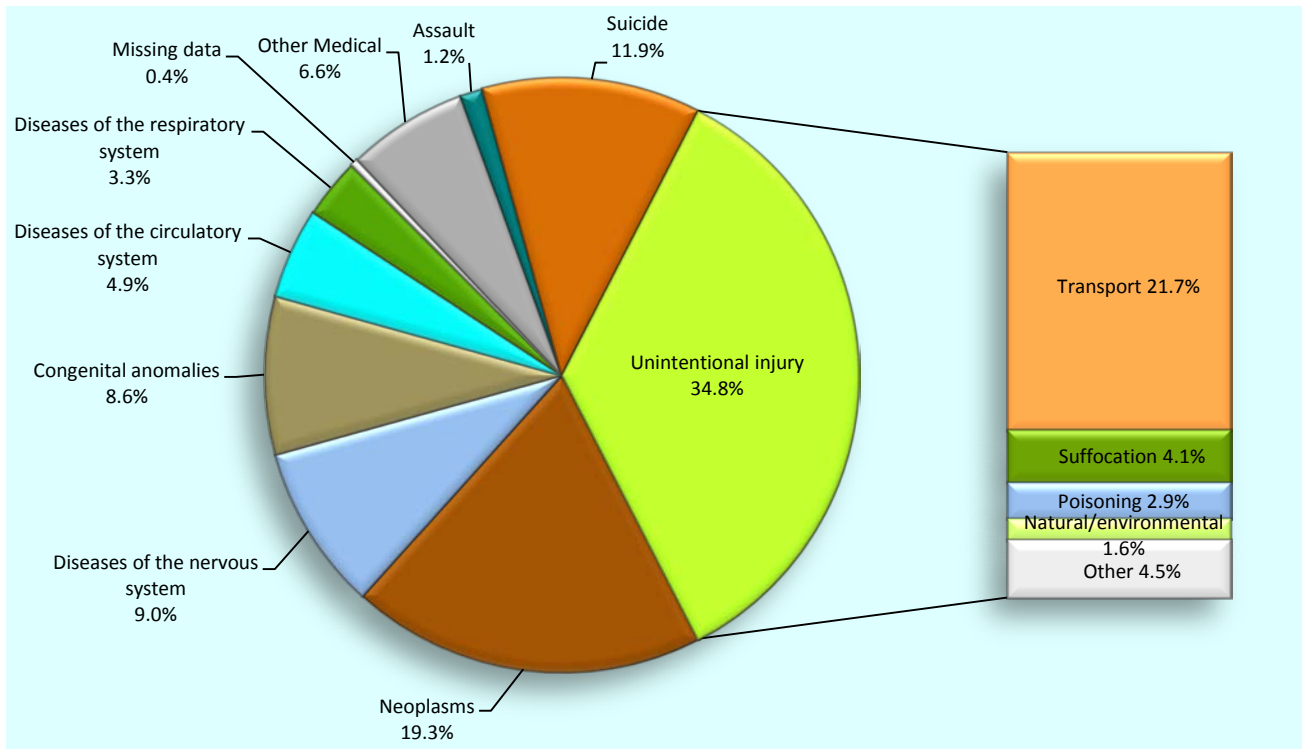


Source: *Numerator:* Mortality Review Database; *Denominator:* NZ MRDG Estimated Resident Population 2006–2010

Children aged 10–14 years

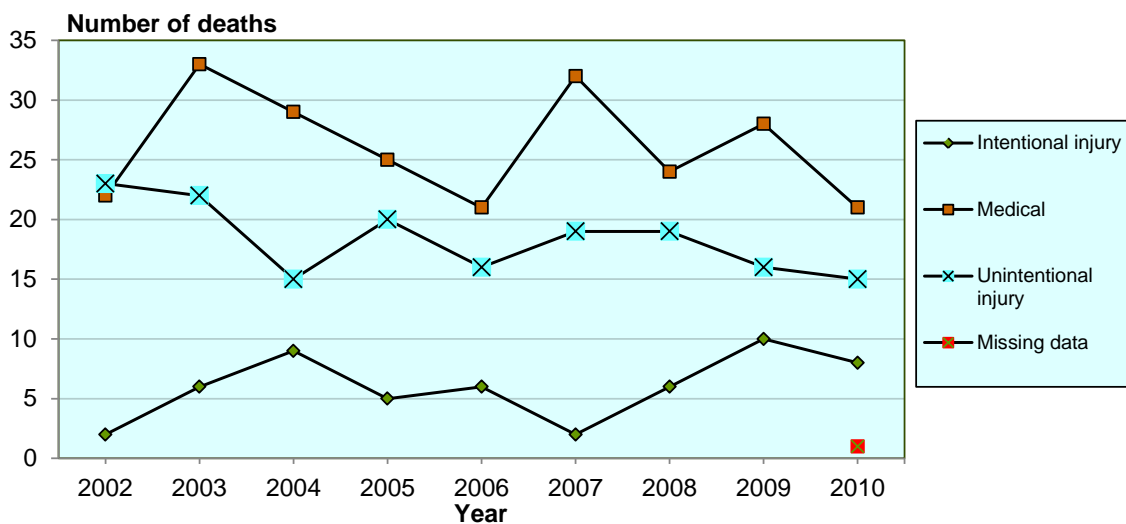
The main causes of death in children aged ten to 14 years were unintentional injury and neoplasms. There was a greater contribution from intentional injuries (suicide and assault) than in the younger age groups.

Figure 5.1: Mortality (%) in children aged 10–14 years by cause of death, New Zealand 2006–2010 (n=244 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 2002–2010 (n=455 deaths)



Source: Mortality Review Database

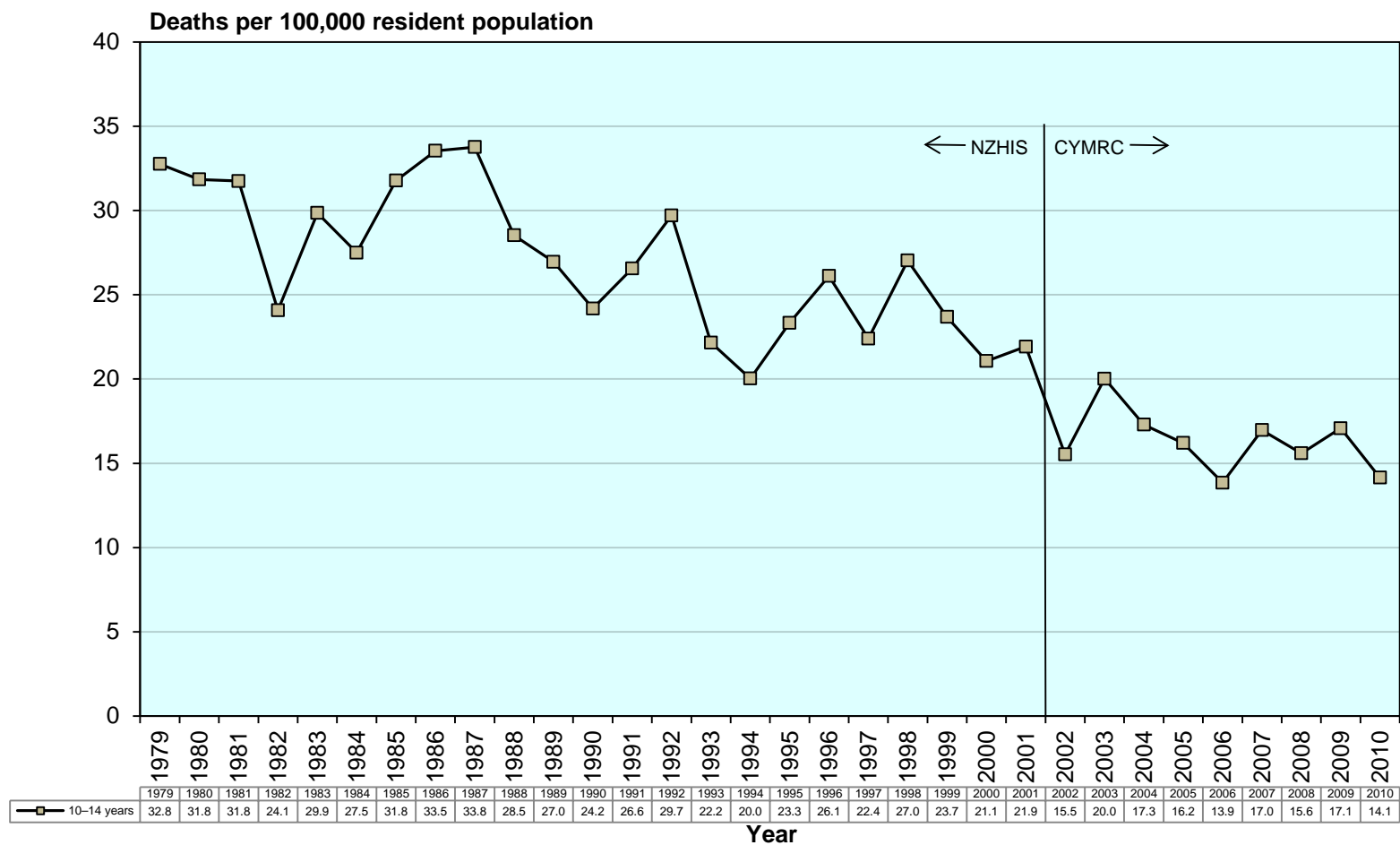
Table 5.1: Mortality (number of deaths and rates per 100,000 resident population) in children aged 10–14 years by cause of death and year, New Zealand 2006–2010 (n=244 deaths)

Cause of death	2006	2007	2008	2009	2010*	Total	%	Rate 2006–2010
Medical								
Infectious and parasitic diseases	-	1	-	1	-	2	0.8	0.13
Neoplasms	9	12	13	6	7	47	19.3	2.99
Diseases of the blood and blood-forming organs and disorders of immune system	-	1	-	-	-	1	0.4	0.06
Endocrine, nutritional and metabolic diseases	2	3	-	-	2	7	2.9	0.45
Mental and behavioural disorders	-	-	-	1	-	1	0.4	0.06
Diseases of the nervous system	2	6	3	8	3	22	9.0	1.40
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	1	2	3	3	3	12	4.9	0.76
Diseases of the respiratory system	2	1	1	2	2	8	3.3	0.51
Diseases of the digestive system	-	1	-	1	-	2	0.8	0.13
Diseases of the skin and subcutaneous tissue	-	-	-	-	-	-	-	-
Diseases of the musculoskeletal system and connective tissue	-	-	-	1	-	1	0.4	0.06
Diseases of the genitourinary system	-	-	-	-	-	-	-	-
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	-	-	-	-	-	-	-	-
Congenital anomalies	5	5	3	5	3	21	8.6	1.34
Symptoms & abnormal findings not elsewhere classified	-	-	1	-	1	2	0.8	0.13
Total medical	21	32	24	28	21	126	51.6	8.02
Non-intentional injury (undetermined intent, legal intervention war)								
Cut/pierce	-	-	-	-	-	-	-	-
Drowning	-	-	-	2	1	3	1.2	0.19
Fall	-	-	1	-	1	2	0.8	0.13
Fire/hot object or substance	2	-	-	1	-	3	1.2	0.19
Firearm	-	-	-	1	-	1	0.4	0.06
Machinery	1	-	-	-	-	1	0.4	0.06
Transport	9	14	13	7	10	53	21.7	3.37
Natural/environmental	2	-	1	-	1	4	1.6	0.25
Overexertion	-	-	-	-	-	-	-	-
Poisoning	-	2	2	2	1	7	2.9	0.45
Struck by, against	-	-	-	-	-	-	-	-
Suffocation	2	3	1	3	1	10	4.1	0.64
Other specified, classifiable	-	-	-	-	-	-	-	-
Other specified, not elsewhere classified	-	-	-	-	-	-	-	-
Unspecified	-	-	-	-	-	-	-	-
Complications of medical and surgical care	-	-	1	-	-	1	0.4	0.06
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total non-intentional injury	16	19	19	16	15	85	34.8	5.41
Intentional injury								
Assault	1	-	1	-	1	3	1.2	0.19
Suicide	5	2	5	10	7	29	11.9	1.85
Total intentional injury	6	2	6	10	8	32	13.1	2.04
Missing data	-	-	-	-	1	1	0.4	0.06
Total	43	53	49	54	45	244	100.0	15.53

* Note: while data from any year may potentially be altered due to Coronial inquests and other such proceedings and late notification of cases, this is particularly true of 2010 data; therefore caution should be used when interpreting these data.

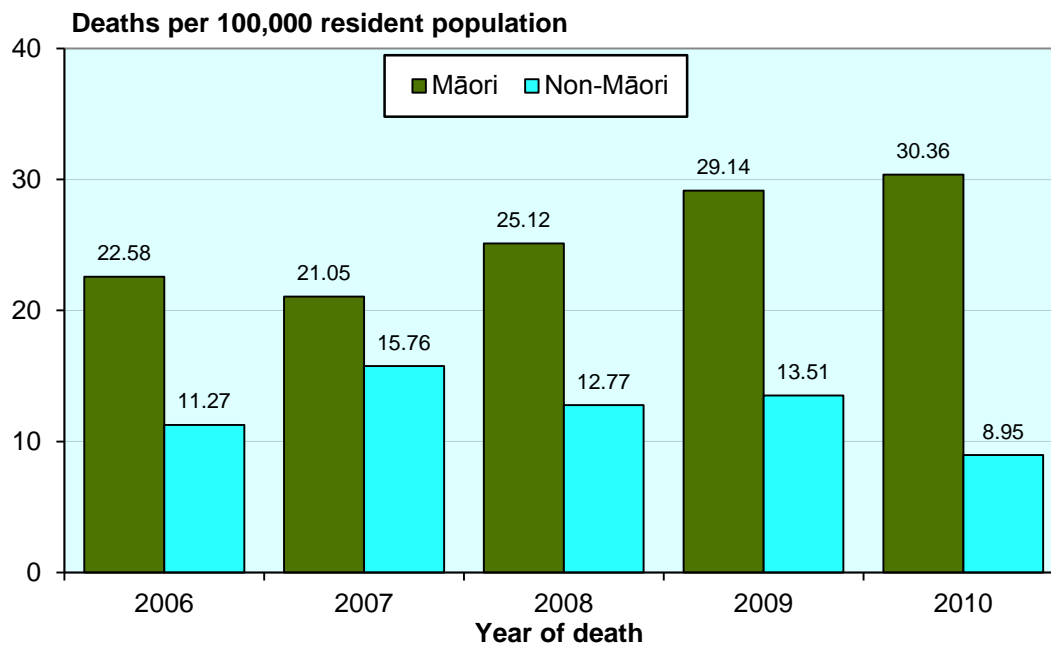
Source: *Numerator*: Mortality Review Database; *Denominator*: NZ MRDG Estimated Resident Population 2006–2010

Figure 5.3: Mortality (rates per 100,000 resident population) in children aged 10–14 years, New Zealand 1979–2010



Source: *Numerator*: NZHIS pre-2002 data, Mortality Review Database 2002–2010 data; *Denominator*: Statistics NZ Estimated Resident Population pre-2002, NZ MRDG Estimated Resident Population 2002–2010

Figure 5.4: Mortality (rates per 100,000 resident population) in children aged 10–14 years for Māori and non-Māori, New Zealand 2006–2010 (n=243* deaths)



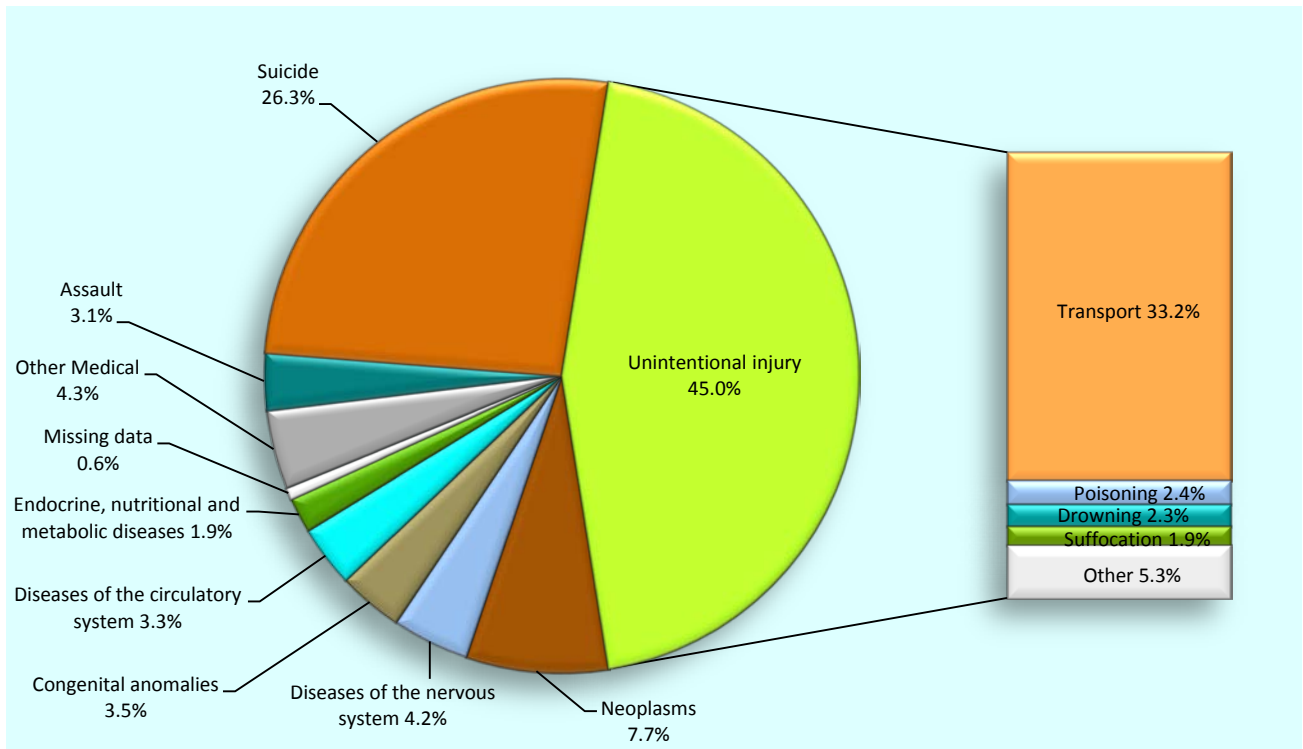
*One case with no available ethnicity data excluded

Source: *Numerator:* Mortality Review Database; *Denominator:* NZ MRDG Estimated Resident Population 2006–2010

Young people aged 15–19 years

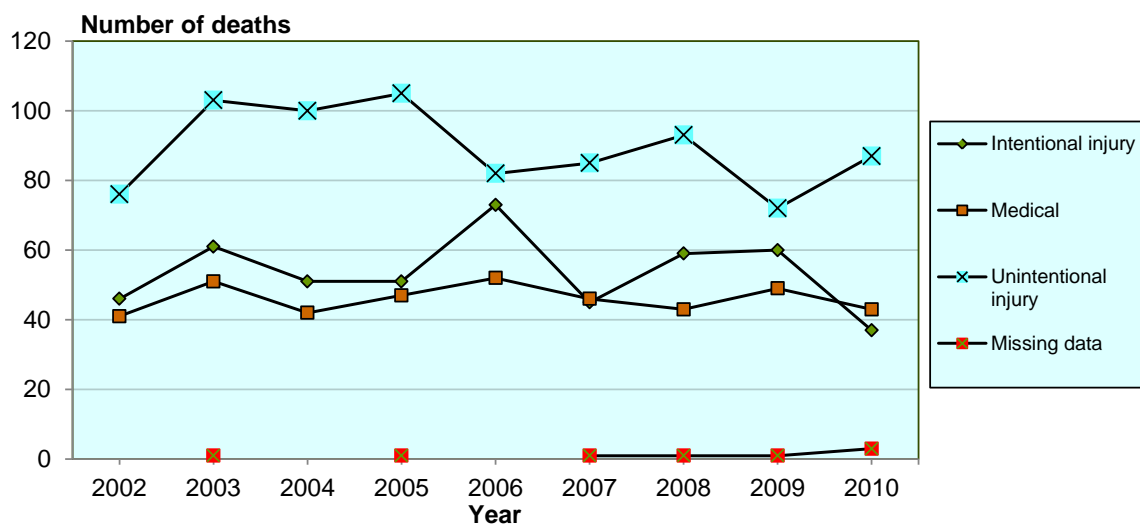
The leading causes of death in young people aged 15 to 19 years were unintentional and intentional injury. Transport-related deaths were the predominant cause of injury deaths, followed by suicide.

Figure 6.1: Mortality (%) in young people aged 15–19 years by cause of death, New Zealand 2006–2010 (n=932 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 2002–2010 (n=1708 deaths)



Source: Mortality Review Database

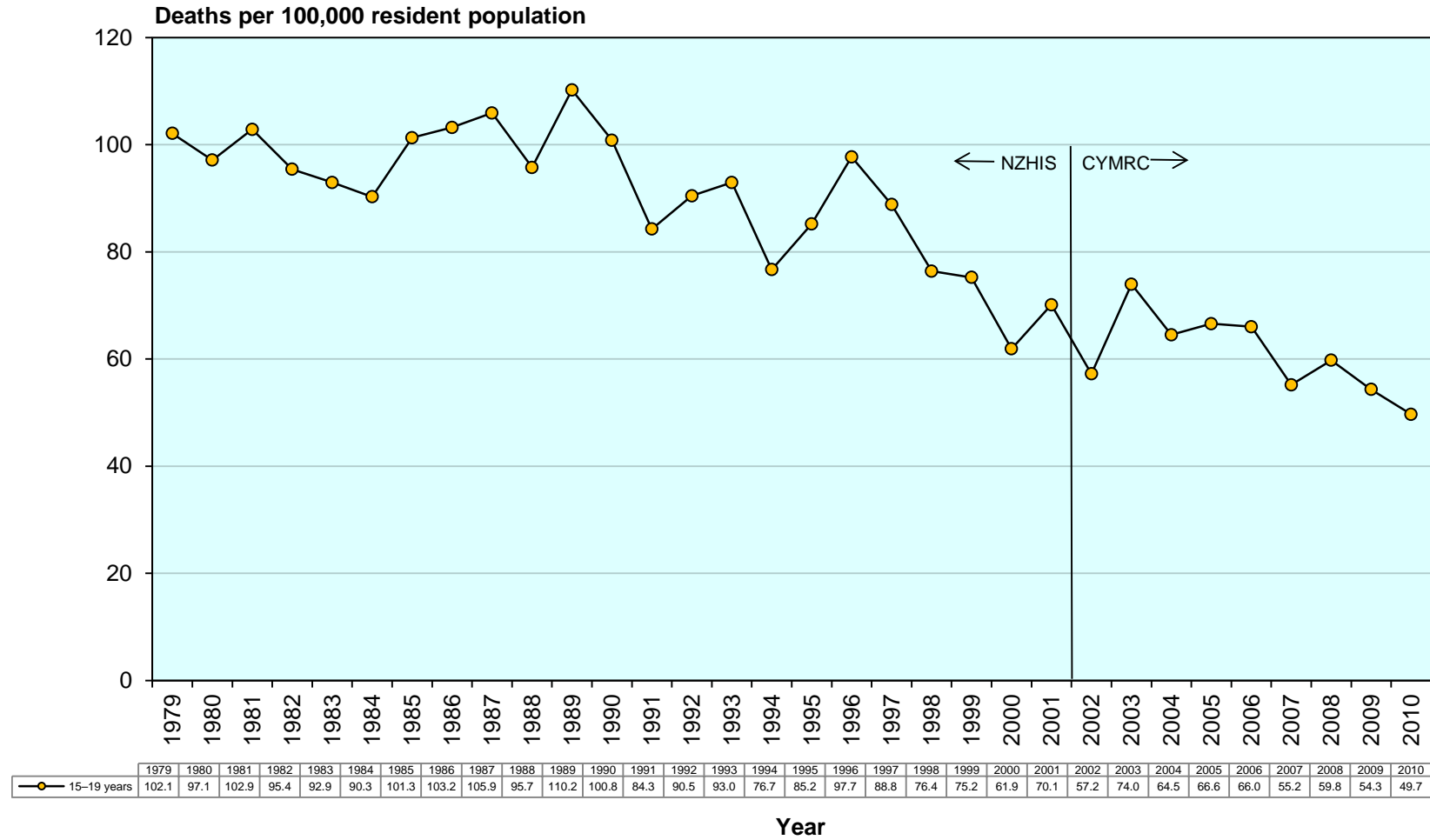
Table 6.1: Mortality (number of deaths and rates per 100,000 resident population) in young people aged 15–19 years by cause of death and year, New Zealand 2006–2010 (n=932 deaths)

Cause of death	2006	2007	2008	2009	2010*	Total	%	Rate 2006–2010
Medical								
Infectious and parasitic diseases	1	-	-	-	1	2	0.2	0.12
Neoplasms	17	19	11	13	12	72	7.7	4.39
Diseases of the blood and blood-forming organs and disorders of immune system	1	-	-	-	-	1	0.1	0.06
Endocrine, nutritional and metabolic diseases	3	4	3	5	3	18	1.9	1.10
Mental and behavioural disorders	-	-	-	-	1	1	0.1	0.06
Diseases of the nervous system	10	9	7	9	4	39	4.2	2.38
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	6	6	11	4	4	31	3.3	1.89
Diseases of the respiratory system	1	2	1	7	4	15	1.6	0.91
Diseases of the digestive system	-	-	-	1	-	1	0.1	0.06
Diseases of the skin and subcutaneous tissue	-	-	1	-	1	2	0.2	0.12
Diseases of the musculoskeletal system and connective tissue	1	-	-	2	1	4	0.4	0.24
Diseases of the genitourinary system	-	-	1	-	-	1	0.1	0.06
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period	-	-	-	-	-	-	-	-
Congenital anomalies	11	6	8	4	4	33	3.5	2.01
Symptoms & abnormal findings not elsewhere classified	1	-	-	4	8	13	1.4	0.79
Total medical	52	46	43	49	43	233	25.0	14.21
Non-intentional injury (undetermined intent, legal intervention war)								
Cut/pierce	-	1	-	1	1	3	0.3	0.18
Drowning	4	3	4	1	9	21	2.3	1.28
Fall	3	2	6	4	2	17	1.8	1.04
Fire/hot object or substance	3	1	-	1	2	7	0.8	0.43
Firearm	-	-	2	1	1	4	0.4	0.24
Machinery	-	-	-	-	-	-	-	-
Transport	63	71	67	55	53	309	33.2	18.85
Natural/environmental	1	-	6	2	-	9	1.0	0.55
Overexertion	-	-	-	-	-	-	-	-
Poisoning	4	4	6	3	5	22	2.4	1.34
Struck by, against	-	-	-	1	1	2	0.2	0.12
Suffocation	1	3	2	1	11	18	1.9	1.10
Other specified, classifiable	2	-	-	1	1	4	0.4	0.24
Other specified, not elsewhere classified	1	-	-	-	1	2	0.2	0.12
Unspecified	-	-	-	-	-	-	-	-
Complications of medical and surgical care	-	-	-	1	-	1	0.1	0.06
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total non-intentional injury	82	85	93	72	87	419	45.0	25.56
Intentional injury								
Assault	11	3	6	5	4	29	3.1	1.77
Suicide	62	42	53	55	33	245	26.3	14.94
Total intentional injury	73	45	59	60	37	274	29.4	16.71
Missing data	-	1	1	1	3	6	0.6	0.37
Total	207	177	196	182	170	932	100.0	56.84

* Note: while data from any year may potentially be altered due to Coronial inquests and other such proceedings and late notification of cases, this is particularly true of 2010 data; therefore caution should be used when interpreting these data.

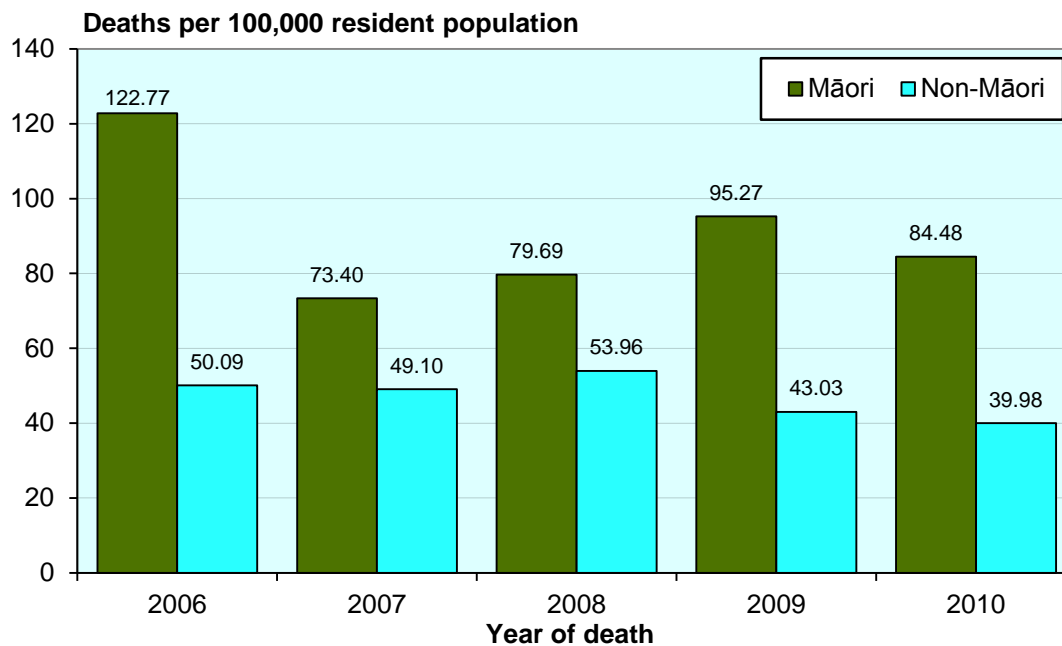
Source: *Numerator:* Mortality Review Database; *Denominator:* NZ MRDG Estimated Resident Population 2006–2010

Figure 6.3: Mortality (rates per 100,000 resident population) in young people aged 15–19 years, New Zealand 1979–2010



Source: *Numerator*: NZHIS pre-2002 data, Mortality Review Database 2002–2010 data; *Denominator*: Statistics NZ Estimated Resident Population pre-2002, NZ MRDG Estimated Resident Population 2002–2010

Figure 6.4: Mortality (rates per 100,000 resident population) in young people aged 15–19 years for Māori and non-Māori, New Zealand 2006–2010 (n=926* deaths)



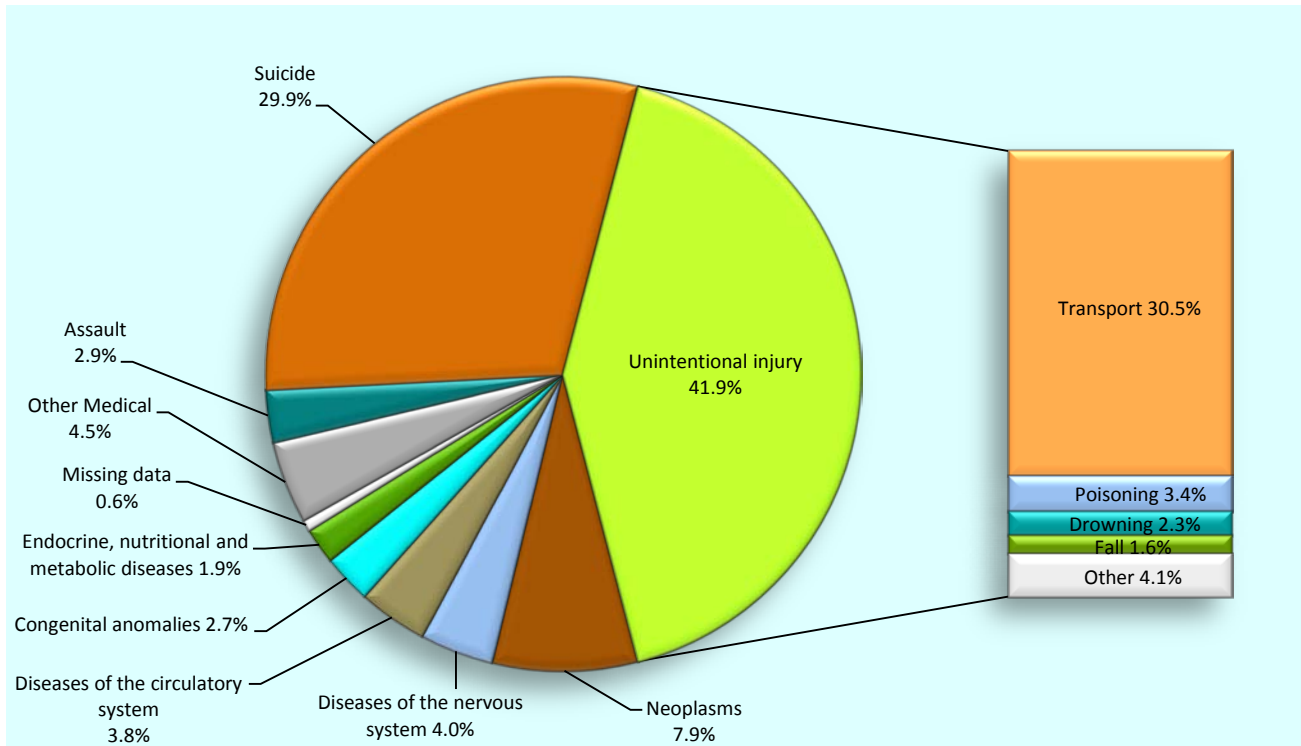
* Six cases with no available ethnicity data excluded

Source: *Numerator:* Mortality Review Database; *Denominator:* NZ MRDG Estimated Resident Population 2006-2010

Young people aged 20–24 years

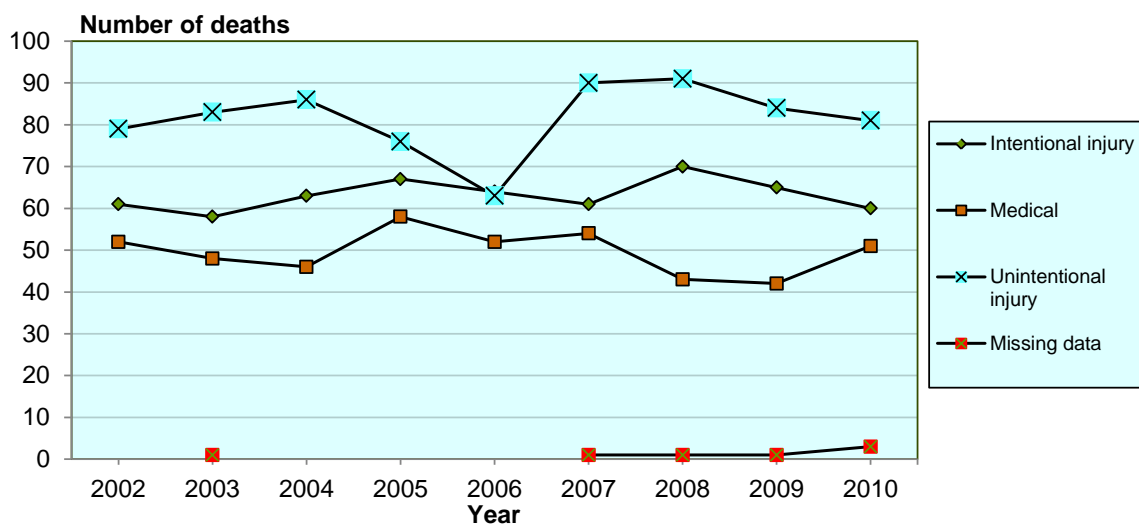
The leading causes of death in young people aged 20 to 24 years were injury, both unintentional and intentional. Transport-related injuries caused the majority of injury deaths, with the second leading cause being suicide.

Figure 7.1: Mortality (%) in young people aged 20–24 years by cause of death, New Zealand 2006–2010 (n=977 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 2002–2010 (n=1755 deaths)



Source: Mortality Review Database

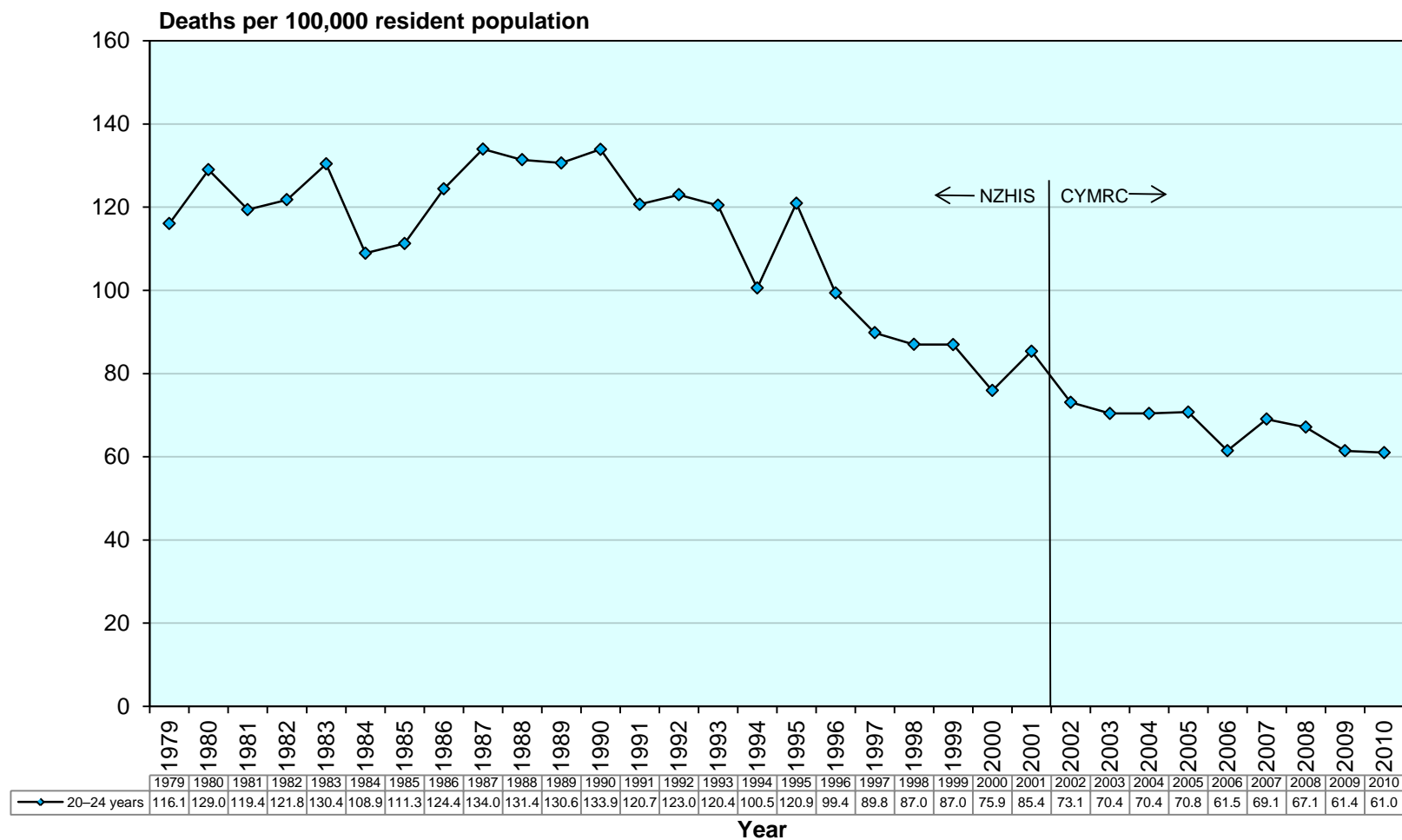
Table 7.1: Mortality (number of deaths and rates per 100,000 resident population) in young people aged 20–24 years by cause of death and year, New Zealand 2006–2010 (n=977 deaths)

Cause of death	2006	2007	2008	2009	2010*	Total	%	Rate 2006–2010
Medical								
Infectious and parasitic diseases	2	1	-	1	-	4	0.4	0.26
Neoplasms	19	17	17	8	16	77	7.9	5.04
Diseases of the blood and blood-forming organs and disorders of immune system	-	-	-	1	1	2	0.2	0.13
Endocrine, nutritional and metabolic diseases	6	4	4	3	2	19	1.9	1.24
Mental and behavioural disorders	-	-	-	-	-	-	-	-
Diseases of the nervous system	9	10	6	6	8	39	4.0	2.55
Diseases of the eye and adnexa	-	-	-	-	-	-	-	-
Diseases of the ear and mastoid process	-	-	-	-	-	-	-	-
Diseases of the circulatory system	6	3	8	10	10	37	3.8	2.42
Diseases of the respiratory system	2	1	2	5	4	14	1.4	0.92
Diseases of the digestive system	-	2	-	2	-	4	0.4	0.26
Diseases of the skin and subcutaneous tissue	-	-	-	-	-	-	-	-
Diseases of the musculoskeletal system and connective tissue	3	2	1	-	1	7	0.7	0.46
Diseases of the genitourinary system	-	1	1	-	-	2	0.2	0.13
Pregnancy, childbirth and the puerperium	1	2	-	-	-	3	0.3	0.20
Certain conditions originating in the perinatal period	1	-	-	-	-	1	0.1	0.07
Congenital anomalies	3	9	4	6	4	26	2.7	1.70
Symptoms & abnormal findings not elsewhere classified	-	2	-	-	5	7	0.7	0.46
Total medical	52	54	43	42	51	242	24.8	15.85
Non-intentional injury (undetermined intent, legal intervention war)								
Cut/pierce	2	-	-	1	-	3	0.3	0.20
Drowning	1	6	3	5	7	22	2.3	1.44
Fall	2	2	6	4	2	16	1.6	1.05
Fire/hot object or substance	1	-	3	2	-	6	0.6	0.39
Firearm	-	-	-	-	2	2	0.2	0.13
Machinery	-	1	1	1	-	3	0.3	0.20
Transport	46	70	69	57	56	298	30.5	19.51
Natural/environmental	1	-	-	1	-	2	0.2	0.13
Overexertion	-	1	-	-	-	1	0.1	0.07
Poisoning	7	5	6	6	9	33	3.4	2.16
Struck by, against	-	1	-	1	2	4	0.4	0.26
Suffocation	1	2	2	3	-	8	0.8	0.52
Other specified, classifiable	1	1	1	3	3	9	0.9	0.59
Other specified, not elsewhere classified	1	-	-	-	-	1	0.1	0.07
Unspecified	-	1	-	-	-	1	0.1	0.07
Complications of medical and surgical care	-	-	-	-	-	-	-	-
Sequelae of surgical and medical care as external cause	-	-	-	-	-	-	-	-
Total non-intentional injury	63	90	91	84	81	409	41.9	26.78
Intentional injury								
Assault	4	7	5	8	4	28	2.9	1.83
Suicide	60	54	65	57	56	292	29.9	19.12
Total intentional injury	64	61	70	65	60	320	32.8	20.96
Missing data	-	1	1	1	3	6	0.6	0.39
Total	179	206	205	192	195	977	100.0	63.98

* Note: while data from any year may potentially be altered due to Coronial inquests and other such proceedings and late notification of cases, this is particularly true of 2010 data; therefore caution should be used when interpreting these data.

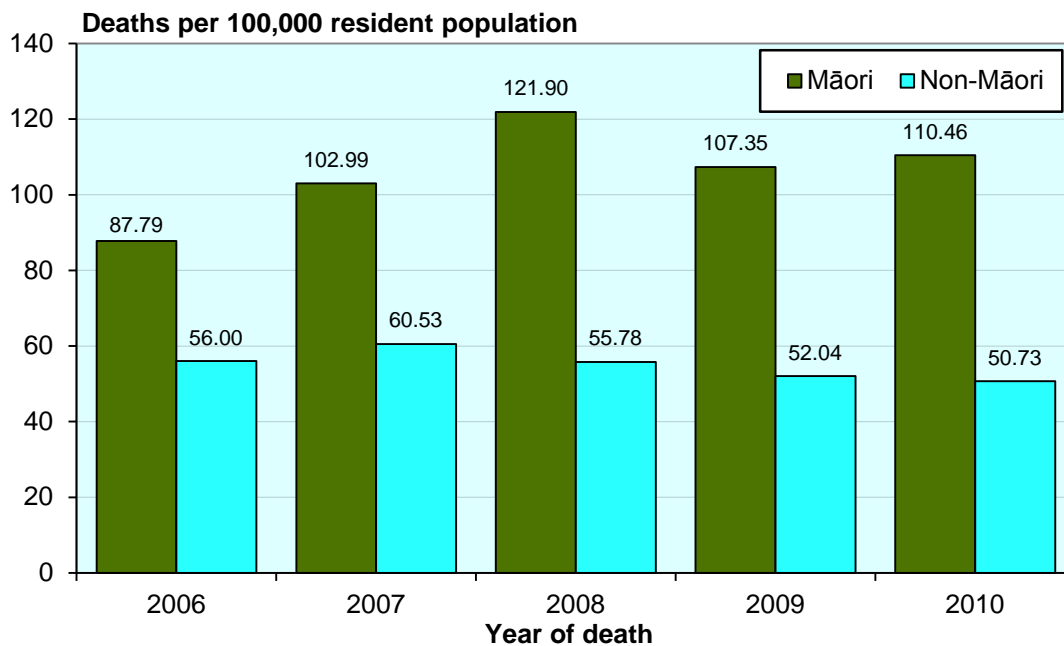
Source: *Numerator*: Mortality Review Database; *Denominator*: NZ MRDG Estimated Resident Population 2006–2010

Figure 7.3: Mortality (rates per 100,000 resident population) in young people aged 20–24 years, New Zealand 1979–2010



Source: *Numerator:* NZHIS pre-2002 data, Mortality Review Database 2002–2010 data; *Denominator:* Statistics NZ Estimated Resident Population pre-2002, NZ MRDG Estimated Resident Population 2002–2010

Figure 7.4: Mortality (rates per 100,000 resident population) in young people aged 20–24 years for Māori and non-Māori, New Zealand 2006–2010 (n=969 deaths*)

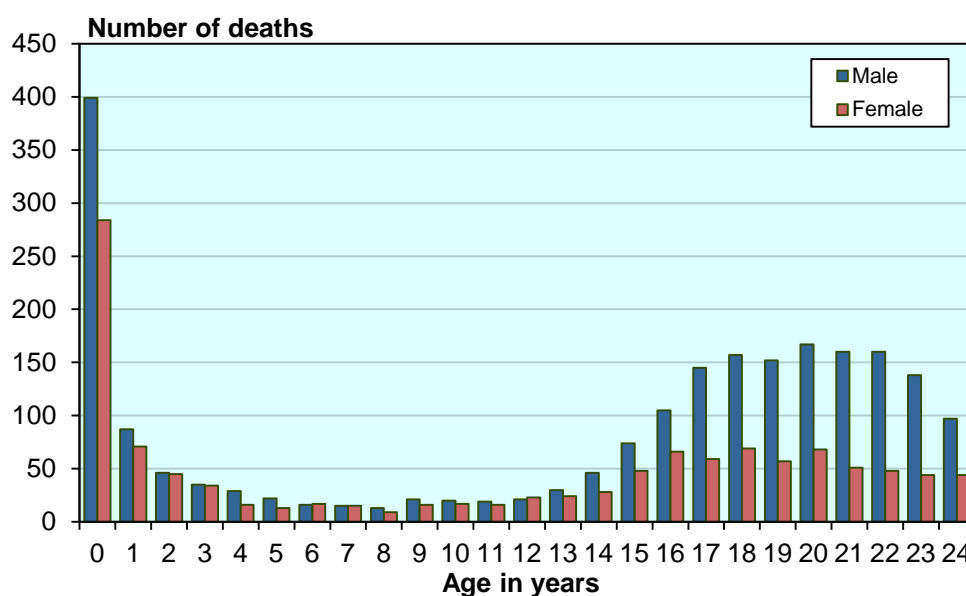


* Eight cases with no available ethnicity data excluded

Source: *Numerator:* Mortality Review Database; *Denominator:* NZ MRDG Estimated Resident Population 2006–2010

Additional data

Figure E.1: Total number of deaths by gender and year of age, New Zealand 2006–2010 combined (n=3356 deaths)



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

Source: Mortality Review Database

Table E.1: Mortality (number of deaths) by age group and year, New Zealand 1979–2010

Year	< 1 year *	1–4 years	5–9 years	10–14 years	15–19 years	20–24 years	Total
1979	310	149	95	99	322	303	1278
1980	355	138	96	96	305	344	1334
1981	308	160	77	97	315	326	1283
1982	324	129	82	74	288	343	1240
1983	353	111	79	92	279	381	1295
1984	368	118	74	84	272	323	1239
1985	321	112	85	95	308	326	1247
1986	329	135	65	97	312	351	1289
1987	324	112	70	94	325	375	1300
1988	350	116	68	76	295	364	1269
1989	336	111	67	70	335	360	1279
1990	253	120	56	62	299	375	1165
1991	240	99	64	68	241	328	1040
1992	214	102	68	75	249	341	1049
1993	207	109	44	56	250	338	1004
1994	211	102	53	51	203	283	903
1995	204	92	53	60	225	338	972
1996	194	95	54	69	257	270	939
1997	182	102	50	61	240	245	880
1998	137	85	53	75	207	231	788
1999	153	74	40	67	204	226	764
2000	143	88	53	61	169	195	709
2001	145	79	47	66	195	219	751
2002	107	81	48	47	163	192	638
2003	116	66	38	61	216	190	687
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	205	700
2009	133	77	33	54	182	192	671
2010	124	64	19	45	170	195	617

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

Source: Mortality Review Database for deaths from 2002 onwards; NZHIS for deaths 1979–2001

Table E.2: Mortality (number of deaths), by gender and cause, 2006–2010 combined (n=3356 deaths)

	Female	Male	Total
Medical			
Infectious and parasitic diseases	26	42	68
Neoplasms	124	154	278
Diseases of the blood and blood-forming organs and immune system	6	8	14
Endocrine, nutritional and metabolic diseases	34	39	73
Mental and behavioural disorders	2	-	2
Diseases of the nervous system	72	98	170
Diseases of the eye and adnexa	-	-	-
Diseases of the ear and mastoid process	-	-	-
Diseases of the circulatory system	55	64	119
Diseases of the respiratory system	54	83	137
Diseases of the digestive system	10	5	15
Diseases of the skin and subcutaneous tissue	-	2	2
Diseases of the musculoskeletal system and connective tissue	10	7	17
Diseases of the genitourinary system	3	4	7
Pregnancy, childbirth and the puerperium	3	-	3
Certain conditions originating in the perinatal period	35	50	85
Congenital anomalies	121	138	259
Symptoms & abnormal findings not elsewhere classified	9	18	27
Total medical	564	712	1276
Percentage by gender	44.2%	55.8%	
Non-intentional injury (undetermined intent, legal intervention/war)			
Cut/pierce	-	6	6
Drowning	17	63	80
Fall	9	34	43
Fire/hot object or substance	9	19	28
Firearm	-	7	7
Machinery	1	6	7
Transport	216	540	756
Natural/environmental	6	11	17
Overexertion	-	1	1
Poisoning	21	43	64
Struck by, against	3	9	12
Suffocation	16	35	51
Other specified, classifiable	1	14	15
Other specified, not elsewhere classified	-	6	6
Unspecified	-	2	2
Complications of medical and surgical care	1	2	3
Sequelae of surgical and medical care as external cause	1	-	1
Total non-intentional injury (undetermined intent, legal intervention/war)	301	798	1099
Percentage by gender	27.4%	72.6%	
Intentional			
Assault	43	50	93
Suicide	150	416	566
Total intentional injury	193	466	659
Percentage by gender	29.3%	70.7%	
Sudden unexpected death			
SUD (1-2 years)	6	11	17
SUDI (<1 year)	110	165	275
Total Sudden unexpected death	116	176	292
Missing data	8	22	30
Total	1182	2174	3356
Percentage by gender	35.2%	64.8%	

Source: Mortality Review Database

Table E.3: Mortality (number of deaths) among non-New Zealand residents, by cause of death and age group, 2006–2010 combined (n=61 deaths)

Category	< 1 year *	1–4 years	5–9 years	10–14 years	15–19 years	20–24 years	Total	%
Medical	5	-	1	1	4	4	15	24.6
Unintentional injury	-	-	2	3	5	31	41	67.2
Intentional injury	1	-	-	-	-	1	2	3.3
Unexplained	1	-	-	-	-	-	1	1.6
Missing data	-	-	-	1	-	1	2	3.3
Total	7	-	3	5	9	37	61	100.0

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

Source: Mortality Review Database

Table E.4: Non-resident deaths (28 days–24 years) by country of residence, 2006–2010 combined (n=61 deaths)

Country	Deaths per year 2006–2010					Total deaths	
	2006	2007	2008	2009	2010	Number	%
Australia	3	2	3	5	3	16	26
Canada	-	-	1	-	-	1	2
China	2	-	-	-	1	3	5
Cook Islands	2	-	-	-	-	2	3
Denmark	1	-	-	-	-	1	2
England	-	1	3	1	1	6	10
France	-	-	-	1	-	1	2
French Polynesia	-	1	1	-	2	4	7
Germany	-	1	-	-	2	3	5
India	1	1	-	-	-	2	3
Ireland	-	-	1	-	1	2	3
Israel	-	-	-	1	-	1	2
Malaysia	-	-	2	-	-	2	3
Norway	-	1	-	-	-	1	2
Samoa	2	-	1	-	3	6	10
South Korea	-	-	-	1	1	2	3
Tonga	-	-	-	-	1	1	2
Uruguay	-	-	-	-	1	1	2
Vietnam	-	-	-	-	1	1	2
USA	1	2	-	1	1	5	8
Total	12	9	12	10	18	61	100.0

Source: Mortality Review Database

Table E.5: Mortality (number of deaths and age-specific mortality rates) by age group and DHB of residence, New Zealand 2006–2010 (n=3356 deaths)

District Health Board	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	Death outside DHB of residence	Death in DHB of residence	% resident deaths outside DHB
Northland	35	2.98	20	48.44	12	21.08	9	13.84	52	87.38	40	110.44	168	5.0	62.06	23	145	13.7
Waitemata	56	1.44	31	22.47	18	9.97	23	11.86	65	32.14	103	56.16	296	8.8	31.59	106	190	35.8
Auckland	56	1.69	22	20.51	11	8.68	15	11.25	66	42.47	71	31.05	241	7.2	30.72	39	202	16.2
Counties Manukau	127	2.90	53	34.82	24	12.22	29	13.99	94	45.58	116	67.81	443	13.2	45.35	116	327	26.2
Waikato	76	2.74	39	39.90	16	12.49	30	21.57	90	64.08	103	81.15	354	10.5	53.64	34	320	9.6
Bay of Plenty	36	2.43	24	44.85	8	10.87	18	22.38	59	78.86	61	119.53	206	6.1	59.16	52	154	25.2
Lakes	28	3.35	8	26.74	6	15.24	9	21.42	32	82.39	27	98.18	110	3.3	59.14	22	88	20.0
Tairāwhiti	6	1.50	3	21.24	-	-	7	33.77	26	137.35	9	70.84	51	1.5	56.96	7	44	13.7
Taranaki	17	2.14	6	22.35	5	13.72	3	7.39	33	80.06	19	65.89	83	2.5	45.63	13	70	15.7
Hawke's Bay	32	2.72	22	52.45	11	19.53	18	29.32	40	67.74	37	94.30	160	4.8	59.33	22	138	13.8
Whanganui	16	3.49	9	58.55	2	9.24	6	24.05	19	75.91	21	124.93	73	2.2	67.35	18	55	24.7
MidCentral	23	1.97	24	57.15	10	17.91	9	14.76	44	64.71	49	80.38	159	4.7	53.10	33	126	20.8
Wairarapa	9	3.34	3	30.87	-	-	2	13.81	7	49.50	12	144.67	33	1.0	52.91	9	24	27.3
Capital & Coast	37	1.84	20	27.79	3	3.46	6	6.69	47	44.68	43	33.23	156	4.6	31.01	31	125	19.9
Hutt Valley	40	3.68	14	35.24	2	3.91	6	11.17	20	35.28	28	64.26	110	3.3	43.02	26	84	23.6
Nelson Marlborough	7	0.83	7	22.18	7	16.73	7	14.81	34	72.67	23	71.94	85	2.5	40.89	17	68	20.0
West Coast	-	-	3	40.04	2	21.12	2	16.06	10	93.07	11	145.89	28	0.8	56.20	5	23	17.9
Canterbury	48	1.46	34	27.46	11	7.08	23	13.72	86	47.56	115	62.52	317	9.4	37.53	22	295	6.9
South Canterbury	5	1.56	4	34.78	1	5.90	3	14.93	28	141.41	14	120.38	55	1.6	66.12	10	45	18.2
Otago	12	1.16	11	27.28	3	5.79	8	13.83	45	56.69	40	44.20	119	3.5	36.03	9	110	7.6
Southland	17	2.10	6	22.17	5	14.18	11	28.67	35	95.92	35	96.53	109	3.2	60.05	17	92	15.6
Total	683	2.15	363	32.37	157	10.81	244	15.53	932	56.84	977	64.00	3356	100.0	43.98	631	2725	

* Under 1 years of age rate is shown as deaths per 1000 live births, all other age categories showing deaths per 100,000 resident population

Source: *Numerator* Mortality Review Database; *Denominator* NZHIS Live Births 2006–2010 for 28 days – <1year, NZ MRDG Estimated Resident Population for 1–24 years of age 2006–2010