Child and Youth Mortality Review Committee

Te Rōpū Arotake Auau Mate o te Hunga Tamariki, Taiohi

Fifth Report to the Minister of Health
Reporting mortality 2002–2008
Appendices

Disclaimer

The Child and Youth Mortality Review Committee prepared this report.

This report does not necessarily represent the views or policy decisions of the Ministry of Health.

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Appendix A: Activities and Highlights of the CYMRC since 2007

A1 Introduction

The Child and Youth Mortality Review Committee (CYMRC) is established by the Minister of Health under sections 11 and 18 of the New Zealand Public Health and Disability Act 2000. Members of the CYMRC are appointed by, and accountable to, the Minister of Health. The Committee's primary objective is to collect and analyse data on child and youth mortality in New Zealand and to make recommendations to the Minister on how to reduce such deaths.

A2 CYMRC membership

Dr Nick Baker (Chair)
Dr Marie Connolly (nominee of the Chief Executive of the Ministry of Social Development)
Dr Elizabeth Craig
Dr Russell Franklin
Eruini George
Dr Anganette Hall
Riana Manuel
Christopher Morris (resigned 2009)
Professor Barry Taylor (term expired 2009)
Dr Pat Tuohy (nominee of the Director-General of Health) (term expired 2009)

For more information about the CYMRC and its current membership, see its website (http://www.cymrc.health.govt.nz).

A3 CYMRC meetings

The CYMRC met four times in Wellington during 2007. Two teleconferences were held in April and July. The meetings were held on:

- 15 February
- 16 and 17 May
- 20 and 21 September
- 15 and 16 November.

The CYMRC met four more times in Wellington during 2008. One teleconference was held in July. The meetings were held on:

- 16 April
- 8 and 9 May
- 11 and 12 September
- 13 and 14 November.

At the time of writing, the CYMRC has met five times in Wellington during 2009. The meetings were held on:

- 12 and 13 February
- 23 and 24 April
- 25 and 26 June
- 13 and 14 August
- 22 and 23 October.

A4 Scientific sub-committee

A CYMRC scientific sub-committee has been in operation for a number of years. The purpose of the sub-committee is to:

- advise the CYMRC on priorities for research into potentially preventable causes of child and youth deaths in New Zealand
- develop processes that promote and authorise the access, use and publication of scientific works that include CYMRC data
- maintain an overview of research and check that data is being reviewed and appropriately reported.

During 2007/08 the scientific sub-committee drafted a new policy for allowing researchers access to the CYMRC data for the purposes of research into areas of mutual interest with the CYMRC. This policy is currently being reviewed internally within the Ministry of Health. Scientific sub-committee members were also involved in the 2008 Mortality Review Data Group Workshop, which considered how the CYMRC database might be improved with a view to reporting greater detail on risk factors contributing to particular classes of death.

A5 Lead co-ordinator

In late 2008, the CYMRC contracted with the Whanganui District Health Board to employ a full-time lead co-ordinator. The lead co-ordinator's primary focus during 2008 and 2009 has been the establishment of local child and youth mortality review groups in every DHB (see A6).

A6 Establishment of local child and youth mortality review groups

The CYMRC process of data collection relies on information from the District Health Board (DHB) of residence of the deceased child or youth. To gather this information, the CYMRC developed a plan to establish a local child and youth mortality review group in every DHB.

Each local child and youth mortality review group is led by a chair and a co-ordinator. As of November 2009, there are 20 DHBs with appointed chairs and co-ordinators for their local review groups.

Collaborative approaches are being developed to make the best use of this emerging national network. Whanganui and MidCentral Health have recruited a shared co-ordinator. The three Auckland area review groups work closely together and do some specific reviews collectively. Hutt Valley and Capital & Coast are developing a collaborative review plan as well.

All DHBs received initial funding for the local child and youth mortality review group via variations to the Crown Funding Agreement.[1] For a number of DHBs these initial variations will soon expire and new variations will be developed so the work can continue. As this occurs, the focus of the lead co-ordinator will shift from establishment to ongoing support, training, guidance and monitoring.

[1] The Crown Funding Agreement is the agreement between the Ministry of Health, acting on behalf of the Crown, and the DHBs, in which the Crown agrees to provide money in return for service provision as specified in the agreement.

As the chairs and co-ordinators are becoming more knowledgeable in regards to mortality review, the Committee is finding that many co-ordinators are developing areas of special expertise. These experts are then a resource for the other local groups, thereby sharing skills across the network.

A7 Local child and youth mortality review group co-ordinators and chairs workshops

To develop consistent best practice and to encourage collaborative development between each review group, the lead co-ordinator organises local co-ordinators and chairs workshops.

The first local co-ordinators and chairs workshop took place at Turnbull House in Wellington in May 2009. The workshop was a success, with 29 chairs and co-ordinators in attendance. Topics included: Developing Recommendations that Make a Difference; Emerging Trends and Themes; Going Through the Proposed Changes to the Data Entry Format; Using Timelines, Defining Risk Factors, Identifying Issues, and Making Recommendations; and Developing Guidelines for Writing Up Issues and Recommendations. At one point the group broke up into two streams: one for new co-ordinators and chairs and one for established local groups. Attendees had the opportunity to ask questions about their work, which led to larger discussions on record management, quality assurance activities, collection of data, privacy issues, and the development of subgroups. General feedback from attendees suggested that the opportunity to share ideas and resources was invaluable.

The second local co-ordinators and chairs workshop was held on 14 October 2009 at the Quality Hotel in Wellington. Once again, co-ordinators and chairs from all over the country came to discuss ways to improve the local mortality review processes.

A8 Māori Caucus

The Māori Caucus is made up of Māori members from each of the Mortality Review Committees, but also includes expertise from certain areas, as required. The Caucus first began to meet in 2006 but lost momentum after several meetings. More recently it has been re-established in a bid to address and provide guidance on health issues that have an over-representation of Māori.

There is a strong desire for this Caucus to exist in order to offer solutions and guidance on issues that pertain solely to Māori. It is also an opportunity to target key areas in a bid to improve the health and wellbeing of Māori whānau. The Māori Caucus held a meeting on 30 July 2009 that focused on the development of SUDI messages to be directed at the Māori community. A second meeting was held on 15 October 2009 to finalise the Caucus' Terms of Reference. The Caucus also has exchanges via email as needed. Regular quarterly meetings are scheduled for 2010.

A9 SUDI working group

Sudden unexpected death in infancy (SUDI) is a cause of death that overlaps the CYMRC and the Perinatal and Maternal Mortality Review Committee (PMMRC). About 60 infants die each year from sudden unexpected death. A review of case histories reveals that known risk factors continue to contribute to many of the deaths.

In early 2009, a SUDI Working Group – made up of members of CYMRC, PMMRC, key experts from the primary health sector, and representatives of non-government organisations – was organised to reach agreement on shared messages and strategies for reducing SUDI. Because Māori infants are particularly vulnerable to SUDI, it was agreed that input was needed from the Māori Caucus. The Māori Caucus held a special meeting to discuss SUDI on 30 July 2009. The CYMRC incorporated the feedback from the Māori Caucus into this report and then organised a smaller SUDI sub-group, which met in Auckland on 28 September 2009.

The SUDI sub-group decided to lobby the Ministry of Health for a SUDI Prevention Toolkit that would target DHBs and health professionals working with families. A special focus would be on what works best to support vulnerable families in communities with the highest needs, especially Māori. The SUDI sub-group will be meeting with Ministry of Health representatives in early 2010 to develop this Toolkit.

A10 SUDI Referral Advisor Pilot Programme

A SUDI Referral Advisor Pilot Programme was established through a collaboration between the Office of the Chief Coroner and the Ministry of Health. The initial recommendation for a role of this type came from the CYMRC. Barry Taylor, the chair of CYMRC at the time the role was first proposed, was instrumental in helping the Ministry of Health obtain funding for this position through the Ministry of Research, Science and Technology's Cross Departmental Research Pool.

The purpose of the SUDI Referral Advisor is to determine the advantages of a health-trained professional working as part of the coronial response to SUDI. The objectives are to:

- co-ordinate the collaborative response to SUDI in Auckland and Northland that maintains the integrity of the coronial process (and its focus on prevention of SUDI) without impinging negatively on families
- identify the benefits in having a person with health training working with all those involved, including bereaved families, parents, coroners, pathologists, police and the mortality review committees
- collect sufficient and accurate information about SUDI occurring in Auckland and Northland to identify how SUDI can be prevented
- recommend a final format for a specific SUDI data collection form.

This one-year pilot programme focuses on deaths that occurred (or will occur) between 15 December 2008 and 15 December 2009 in the Auckland and Northland districts, where the Auckland or Northland coroners accept jurisdiction. The scope of the pilot is all deaths between 0 to 1 year of age where the death was:

- unexpected and unexplained, or initially unexplained
- not in the immediate perinatal period associated with delivery
- not as a result of an accident or injury
- not as a result of a known congenital or genetic condition or disease.

To date, the SUDI Referral Advisor has played a pivotal role co-ordinating between coronial services, the police, pathologists and the other organisations that have an interest in sudden death in infancy. The SUDI Referral Advisor has also been instrumental in establishing a supportive and non-threatening relationship with parents and caregivers, which helps with the collection of information about the baby and the circumstances surrounding the death.

The SUDI Referral Advisor role has been extremely well received by families, health professionals and coronial services staff.

A11 Perinatal pathology workshop

The knowledge and skill set required to practise in perinatal pathology differ from those required for paediatric pathology alone. Therefore, in October 2007 a perinatal pathology workshop was held in Wellington. The main aim of the workshop was to establish an action plan detailing how to increase, sustain and support perinatal pathology services in New Zealand. All pathologists practising perinatal pathology in New Zealand were present, as well as representatives from the CYMRC and the Perinatal and Maternal Mortality Review Committee (PMMRC).

A12 Mortality Review Data Group workshop

On 30 and 31 March 2009, the Mortality Review Data Group hosted a data workshop at the University of Otago. The purpose of this workshop was to evaluate the processes for collecting CYMRC data since 2002, and to discuss how the database and collection processes could be improved. The workshop culminated in a series of proposed upgrades to the database and data collection process that would facilitate a more efficient exchange of information between local co-ordinators, the lead co-ordinator, the CYMRC and the Ministry of Health, including local and national recommendations and actions, and the reporting of vital information currently held on the database for mortality review at all levels. The aim is for these proposals to be implemented as the CYRMC budget allows.

A13 CYMRC advisors

Before the CYMRC makes recommendations in its annual report to the Minister of Health it seeks advisor input. At a minimum, advisors are invited to meet with the CYMRC twice annually, but additional communication takes place via email and teleconference. Approximately six weeks prior to each face-to-face meeting the recommendations from the local child and youth mortality review groups are sent to the advisors. The recommendations identify particular areas of concern related to child and youth mortality. The face-to-face meeting allows the advisors an opportunity to provide the CYMRC with detailed information on current initiatives aimed at solving each problem. Such information furthers the CYMRC's capacity to make informed, evidence-based recommendations.

Some recommendations will eventually be fashioned into official recommendations to the Minister of Health from the CYMRC and published in the Committee's annual report. Other recommendations will be used by the CYMRC to develop further work streams to collect information and clarify issues before recommendations are made. Advisors will also take some of the findings from the CYMRC's reviews back to their own agencies in order to implement changes in their organisations, as needed. The CYMRC and its advisors are able to maximise mutual benefits by fostering a strong two-way relationship.

The CYMRC has had the fortune to benefit from the goodwill of many different advisors. The current advisors are as follows:

- ACC — John Wren
- Office of the Children's Commissioner — Nic Johnstone
- Royal New Zealand Plunket Society — Erin Beatson
- Forensic Pathology — John Rutherford
- Ministry of Transport — David Eyre
- Ministry of Education — Cathye Haddock

• Ministry of Education	Pru Wellington
• Ministry of Education	Ralph Lane
• Ministry of Health	Constance Lehman
• Ministry of Health	Colin Hamlin
• NZ Police	Bill Harrison
• NZ Police	Belinda Himiona
• Ministry of Youth Development	Susan Wauchop
• Office of the Chief Social Worker	Kelly Anderson
• Te Puni Kōkiri	Donna McKenzie

A14 Coronial Relations

The relationship between the CYMRC and New Zealand Coronial Services is very important. While the CYMRC retrieves data from many sources, the coronial services data provides a considerable amount of much needed data about the context and circumstances of the death. At the national level, the CYMRC has developed strong relationships with Judge Neil MacLean, Chief Coroner, and Karen Vaughan, National Manager of Coronial Services. In addition, each Local Child & Youth Mortality Review Group has strived to build a strong relationship with the local coroners of the region.

Appendix B: Methodology

B1 Overview

The Child & Youth Mortality Review process includes national data collection, review of individual deaths in the DHB region where the person resided and a national review of collated information. Precise processes have evolved over the past seven years. Many people and organisations are involved in providing information, reviewing deaths, collating information, analysing and reviewing collated information. The various stages that have contributed to the formation of this report include:

1. National organisations and some individuals provide information directly to the Mortality Review Data Group.
2. The information held centrally is available for use at local review meetings via appointed DHB co-ordinators.
3. After each death is reviewed, these DHB coordinators add further information to the national database.
4. The Mortality Review Data Group collate and analyse information held in the national collection 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.
6. Subject experts use collated case information to prepare sections of the report and the CYMRC advisors review recommendations.
7. Finally the CYMRC considers all available information and feedback in order to make recommendations to the Minister of Health, health professionals and members of the public in the Committee's annual report.

B2 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:

- Births, Deaths and Marriages (Department of Internal Affairs)
- Ministry of Health
- Child, Youth and Family (Ministry of Social Development)
- Water Safety New Zealand
- Coroners
- Coronial Services (Ministry of Justice)
- Ministry of Transport
- local child and youth mortality review groups
- 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 B.1: Flow of case information from sources to the Mortality Review Database

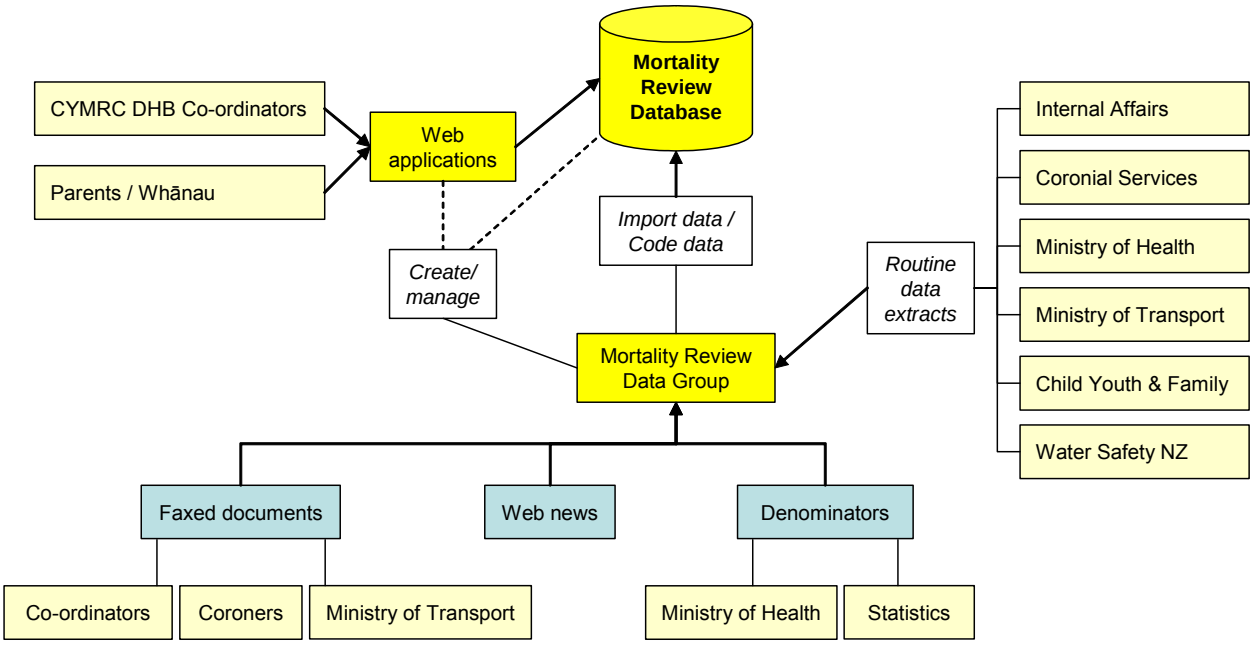


Figure B.1 illustrates these sources of information and some of the processing (Needs 2010). The Mortality Review Data Group maintains two websites which allow individuals to directly contribute information. A link on the public website (www.cymrc.health.govt.nz) allows families to provide feedback on 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, copies of news reports and denominators (provided by Statistics New Zealand and the Ministry of Health).

The Mortality Review Data Group identifies the NHI for each item of information received. They import data into the Mortality Review Database and link information received from the various sources that relates to the same case. To facilitate both the local review and collation processes, the data is coded across a range of variables. These include age group, ethnicity, underlying cause of death, DHB of usual residence, place of death, and region that should review the death. Data is regularly cleaned to eliminate duplicate records, follow up missing person details, clarify DHB of residence (where this is inconsistent with the residential address), and rectify other identified inconsistencies.

When interpreting the CYMRC data it must be remembered that it is derived from a database that is continually being updated. The strength of this approach is that the data pool for each death can continue to grow as more data comes in; all information is retained and available for local mortality review. For the purposes of generating data for ministerial reports, often data sources are prioritised with respect to their importance in coding specific fields, even where this data may change from year to year as new data sources become available. For example, the initial source of a death may be a news item. If new

information received relating to the death changes, the classification of the cause of death, then the subsequent report, may state the death as owing to a different cause than in previous sources. This means that consecutive annual reports may have slightly different numbers in any one category, but the most recent reports should be the most accurate.

B3 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 appointed a chair and a 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. These may be recorded against a timeline, or charted using a white board, computer and data projector, or recorded on paper.

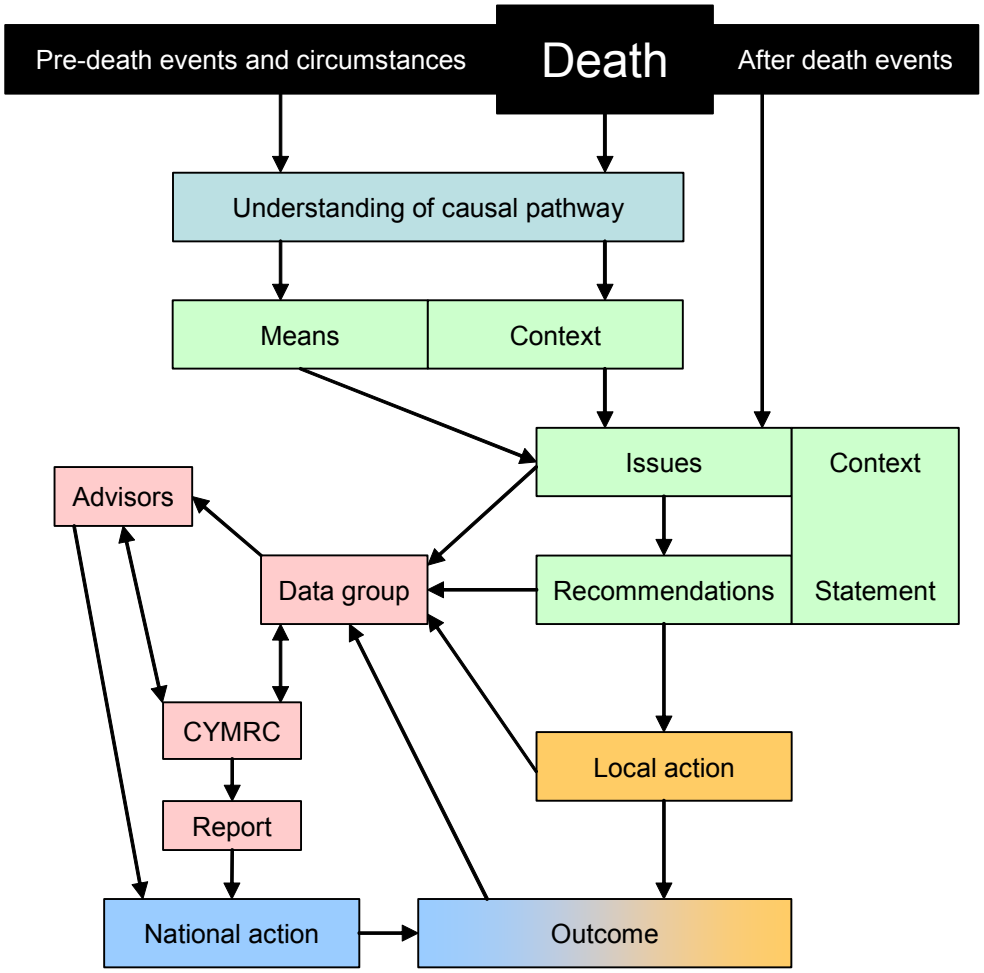
Information shared in the context of the review meeting must remain confidential to the process. Issues identified in the meeting that require urgent action from participating agencies, such as aspects of illegal activity or the safety of others, must be dealt with outside the review process using the 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.

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 actioned locally. Although only a small 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.

Figure B.2: Local review group conceptualisation of causal pathway from death event



As seen in Figure B.2, for every death there is a *context* in which it occurs and a *means* of death. The context of a death describes the cluster of personal and environmental factors (eg, risk factors or circumstances) that together contribute to, or fail to prevent, a death. The means of death describes the final event or disease state that led to a death. The same context may lead to death by a variety of means (eg, unsupervised toddlers or youth risk-taking).

A *causal pathway* is determined by understanding how the context and means of death came together with lethal consequences. Along the causal pathway it is possible to identify points where something could have happened differently. These are referred to as 'issues'. Issues can also arise with regard to actions that occurred after a death.

When the issues are considered at the local or national level, it is often possible to identify ways to interrupt causal pathways or improve after-death actions. Such consideration leads to the generation of *recommendations*, which are expressed in two parts: a context statement and a proposed action. Placing the recommendation into context allows it to be shared with others in a depersonalised way for wider consideration.

Recommendations can result in local action as members of the LCYMRG take the learning from the review back to their work and alter practices. Recommendations are collected on the database for thematic analysis to influence work with advisors and to help understand the quantitative data in the database leading to recommendations in the Annual Report. It is planned that the database will maintain a record of what actions occur as a result of this work and, where possible, what the final outcome is at a community level.

B4 Analysis and coding

B4.1 Mortality data

The data for this report was extracted from the Mortality Review Database on 28 August 2009. The child and youth deaths presented in this report all occurred between 1 January 2002 and 31 December 2008. In all tables, the *year of death* refers to the calendar year of the actual death (not the year of registration).

B4.2 Cause of death

Based on all information received, the Mortality Review Data Group code cause of death based on the ICD-10 chapter heading as sanctioned by the CYMRC in 2003. The cause of death is designated as the single underlying cause most likely to be considered preventable. For example, where an individual has drowned but the cause of drowning is due to a transport incident, the CYMRC will record the cause of death as transport. This may be different from systems with different purposes, such as a post-mortem or coroner's inquiry, which would be likely to identify the cause of death as drowning.

In charts and graphs, the *awaiting coroner* category refers to deaths for which no coroner's finding has been received and no information determining the cause of death has been received from any other source either. Also, the cause *transport* includes deaths involving on- and off-road vehicles, as well as trains, planes and watercraft, where the deceased may have been a passenger, driver or pedestrian.

In response to requests for more detailed ICD-10 coding, the Ministry of Health extract was altered in 2008 to include their mortality coding. In the current report this coding has been mapped to CYMRC cause of death coding for cases identified in 2008. By August 2009, only a small proportion of all deaths had been reviewed locally. In future, both the ICD-10 cause of death from the Ministry of Health and the cause and context as determined by local review, will be available.

B4.3 Ethnicity

Ethnicity data is available from Births, Deaths and Marriages, Ministry of Health, local sources and from coronial records. The Mortality Review Data Group prioritise both data sources and specific ethnicities. Further details are available from the Mortality Review Data Group. The tables in this report prioritise ethnicities into the following groups: Māori, Pacific, Asian and Other (including New Zealand European). One prioritised ethnicity is presented when ethnicity data is given.

B4.4 Statistics

The frequencies and discrete statistics were computed from the database by the Mortality Review Data Group. Percentages have been displayed with one decimal place. In some cases, due to rounding, the percentages do not sum exactly to 100%.

Ninety-five percent confidence intervals for mortality rates have been computed using the Exact Method (Agresti and Coull 1998). These confidence intervals should be used when comparing two rates and, when there is no overlap, indicate that there is a statistically significant difference. The Exact Method was used for all confidence intervals except for those shown in Table 1.2 which employs relative risk confidence intervals.

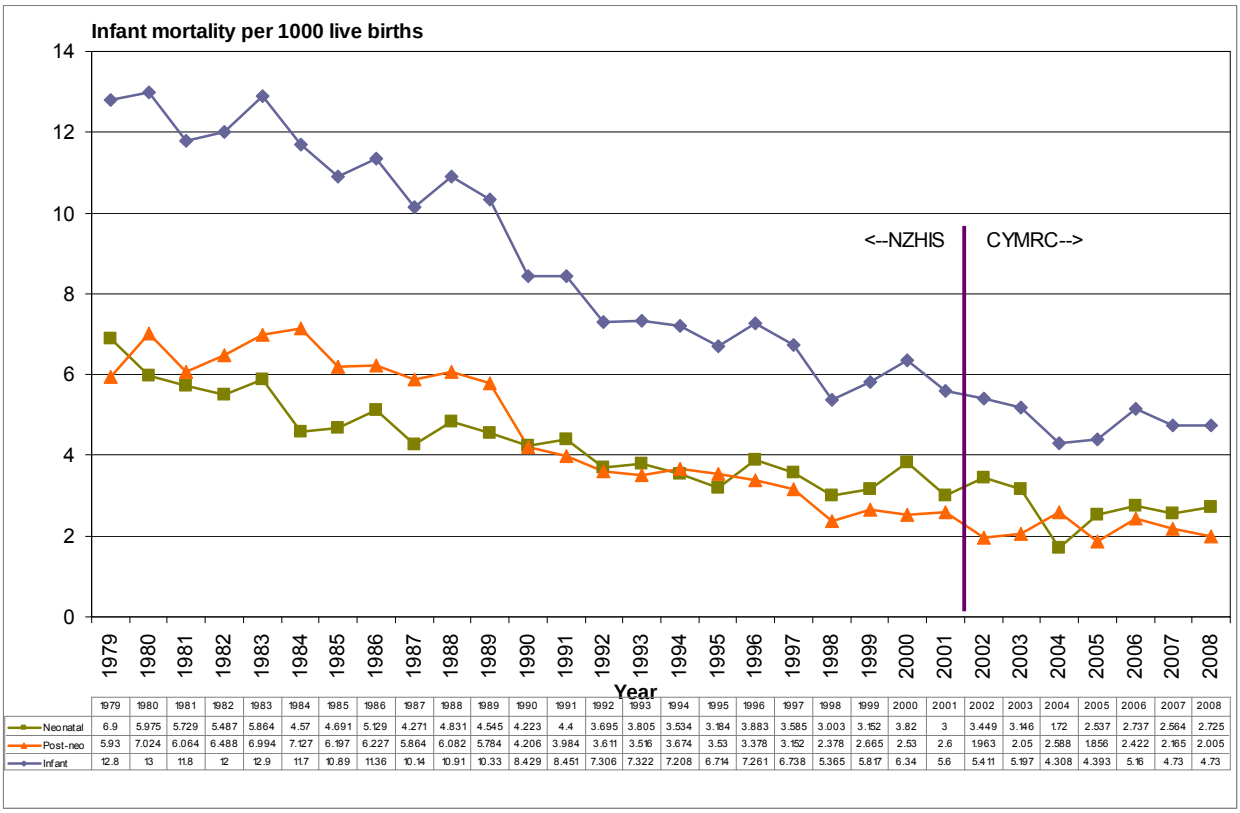
In Figure 1.1, which demonstrates post-neonatal mortality by residence, the confidence intervals for post-neonatal mortality rate by DHB of residence have been plotted along with the national post-neonatal mortality rate. If the confidence intervals for the DHB of residence rate do not include the national rate, then this is evidence of the difference between the DHB rate and the national rate.

The denominator for mortality rate is taken from the estimated resident population (for 30 June in the year of death), as published by Statistics New Zealand. This is based on a projection on the count, including: all residents in the most recent Census and residents who were temporarily overseas at the time of the most recent Census, with an adjustment up for residents who may have been missed by the Census or an adjustment down for anyone who may have been counted twice. The denominator for mortality rates by ethnicity, was provided by the Ministry of Health.

The deaths of non-New Zealand residents are excluded from the main sections of the report because the denominator in rate calculations (estimated resident population from Statistics New Zealand) excludes visitors from overseas. Appendix K provides information on this group of deaths.

Appendix C: Infant Mortality (Birth to 1 year)

Figure C.1: Infant, neonatal and post-neonatal mortality (rate per 1000 live births), 1979–2008



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Neonatal	6.9	5.975	5.729	5.487	5.864	4.57	4.691	5.129	4.271	4.831	4.545	4.223	4.4	3.695	3.805	3.534	3.184	3.883	3.585	3.003	3.152	3.82	3	3.449	3.146	1.72	2.537	2.737	2.564	2.725
Post-neo	5.93	7.024	6.064	6.488	6.994	7.127	6.197	6.227	5.864	6.082	5.784	4.206	3.984	3.611	3.516	3.674	3.53	3.378	3.152	2.378	2.665	2.53	2.6	1.963	2.05	2.588	1.856	2.422	2.165	2.005
Infant	12.8	13	11.8	12	12.9	11.7	10.89	11.36	10.14	10.91	10.33	8.429	8.451	7.306	7.322	7.208	6.714	7.261	6.738	5.365	5.817	6.34	5.6	5.411	5.197	4.308	4.393	5.16	4.73	4.73

Figure C.2: Causes of post-neonatal mortality (%), by category, 2003–2008 combined (795 deaths)

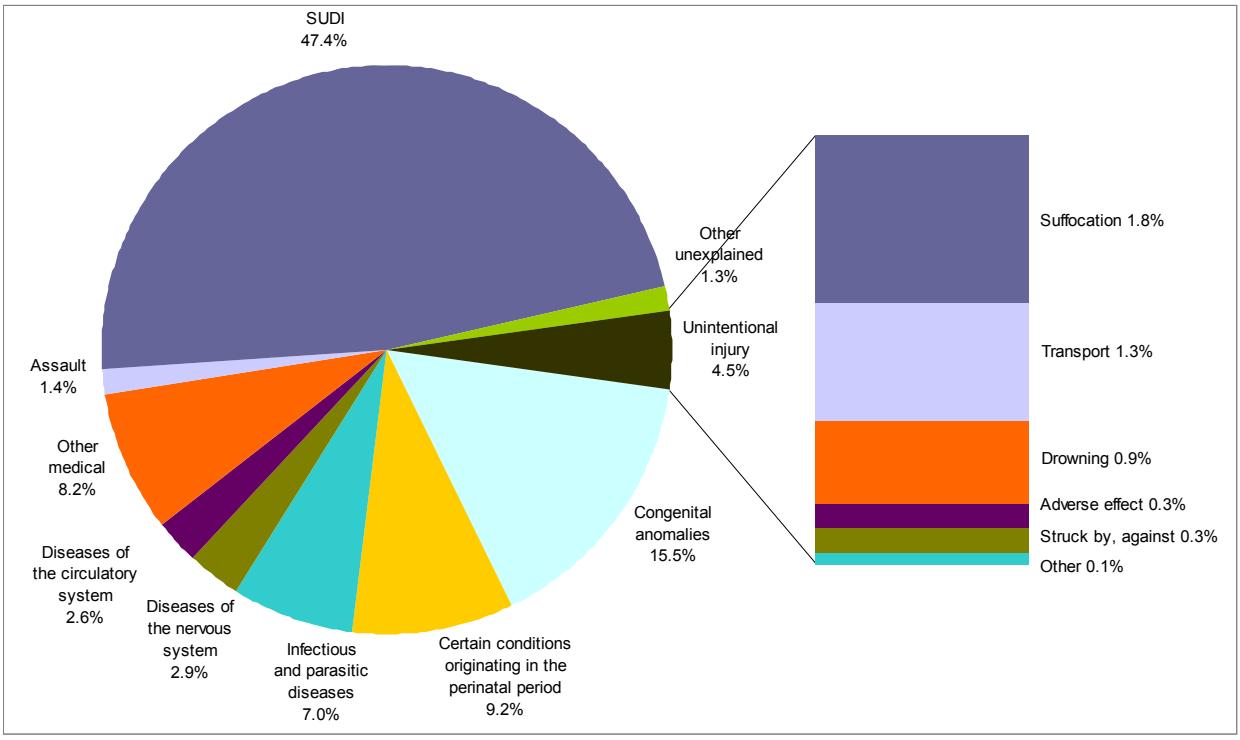
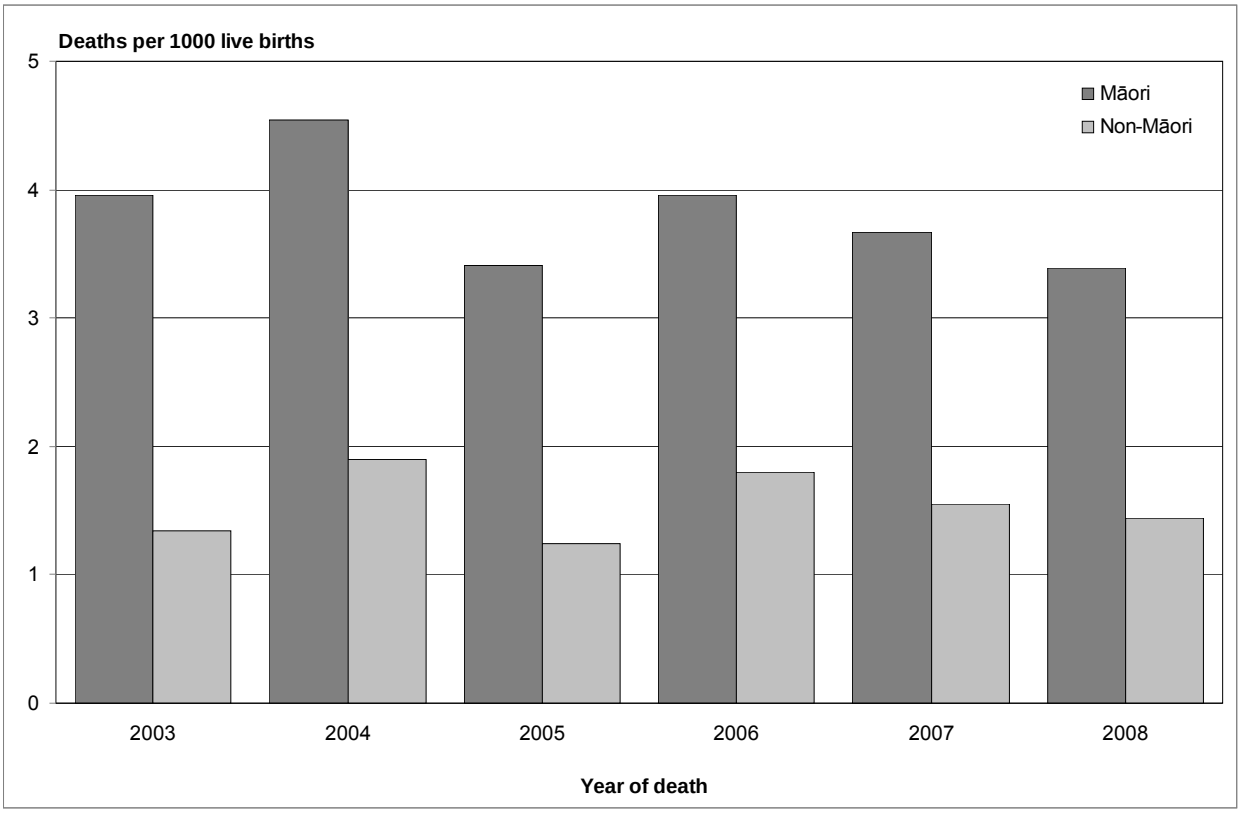


Table C.1: Post-neonatal mortality (number and age-specific rate per 1000 live births), by cause, 2003–2008

	Deaths								Avg rate*
	2003	2004	2005	2006	2007	2008	Total	%	
Medical									
Infectious and parasitic disease	10	22	7	8	6	3	56	7.0	0.18
Neoplasms	2	1	3	1	5	-	12	1.5	0.04
Diseases of the blood and blood-forming organs and disorders of immune system	-	-	-	-	-	1	1	0.1	-
Endocrine, nutritional and metabolic diseases	1	2	2	1	3	1	10	1.3	0.03
Diseases of nervous system	6	5	2	4	2	4	23	2.9	0.06
Diseases of circulatory system	2	1	3	7	5	3	21	2.6	0.06
Diseases of respiratory system	1	-	1	2	2	6	12	1.5	0.02
Diseases of digestive system	1	3	1	3	1	1	10	1.3	0.03
Diseases of genitourinary system	-	2	-	1	-	-	3	0.4	0.01
Certain conditions originating in the perinatal period	9	12	12	11	15	14	73	9.2	0.20
Congenital anomalies	18	17	21	17	27	23	123	15.5	0.33
Symptoms & abnormal findings not elsewhere classified	2	-	-	1	3	5	11	1.4	0.02
Unknown	-	-	-	-	-	6	6	0.8	-
Total medical	**52**	**65**	**52**	**56**	**69**	**67**	**361**	**45.4**	**0.98**
Unintentional injury									
Adverse effect of medication or treatment	-	-	-	-	2	-	2	0.3	0.01
Drowning	1	1	1	-	3	1	7	0.9	0.02
Fire/burn/heat/smoke	-	1	-	-	-	-	1	0.1	0.00
Transport	-	4	-	1	2	3	10	1.3	0.02
Struck by, against	-	1	-	-	1	-	2	0.3	0.01
Suffocation	2	2	5	-	2	3	14	1.8	0.04
Total unintentional injury	**3**	**9**	**6**	**1**	**10**	**7**	**36**	**4.5**	**0.10**
Intentional Injury									
Assault	-	6	1	4	-	-	11	1.4	0.04
Total intentional injury	**-**	**6**	**1**	**4**	**-**	**-**	**11**	**1.4**	**0.04**
Unexplained									
SUDI	61	72	49	85	61	49	377	47.4	1.10
Awaiting coroner	-	-	1	-	-	8	9	1.1	0.00
Other	-	-	-	-	1	-	1	0.1	0.00
Total unexplained	**61**	**72**	**50**	**85**	**62**	**57**	**387**	**48.7**	**1.10**
Total	**116**	**152**	**109**	**146**	**141**	**131**	**795**	**100.0**	**2.22**

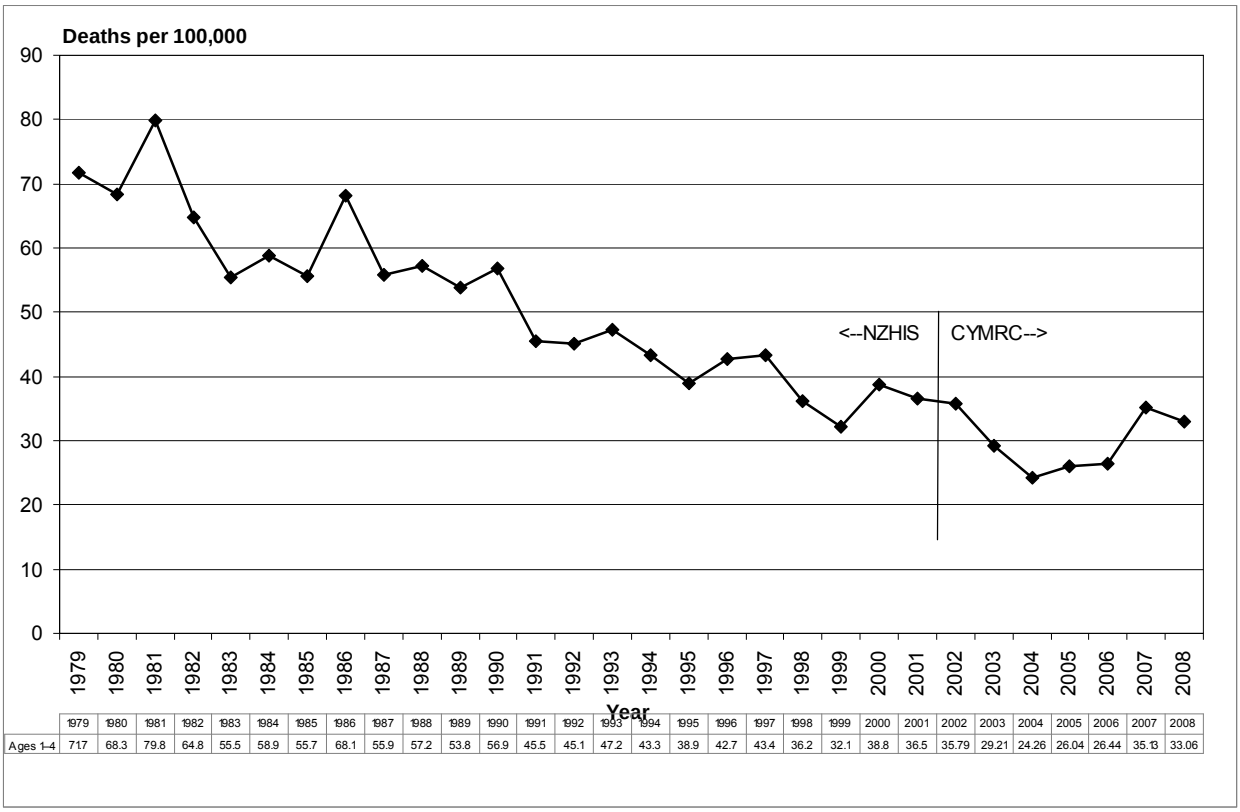
* Average rate per 1000 live births is calculated using 2003–2007 data and excludes 2008 owing to the number of cases where cause of death is unknown or where cases are awaiting coronial cause of death.

Figure C.3: Post-neonatal mortality (age-specific rate per 1000 live births), Māori and non-Māori, 2003–2008



Appendix D: Child Mortality (1–4 years old)

Figure D.1: Mortality (age-specific rate per 100,000) in children aged 1–4 years, 1979–2008



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Ages 1-4	71.7	68.3	79.8	64.8	55.5	58.9	55.7	68.1	55.9	57.2	53.8	56.9	45.5	45.1	47.2	43.3	38.9	42.7	43.4	36.2	32.1	38.8	36.5	35.79	29.21	24.26	26.04	26.44	35.13	33.06

Figure D.2: Cause of mortality in children aged 1–4 years (%), by category of death, 2003–2008 combined (399 deaths)

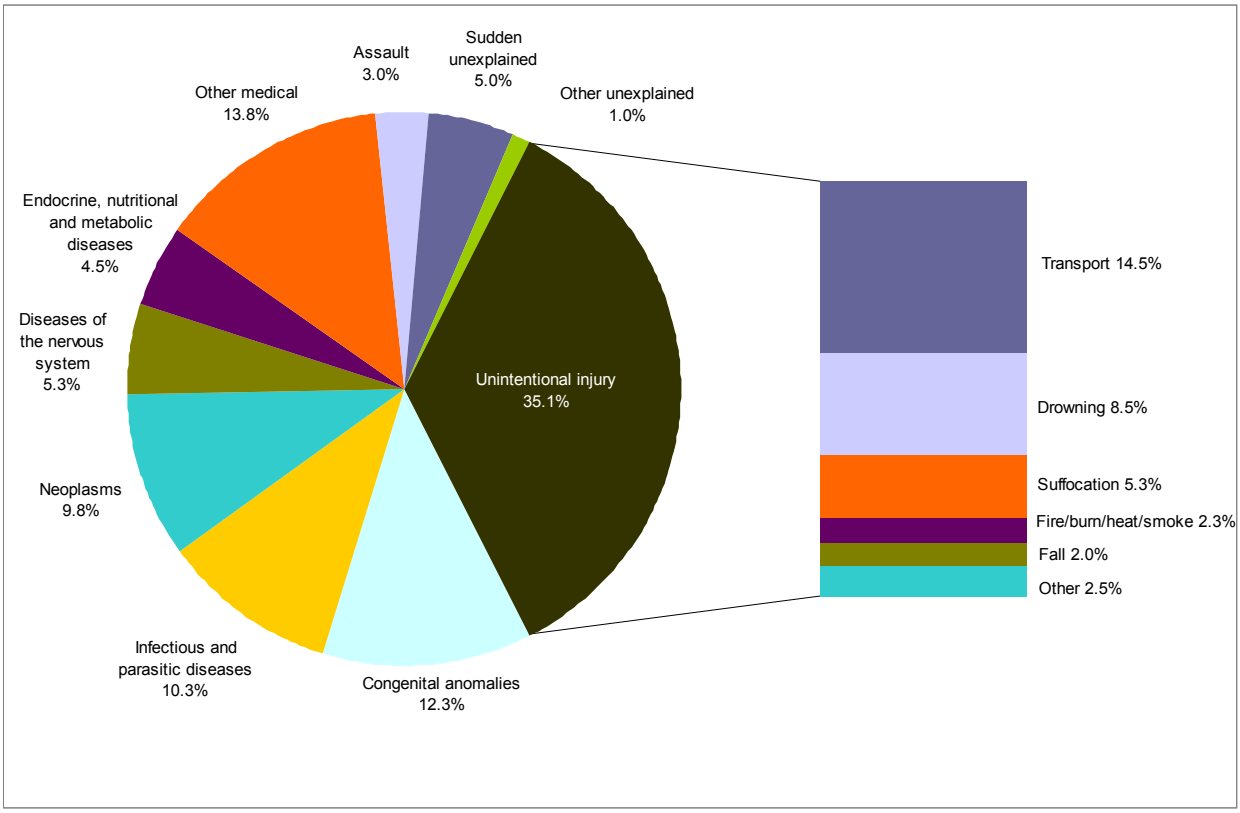
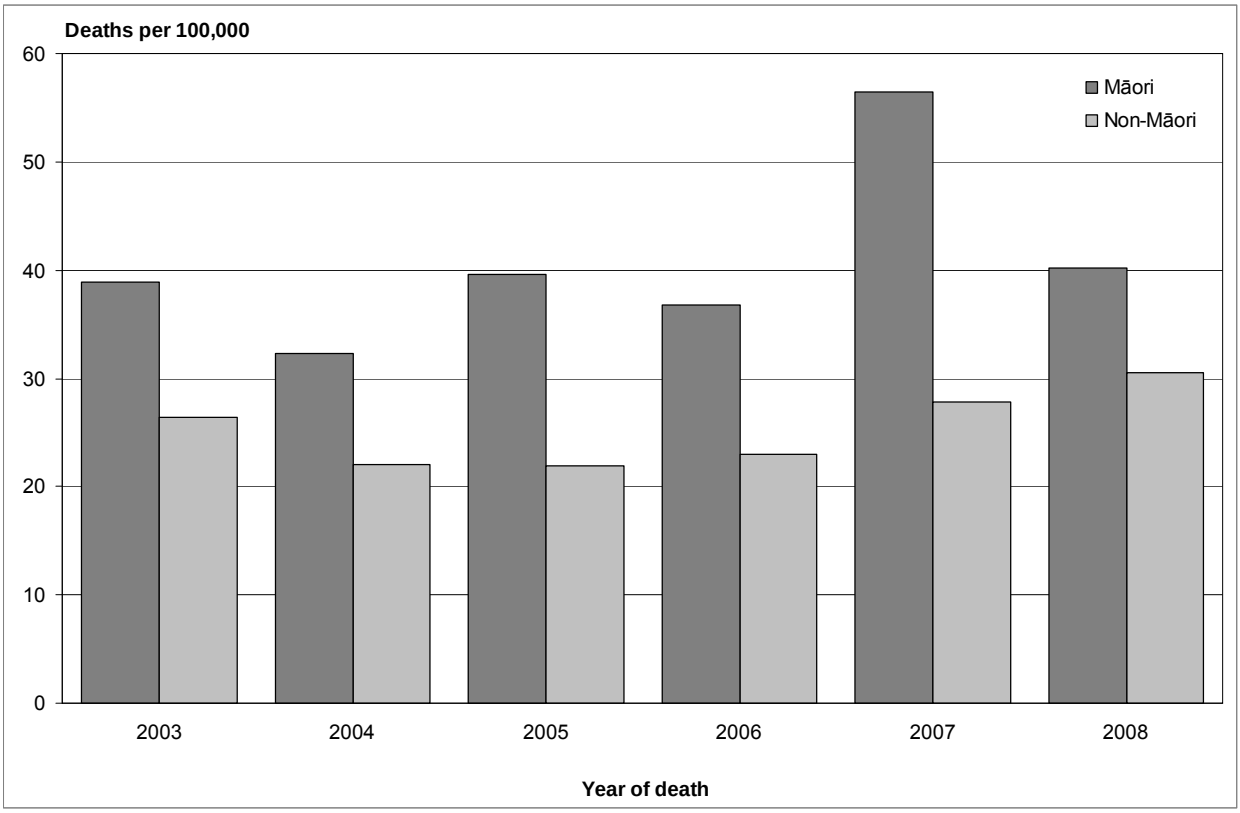


Table D.1: Mortality in children aged 1–4 years (number of deaths and age-specific rate per 100,000), by cause, 2003–2008

	Deaths								Avg rate*
	2003	2004	2005	2006	2007	2008	Total	%	
Medical									
Infectious and parasitic disease	6	5	9	6	9	6	41	10.28	3.08
Neoplasms	6	4	5	7	9	8	39	9.77	2.72
Diseases of the blood and blood-forming organs and disorders of immune system	-	-	-	1	1	1	3	0.75	0.17
Endocrine, nutritional and metabolic diseases	4	2	2	1	3	6	18	4.51	1.06
Diseases of nervous system	4	1	4	5	2	5	21	5.26	1.41
Diseases of circulatory system	1	2	1	7	2	3	16	4.01	1.14
Diseases of respiratory system	1	1	-	-	4	5	11	2.76	0.52
Diseases of digestive system	1	3	1	-	1	-	6	1.50	0.53
Certain conditions originating in the perinatal period	4	2	2	4	1	-	13	3.26	1.15
Congenital anomalies	10	10	6	5	11	7	49	12.28	3.69
Symptoms & abnormal findings not elsewhere classified	1	-	-	-	1	3	5	1.25	0.18
Unknown	-	-	-	-	-	1	1	0.25	-
Total medical	**38**	**30**	**30**	**36**	**44**	**45**	**223**	**55.89**	**15.65**
Unintentional injury									
Adverse effect of medication or treatment	-	-	1	-	-	-	1	0.25	0.09
Drowning	8	3	6	3	8	6	34	8.52	2.46
Fall	1	1	-	2	2	2	8	2.01	0.53
Fire/burn/heat/smoke	1	1	2	1	2	2	9	2.26	0.61
Firearm	-	-	-	-	1	-	1	0.25	0.09
Machinery	-	-	-	-	1	-	1	0.25	0.09
Transport	10	9	14	6	10	9	58	14.54	4.31
Natural/environmental/animal	-	-	1	-	-	-	1	0.25	0.09
Poisoning	-	1	-	-	-	-	1	0.25	0.09
Struck by, against	-	-	-	1	2	2	5	1.25	0.26
Suffocation	2	2	3	2	3	9	21	5.26	1.05
Total unintentional injury	**22**	**17**	**27**	**15**	**29**	**30**	**140**	**35.09**	**9.67**
Intentional injury									
Assault	1	3	1	3	3	1	12	3.01	0.97
Total intentional injury	**1**	**3**	**1**	**3**	**3**	**1**	**12**	**3.01**	**0.97**
Unexplained									
SUDI	5	4	1	5	3	2	20	5.01	1.58
Awaiting coroner	-	-	-	-	1	-	1	0.25	0.09
Other	-	1	-	1	1	-	3	0.75	0.26
Total unexplained	**5**	**5**	**1**	**6**	**5**	**2**	**24**	**6.02**	**1.93**
Total	**66**	**55**	**59**	**60**	**81**	**78**	**399**	**100.00**	**28.22**

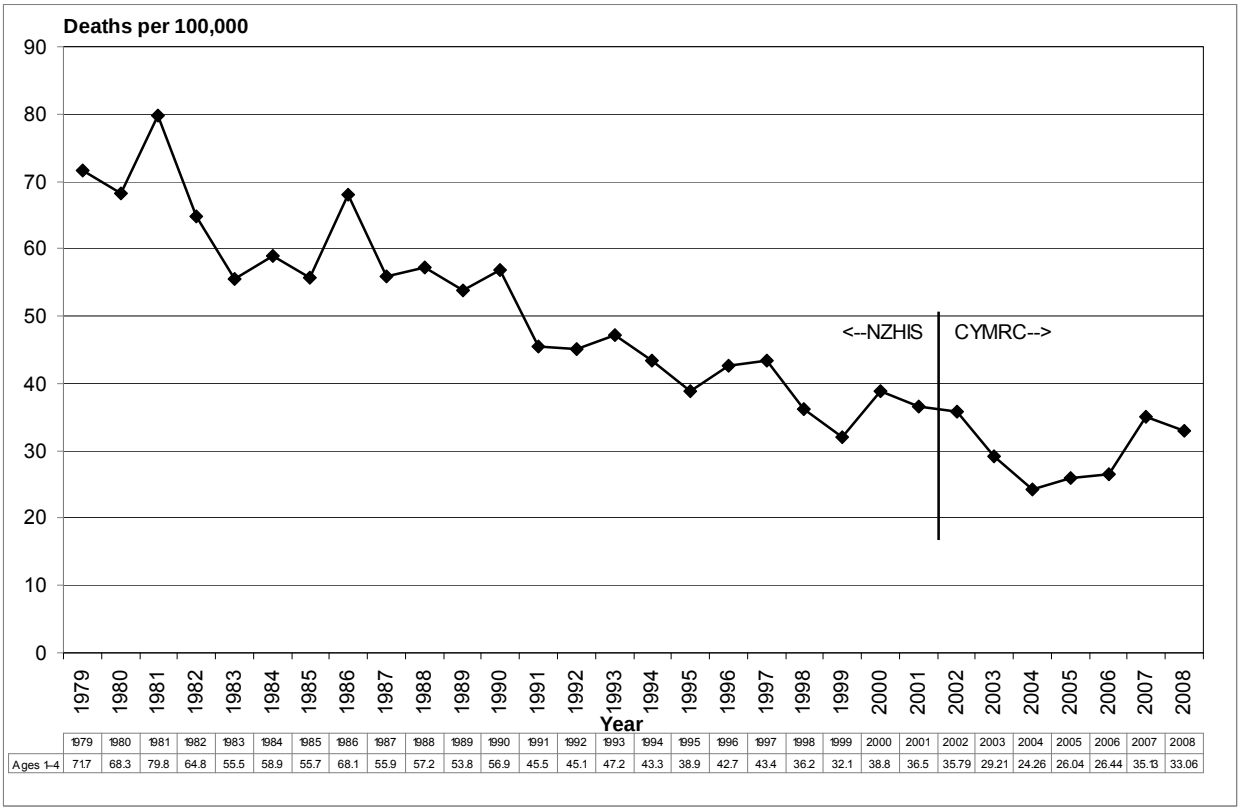
* Average rate per 100,000 is calculated using 2003–2007 data and excludes 2008 owing to the number of cases where cause of death is unknown or where cases are awaiting coronial cause of death.

Figure D.3: Mortality (age-specific rate per 100,000) in Māori and non-Māori children aged 1–4 years, 2003–2008



Appendix E: Child Mortality (5–9 years old)

Figure E.1: Mortality (age-specific rate per 100,000) in children aged 5–9 years, 1979–2008



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Ages 1–4	71.7	68.3	79.8	64.8	55.5	58.9	55.7	68.1	55.9	57.2	53.8	56.9	45.5	45.1	47.2	43.3	38.9	42.7	43.4	36.2	32.1	38.8	36.5	35.79	29.21	24.26	26.04	26.44	35.13	33.06

Figure E.2: Cause of mortality in children aged 5–9 years (%), by category of death, 2003–2008 combined (220 deaths)

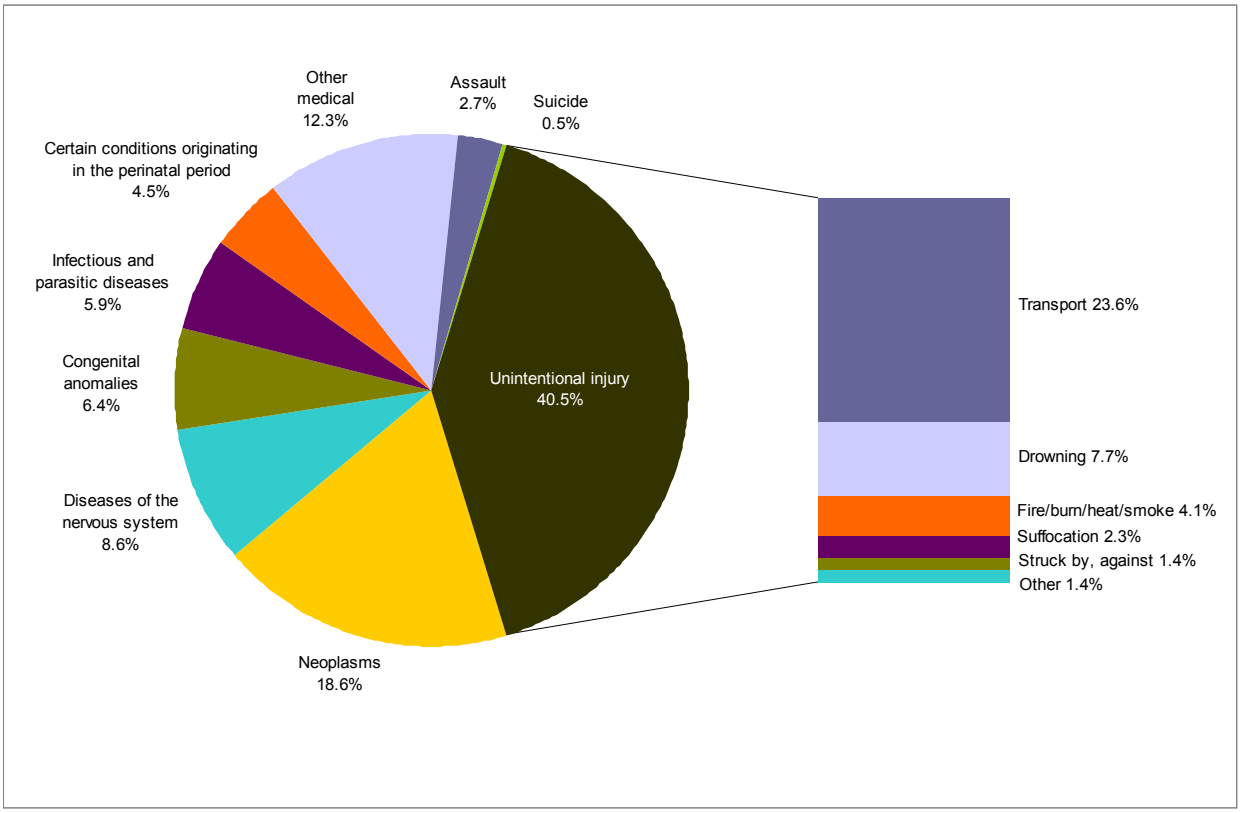
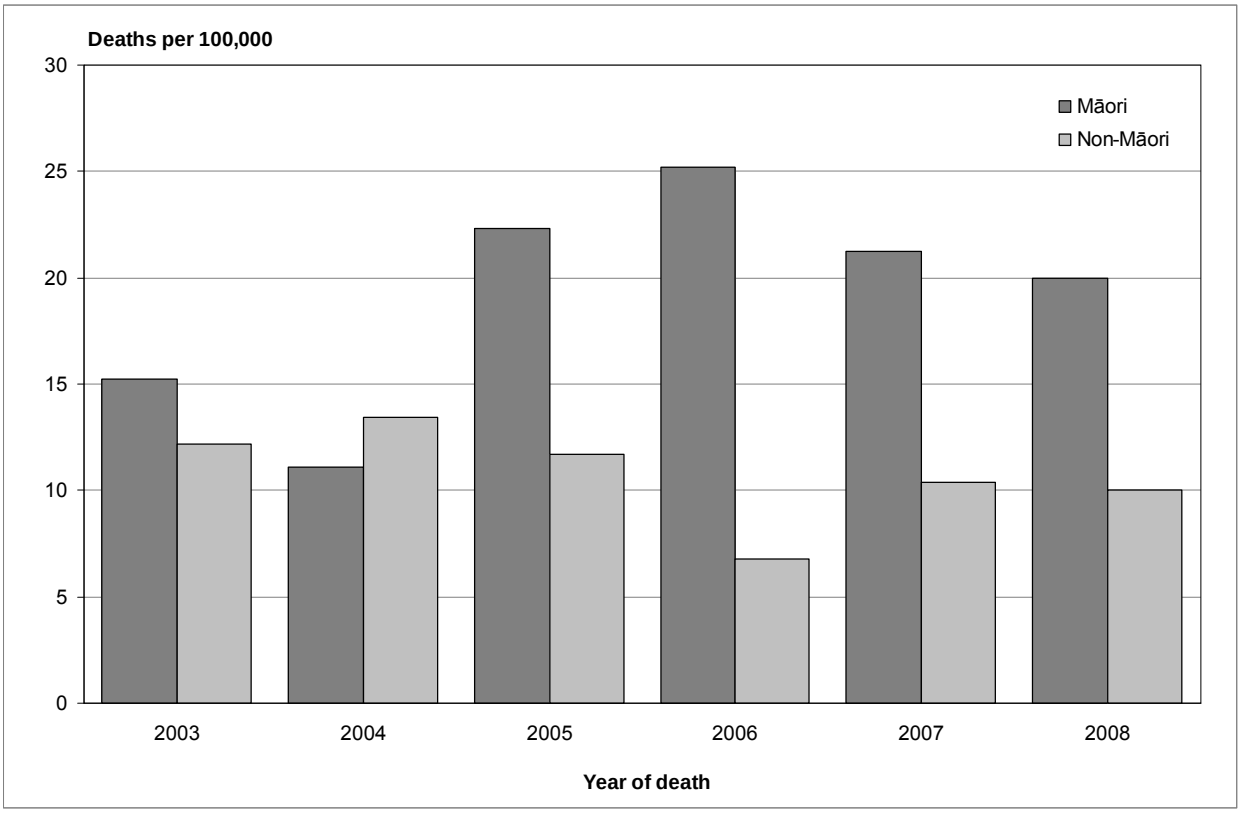


Table E.1: Mortality in children aged 5–9 years (number of deaths and age-specific rate per 100,000), by cause, 2003–2008

	Deaths								Avg rate*
	2003	2004	2005	2006	2007	2008	Total	%	
Medical									
Infectious and parasitic disease	3	-	5	-	4	1	13	5.91	0.82
Neoplasms	6	5	10	5	6	9	41	18.64	2.19
Diseases of the blood and blood-forming organs and disorders of immune system	-	-	-	-	1	-	1	0.45	0.07
Endocrine, nutritional and metabolic diseases	1	2	-	1	-	-	4	1.82	0.27
Diseases of nervous system	1	3	4	5	3	3	19	8.64	1.10
Diseases of circulatory system	4	-	-	-	-	4	8	3.64	0.27
Diseases of respiratory system	1	1	-	2	2	2	8	3.64	0.41
Diseases of digestive system	-	-	-	1	-	-	1	0.45	0.07
Diseases of musculoskeletal system and connective tissue	-	-	-	-	1	-	1	0.45	0.07
Diseases of genitourinary system	1	-	-	-	-	-	1	0.45	0.07
Certain conditions originating in the perinatal period	1	5	1	-	3	-	10	4.55	0.68
Congenital anomalies	1	2	4	1	3	3	14	6.36	0.75
Symptoms & abnormal findings not elsewhere classified	-	-	-	-	1	1	2	0.91	0.07
Unknown	-	-	-	-	-	1	1	0.45	-
Total medical	**19**	**18**	**24**	**15**	**24**	**24**	**124**	**56.36**	**6.84**
Unintentional injury									
Drowning	2	5	2	2	4	2	17	7.73	1.03
Fire/burn/heat/smoke	5	-	1	-	2	1	9	4.09	0.55
Transport	9	11	9	12	7	4	52	23.64	3.28
Natural/environmental/animal	-	-	-	1	-	-	1	0.45	0.07
Poisoning	-	-	-	1	-	-	1	0.45	0.07
Struck by, against	1	-	1	1	-	-	3	1.36	0.20
Suffocation	1	1	2	-	-	1	5	2.27	0.27
Electrocution	-	-	-	-	-	1	1	0.45	-
Total unintentional injury	**18**	**17**	**15**	**17**	**13**	**9**	**89**	**40.45**	**5.47**
Intentional injury									
Assault	1	2	1	-	1	1	6	2.73	0.34
Suicide	-	-	1	-	-	-	1	0.45	0.07
Total intentional injury	**1**	**2**	**2**	**-**	**1**	**1**	**7**	**3.18**	**0.41**
Total	**38**	**37**	**41**	**32**	**38**	**34**	**220**	**100.00**	**12.72**

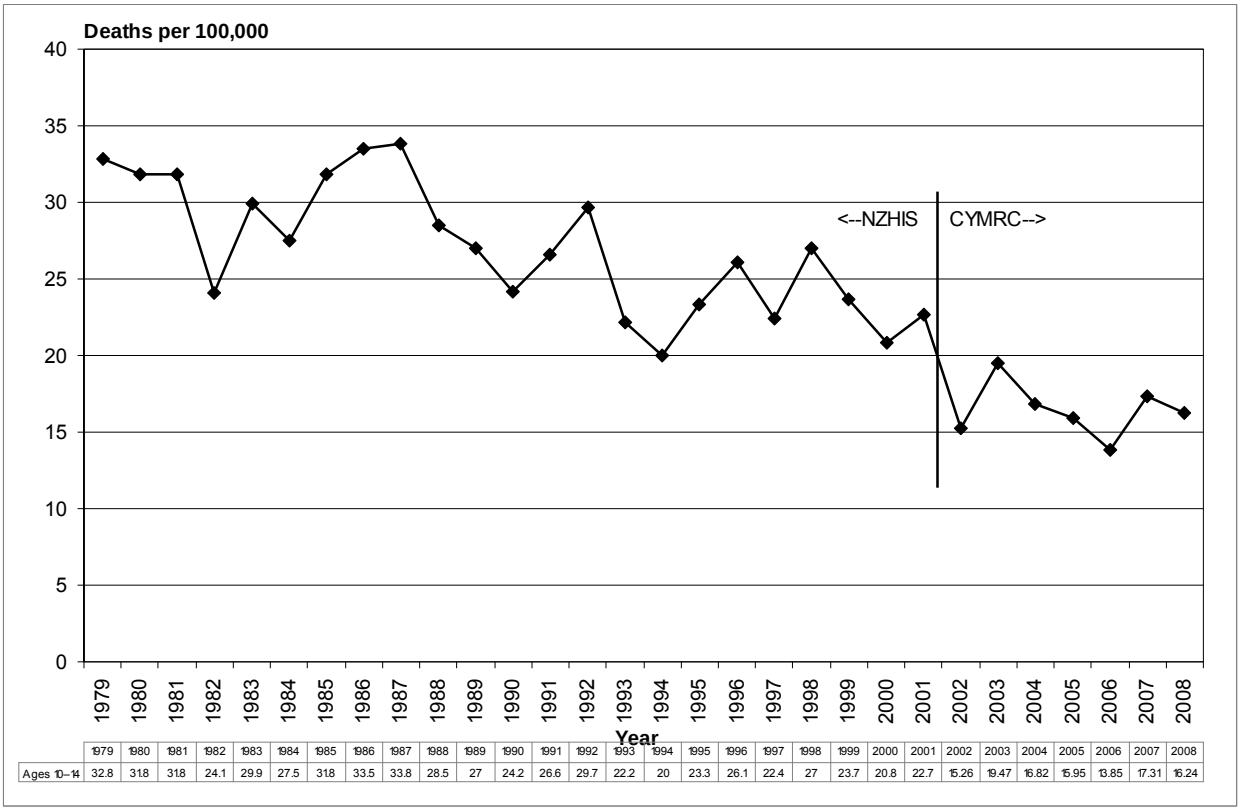
* Average rate per 100,000 is calculated using 2003–2007 data and excludes 2008 owing to the number of cases where cause of death is unknown or where cases are awaiting coronial cause of death.

Figure E.3: Mortality (age-specific rate per 100,000) in Māori and non-Māori children aged 5–9 years, 2003–2008



Appendix F: Child Mortality (10–14 years old)

Figure F.1: Mortality (age-specific rate per 100,000) in children aged 10–14 years, 1979–2008



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Ages 10–14	32.8	31.8	31.8	24.1	29.9	27.5	31.8	33.5	33.8	28.5	27	24.2	26.6	29.7	22.2	20	23.3	26.1	22.4	27	23.7	20.8	22.7	15.26	19.47	16.82	15.95	13.85	17.31	16.24

Figure F.2: Cause of mortality in children aged 10–14 years (%), by category of death, 2003–2008 combined (309 deaths)

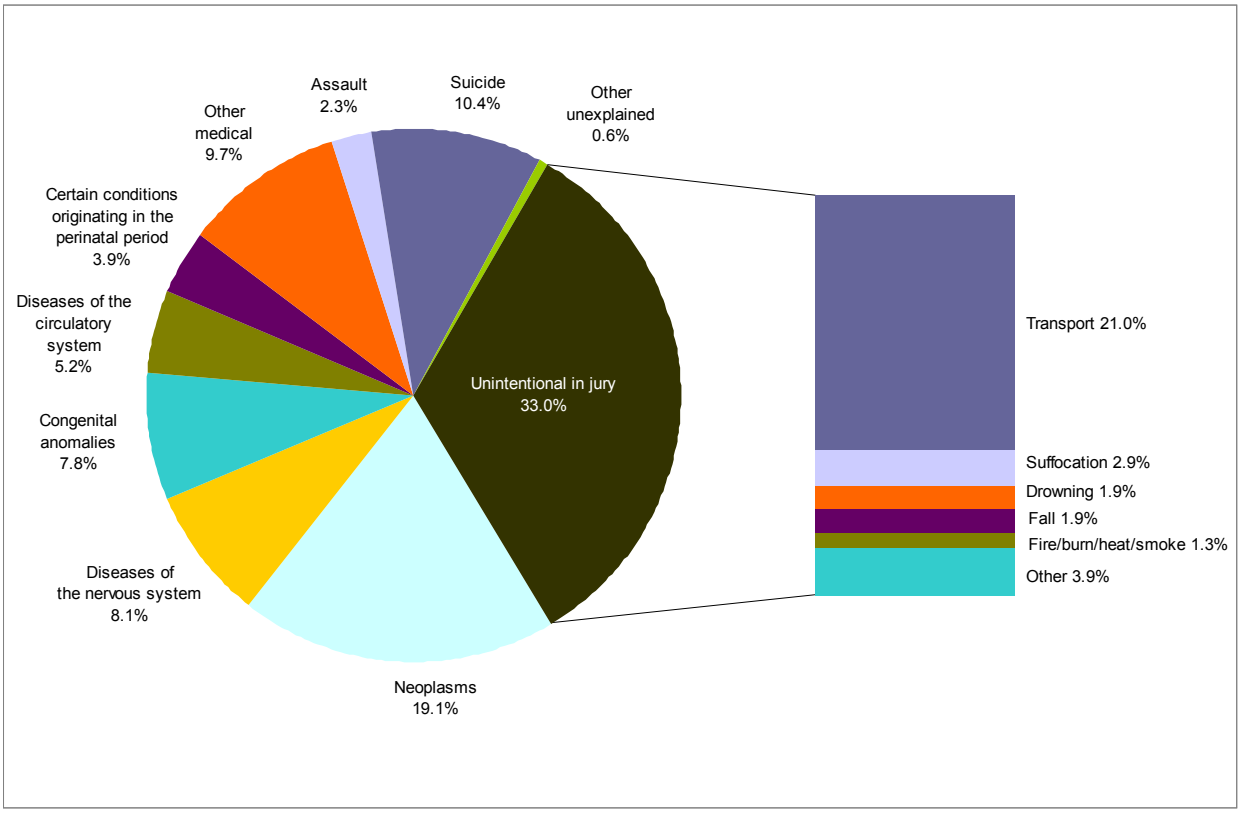
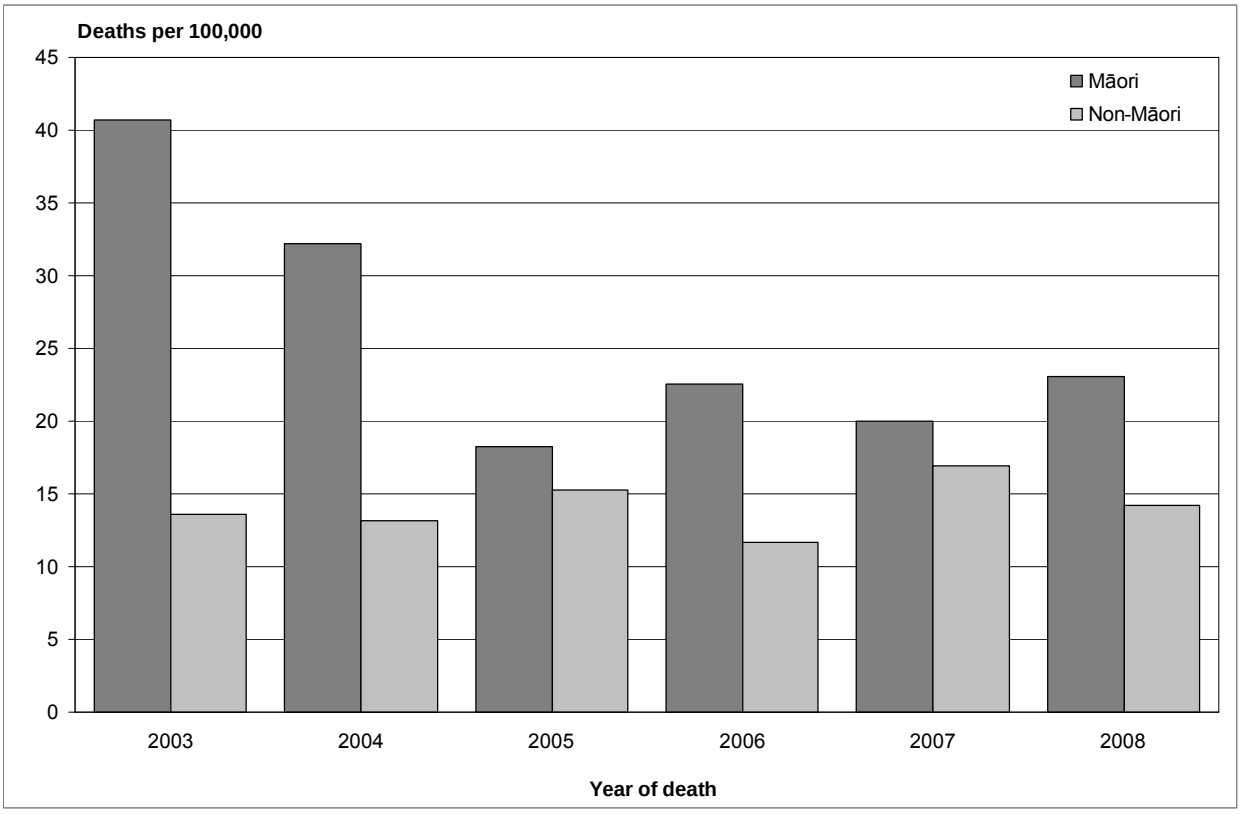


Table F.1: Mortality in children aged 10–14 years (number of deaths and age-specific rate per 100,000), by cause, 2003–2008

	Deaths								Avg rate*
	2003	2004	2005	2006	2007	2008	Total	%	
Medical									
Infectious and parasitic disease	3	1	3	1	-	-	8	2.59	0.51
Neoplasms	9	13	4	9	12	12	59	19.09	3.02
Diseases of the blood and blood-forming organs and disorders of immune system	-	-	-	-	1	-	1	0.32	0.07
Endocrine, nutritional and metabolic diseases	1	2	-	2	2	-	7	2.27	0.45
Mental and behavioural disorders	-	-	-	-	-	1	1	0.32	-
Diseases of nervous system	7	5	5	2	2	4	25	8.09	1.34
Diseases of circulatory system	2	4	1	3	4	2	16	5.18	0.90
Diseases of respiratory system	2	1	1	2	1	-	7	2.27	0.45
Diseases of digestive system	-	1	-	-	1	-	2	0.65	0.13
Diseases of genitourinary system	1	-	-	-	-	-	1	0.32	0.06
Certain conditions originating in the perinatal period	5	1	4	-	2	-	12	3.88	0.77
Congenital anomalies	5	1	8	2	5	3	24	7.77	1.35
Symptoms & abnormal findings not elsewhere classified	-	-	-	-	-	1	1	0.32	-
Unknown	-	-	-	-	-	2	2	0.65	-
Total medical	**35**	**29**	**26**	**21**	**30**	**25**	**166**	**53.72**	**9.05**
Unintentional injury									
Adverse effect of medication or treatment	-	-	-	-	-	1	1	0.32	-
Drowning	3	2	1	-	-	-	6	1.94	0.38
Fall	2	-	2	-	1	1	6	1.94	0.32
Fire/burn/heat/smoke	1	-	1	2	-	-	4	1.29	0.26
Machinery	-	-	-	1	-	-	1	0.32	0.06
Transport	12	6	12	9	13	13	65	21.04	3.34
Natural/environmental/animal	-	1	-	2	-	-	3	0.97	0.19
Poisoning	1	1	-	-	2	1	5	1.62	0.26
Struck by, against	-	-	2	-	-	-	2	0.65	0.13
Suffocation	1	1	2	1	2	2	9	2.91	0.45
Total unintentional injury	**20**	**11**	**20**	**15**	**18**	**18**	**102**	**33.01**	**5.39**
Intentional injury									
Assault	-	3	1	1	1	1	7	2.27	0.38
Suicide	6	10	3	6	3	4	32	10.36	1.79
Total intentional injury	**6**	**13**	**4**	**7**	**4**	**5**	**39**	**12.62**	**2.18**
Unexplained									
Other	-	-	-	-	1	1	2	0.65	0.07
Total unexplained	**-**	**-**	**-**	**-**	**1**	**1**	**2**	**0.65**	**0.07**
Total	**61**	**53**	**50**	**43**	**53**	**49**	**309**	**100.00**	**16.68**

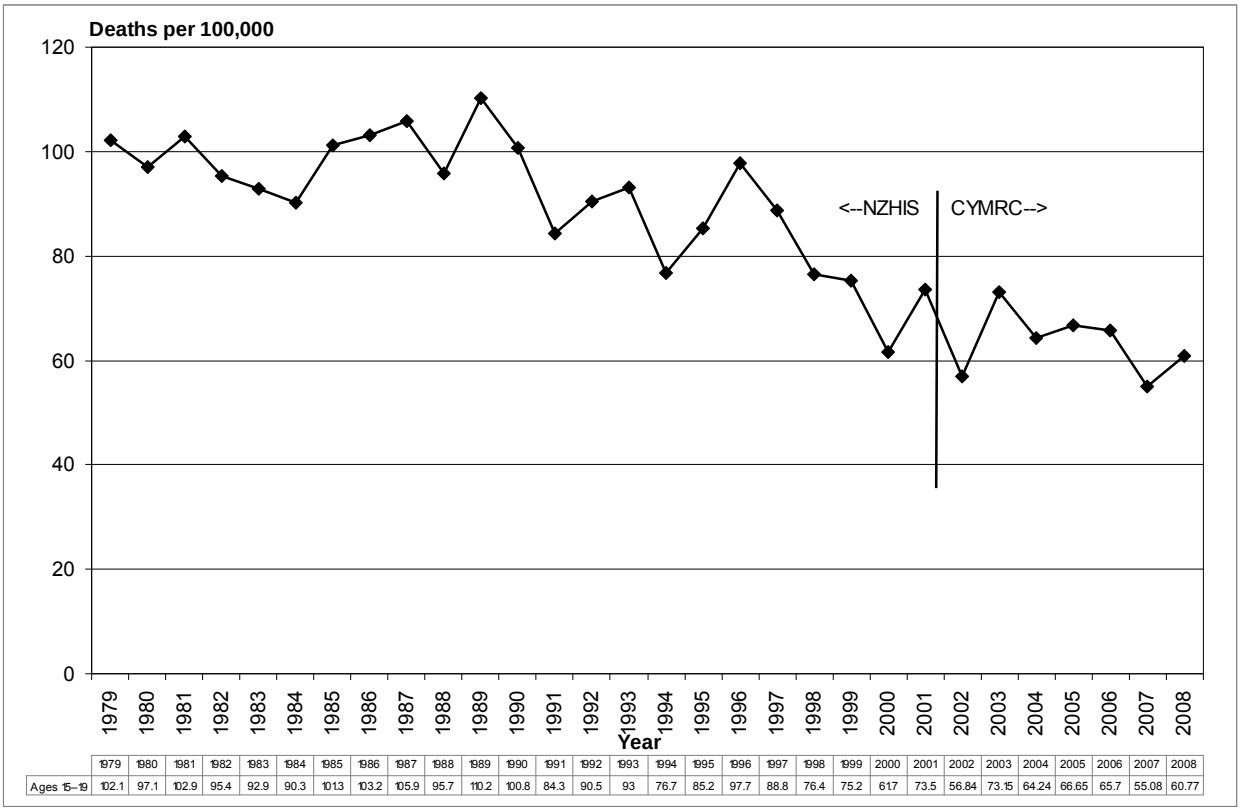
* Average rate per 100,000 is calculated using 2003–2007 data and excludes 2008 owing to the number of cases where cause of death is unknown or where cases are awaiting coronial cause of death.

Figure F.3: Mortality (age-specific rate per 100,000) in Māori and non-Māori children aged 10–14 years, 2003–2008



Appendix G: Youth Mortality (15–19 years old)

Figure G.1: Mortality (age-specific rate per 100,000) in youth aged 15–19 years, 1979–2008



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Ages 15–19	102.1	97.1	102.9	95.4	92.9	90.3	101.3	103.2	105.9	95.7	110.2	100.8	84.3	90.5	93	76.7	85.2	97.7	88.8	76.4	75.2	61.7	73.5	56.84	73.15	64.24	66.65	65.7	55.08	60.77

Figure G.2: Cause of mortality in youth aged 15–19 years (%), by category of death, 2003–2008 combined (1191 deaths)

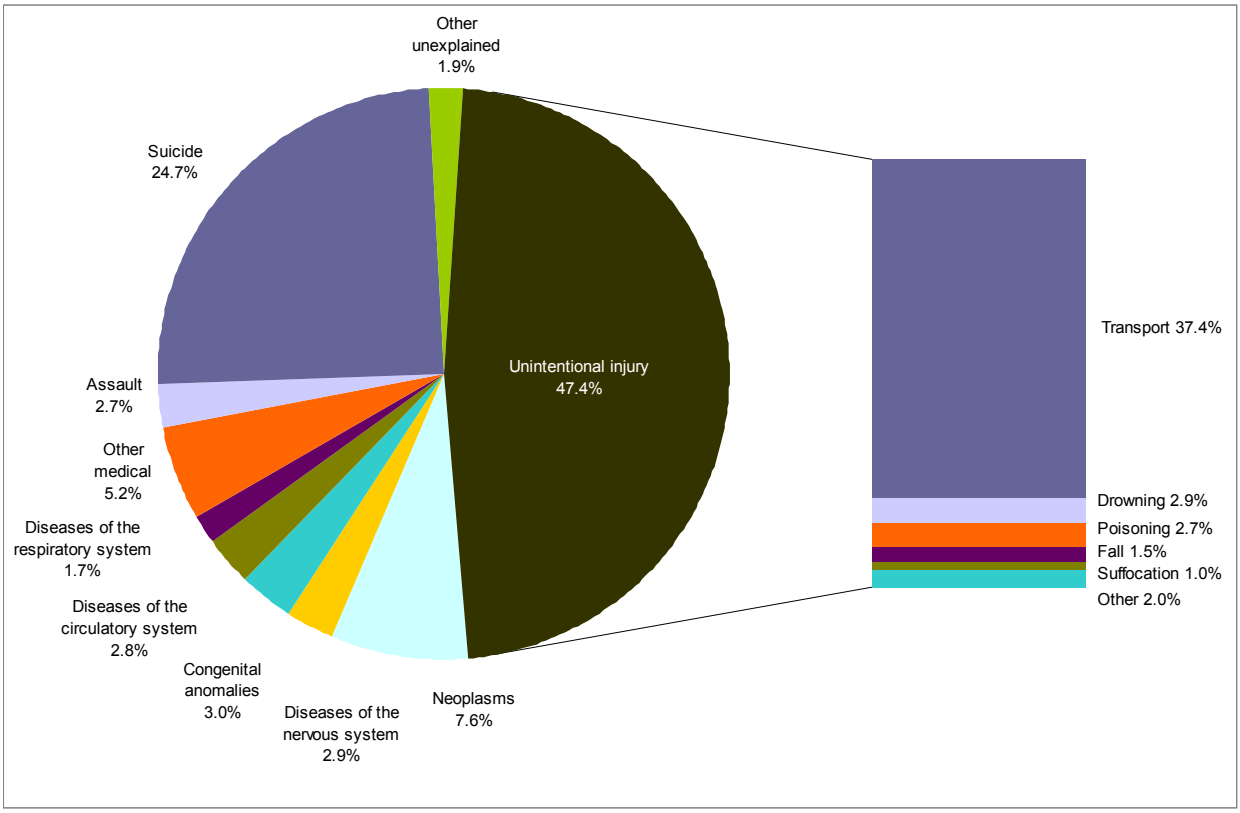
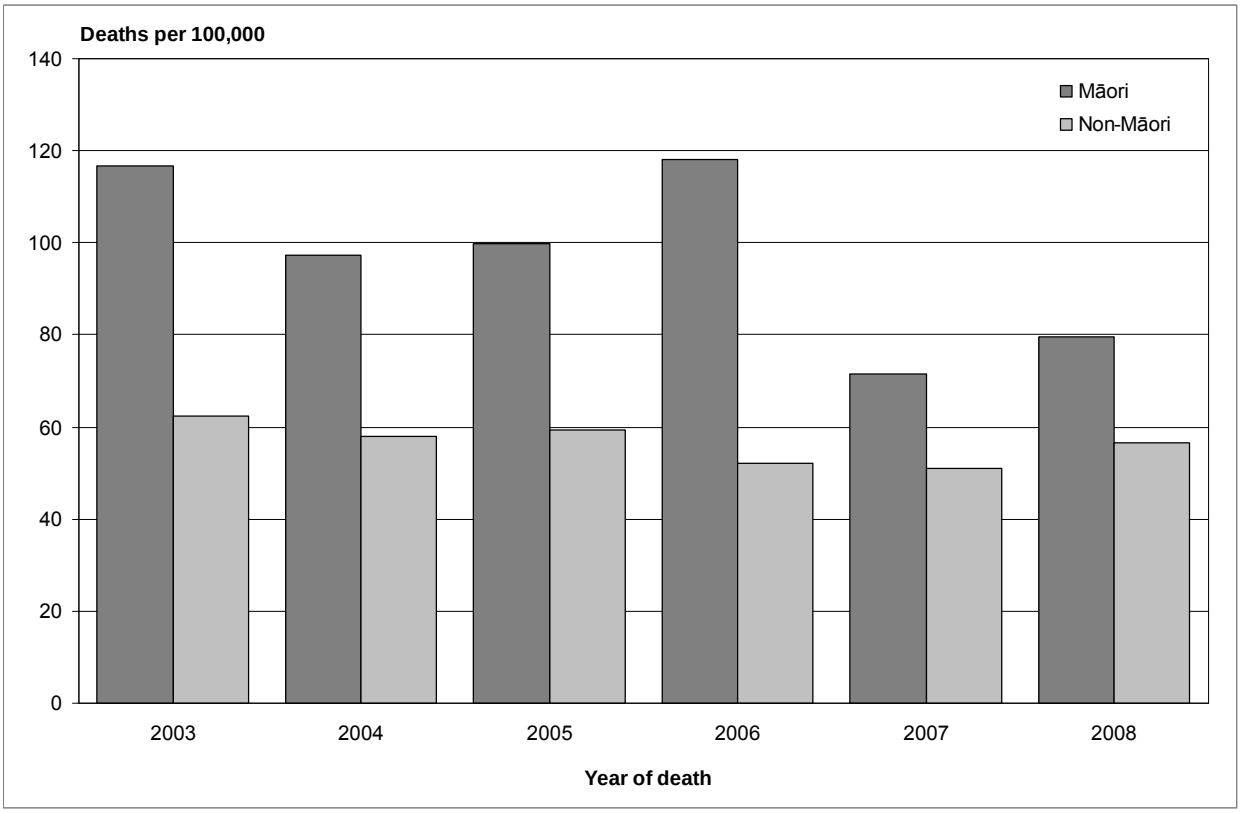


Table G.1: Mortality in children aged 15–19 years (number of deaths and age-specific rate per 100,000), by cause, 2003–2008

	Deaths								Avg rate*
	2003	2004	2005	2006	2007	2008	Total	%	
Medical									
Infectious and parasitic disease	7	1	4	2	-	-	14	1.18	0.93
Neoplasms	17	11	19	17	19	8	91	7.64	5.40
Diseases of the blood and blood-forming organs and disorders of immune system	1	-	-	-	-	-	1	0.08	0.07
Endocrine, nutritional and metabolic diseases	-	1	-	1	3	2	7	0.59	0.32
Diseases of nervous system	5	7	7	9	5	2	35	2.94	2.15
Diseases of circulatory system	5	8	5	6	2	7	33	2.77	1.71
Diseases of respiratory system	3	6	4	4	2	1	20	1.68	1.24
Diseases of digestive system	2	-	-	-	-	-	2	0.17	0.14
Diseases of skin and subcutaneous tissue	-	-	-	-	-	1	1	0.08	-
Diseases of musculoskeletal system and connective tissue	-	-	-	1	-	-	1	0.08	0.06
Diseases of genitourinary system	3	-	-	-	1	1	5	0.42	0.27
Certain conditions originating in the perinatal period	1	1	3	3	4	-	12	1.01	0.77
Congenital anomalies	8	5	4	8	7	4	36	3.02	2.08
Symptoms & abnormal findings not elsewhere classified	-	1	-	-	1	1	3	0.25	0.13
Unknown	-	-	-	-	-	16	16	1.34	-
Total medical	**52**	**41**	**46**	**51**	**44**	**43**	**277**	**23.26**	**15.26**
Unintentional injury									
Cut/pierce	1	-	-	1	1	-	3	0.25	0.19
Drowning	5	4	7	5	3	10	34	2.85	1.57
Fall	2	5	1	4	3	3	18	1.51	0.98
Fire/burn/heat/smoke	1	1	-	4	1	-	7	0.59	0.45
Firearm	1	-	-	-	-	2	3	0.25	0.07
Transport	79	84	87	61	73	61	445	37.36	25.09
Natural/environmental/animal	-	-	1	1	-	-	2	0.17	0.13
Poisoning	10	4	6	4	4	4	32	2.69	1.84
Struck by, against	3	-	1	-	-	3	7	0.59	0.27
Suffocation	4	1	2	1	2	2	12	1.01	0.66
Electrocution	-	1	-	-	-	1	2	0.17	0.07
Total unintentional injury	**106**	**100**	**105**	**81**	**87**	**86**	**565**	**47.44**	**31.31**
Intentional injury									
Assault	7	4	5	10	1	5	32	2.69	1.77
Suicide	51	48	48	62	43	42	294	24.69	16.43
Total intentional injury	**58**	**52**	**53**	**72**	**44**	**47**	**326**	**27.37**	**18.20**
Unexplained									
Awaiting coroner	-	-	-	1	-	20	21	1.76	0.06
Other	-	-	-	1	1	-	2	0.17	0.13
Total unexplained	**-**	**-**	**-**	**2**	**1**	**20**	**23**	**1.93**	**0.19**
Total	**216**	**193**	**204**	**206**	**176**	**196**	**1191**	**100.00**	**64.96**

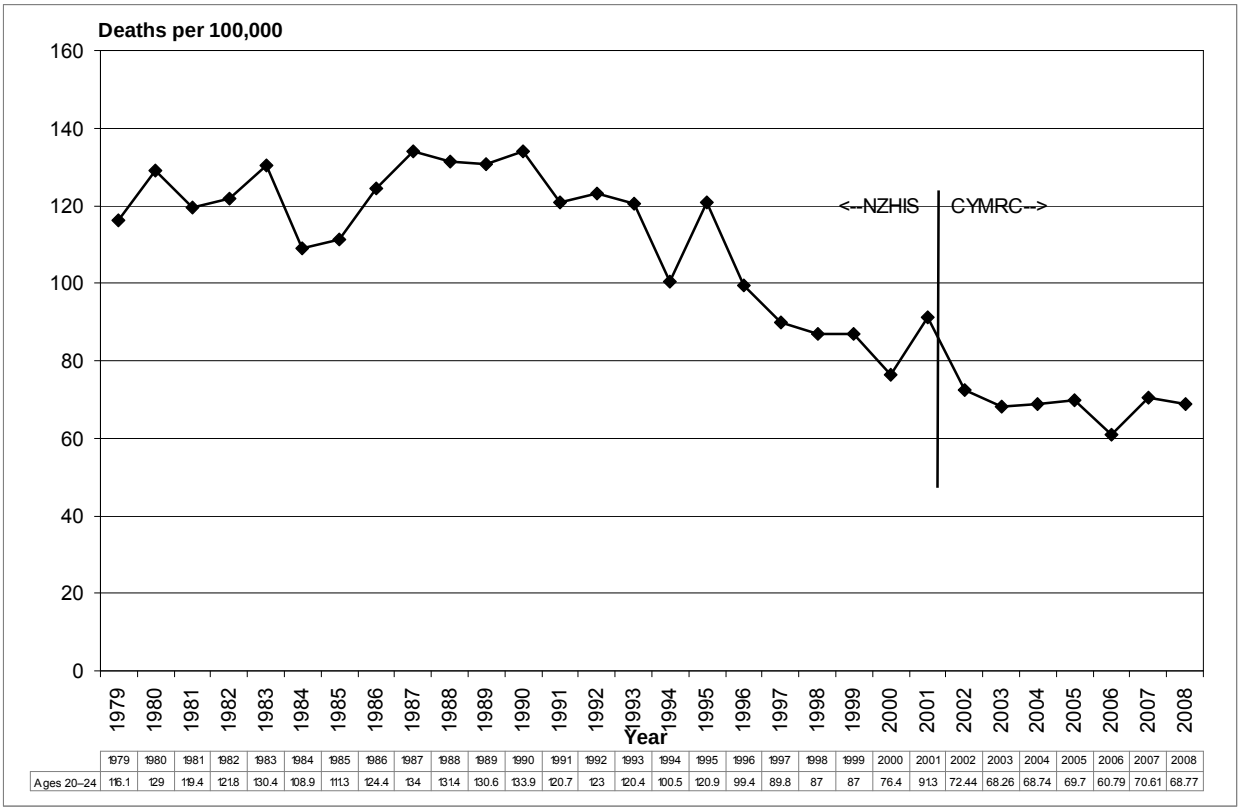
* Average rate per 100,000 is calculated using 2003–2007 data and excludes 2008 owing to the number of cases where cause of death is unknown or where cases are awaiting coronial cause of death.

Figure G.3: Mortality (age-specific rate per 100,000) in Māori and non-Māori youth aged 15–19 years, 2003–2008



Appendix H: Youth Mortality (20–24 years old)

Figure H.1: Mortality (age-specific rate per 100,000) in 20–24-year-olds, 1979–2008



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Ages 20–24	116.1	129	119.4	121.8	130.4	108.9	111.3	124.4	134	131.4	130.6	133.9	120.7	123	120.4	100.5	120.9	99.4	89.8	87	87	76.4	91.3	72.44	68.26	68.74	69.7	60.79	70.61	68.77

Figure H.2: Cause of mortality in 20–24-year-olds (%), by category of death, 2003–2008 combined (1175 deaths)

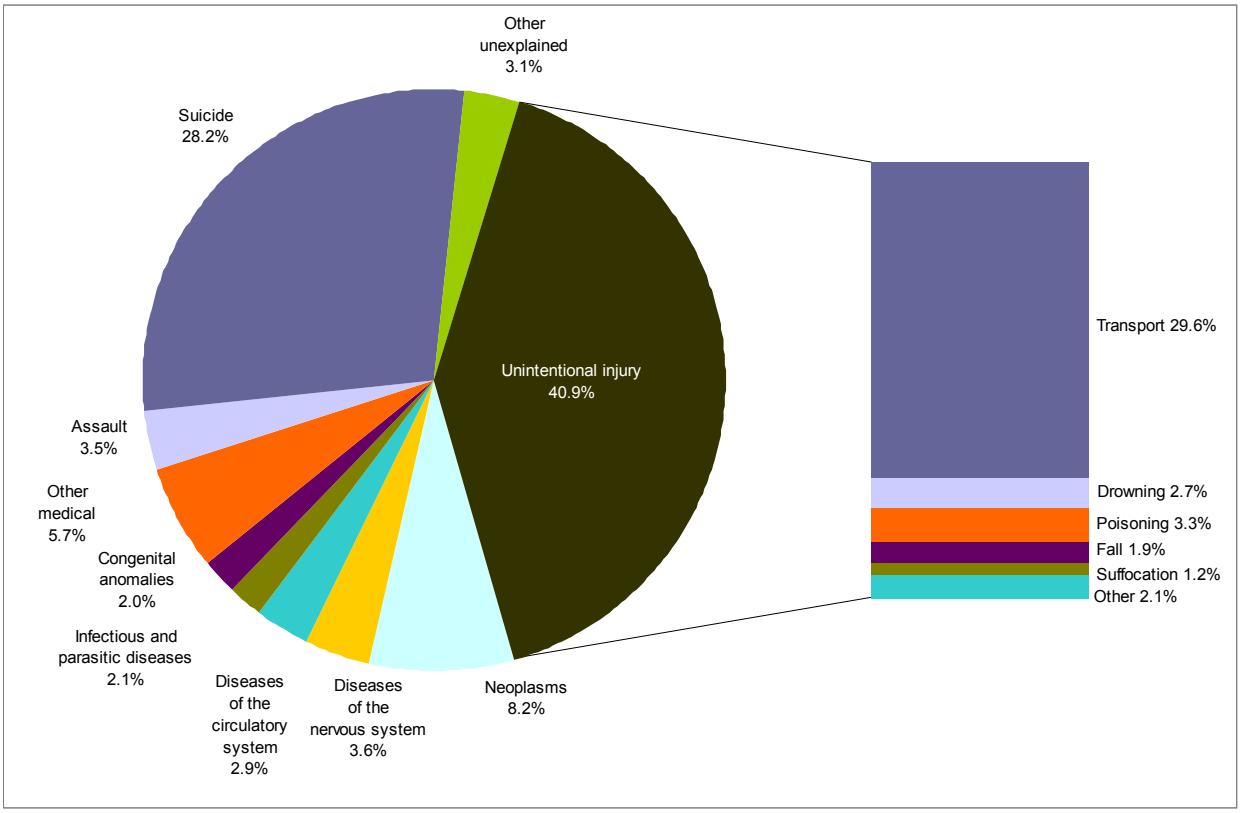
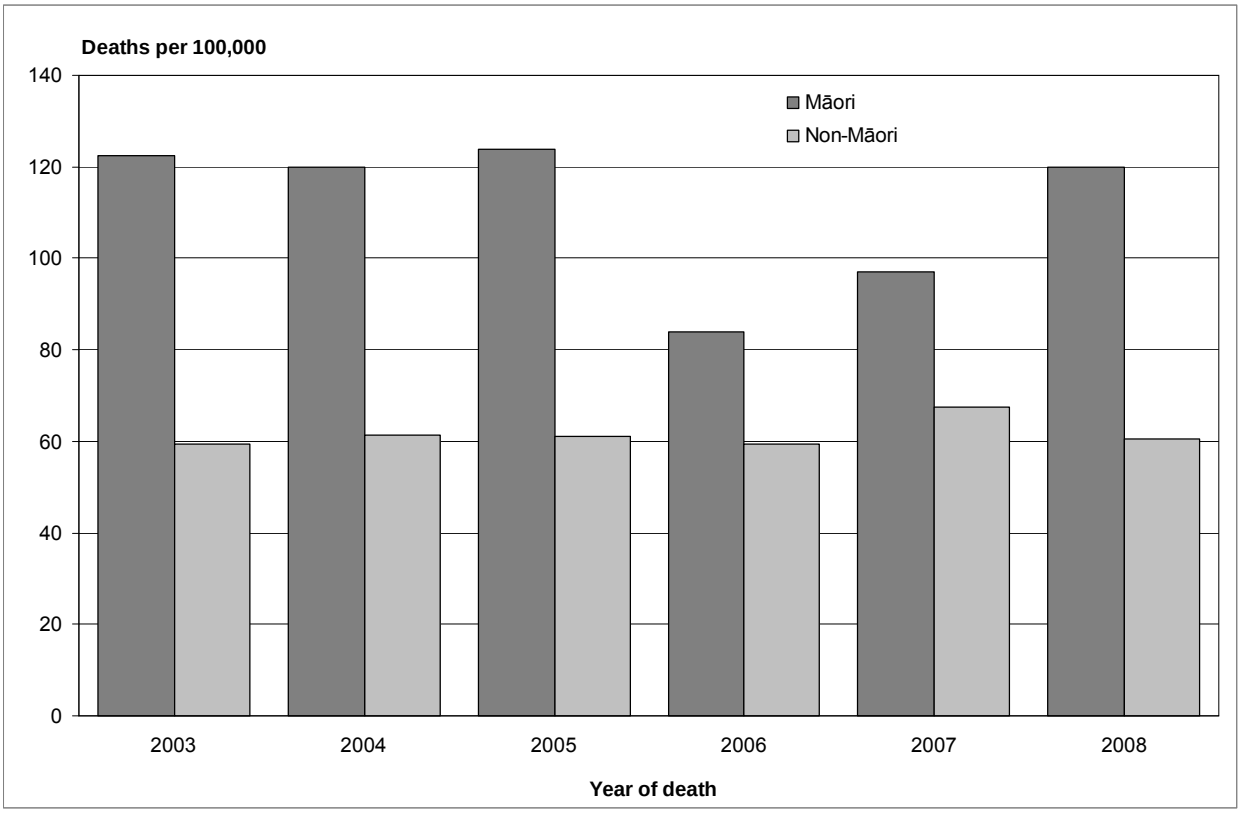


Table H.1: Mortality in children aged 20–24 years (number of deaths and age-specific rate per 100,000), by cause, 2003–2008

	Deaths								Avg rate*
	2003	2004	2005	2006	2007	2008	Total	%	
Medical									
Infectious and parasitic disease	5	5	5	7	3	-	25	2.13	1.74
Neoplasms	16	13	21	19	16	11	96	8.17	5.91
Diseases of the blood and blood-forming organs and disorders of immune system	-	1	2	-	1	-	4	0.34	0.28
Endocrine, nutritional and metabolic diseases	-	1	3	1	-	2	7	0.60	0.35
Mental and behavioural disorders	-	-	1	-	-	-	1	0.09	0.07
Diseases of nervous system	7	9	8	6	8	4	42	3.57	2.65
Diseases of circulatory system	8	6	7	8	3	2	34	2.89	2.24
Diseases of respiratory system	3	6	3	5	4	1	22	1.87	1.46
Diseases of digestive system	-	-	-	-	1	-	1	0.09	0.07
Diseases of musculoskeletal system and connective tissue	-	-	-	2	1	1	4	0.34	0.21
Diseases of genitourinary system	1	-	1	-	1	1	4	0.34	0.21
Certain conditions originating in the perinatal period	2	-	-	-	2	-	4	0.34	0.28
Congenital anomalies	2	2	6	2	10	1	23	1.96	1.52
Symptoms & abnormal findings not elsewhere classified	1	-	-	2	1	4	8	0.68	0.28
Unknown	-	-	-	-	-	12	12	1.02	-
Total medical	**45**	**43**	**57**	**52**	**51**	**39**	**287**	**24.43**	**17.25**
Unintentional injury									
Adverse effect of medication or treatment	-	1	1	-	-	-	2	0.17	0.14
Cut/pierce	-	1	1	2	-	-	4	0.34	0.28
Drowning	6	9	5	2	8	2	32	2.72	2.09
Fall	3	8	4	1	2	4	22	1.87	1.26
Fire/burn/heat/smoke	-	1	1	-	-	3	5	0.43	0.14
Firearm	1	-	-	-	-	-	1	0.09	0.07
Machinery	-	1	1	-	-	1	3	0.26	0.14
Transport	63	54	52	46	70	63	348	29.62	19.86
Natural/environmental/animal	1	-	-	-	1	-	2	0.17	0.14
Overexertion/travel/privation	-	-	-	-	1	-	1	0.09	0.07
Poisoning	10	7	5	7	5	5	39	3.32	2.38
Struck by, against	1	-	1	-	1	1	4	0.34	0.21
Suffocation	1	2	4	1	4	2	14	1.19	0.83
Electrocution	1	1	-	-	1	-	3	0.26	0.21
Total unintentional injury	**87**	**85**	**75**	**59**	**93**	**81**	**480**	**40.85**	**27.81**
Intentional injury									
Assault	11	3	8	5	9	5	41	3.49	2.51
Suicide	47	64	59	60	50	51	331	28.17	19.49
Total intentional injury	**58**	**67**	**67**	**65**	**59**	**56**	**372**	**31.66**	**22.00**
Unexplained									
Awaiting coroner	-	-	1	-	2	28	31	2.64	0.21
Other	-	1	1	1	2	-	5	0.43	0.34
Total unexplained	**-**	**1**	**2**	**1**	**4**	**28**	**36**	**3.06**	**0.55**
Total	**190**	**196**	**201**	**177**	**207**	**204**	**1175**	**100.00**	**67.62**

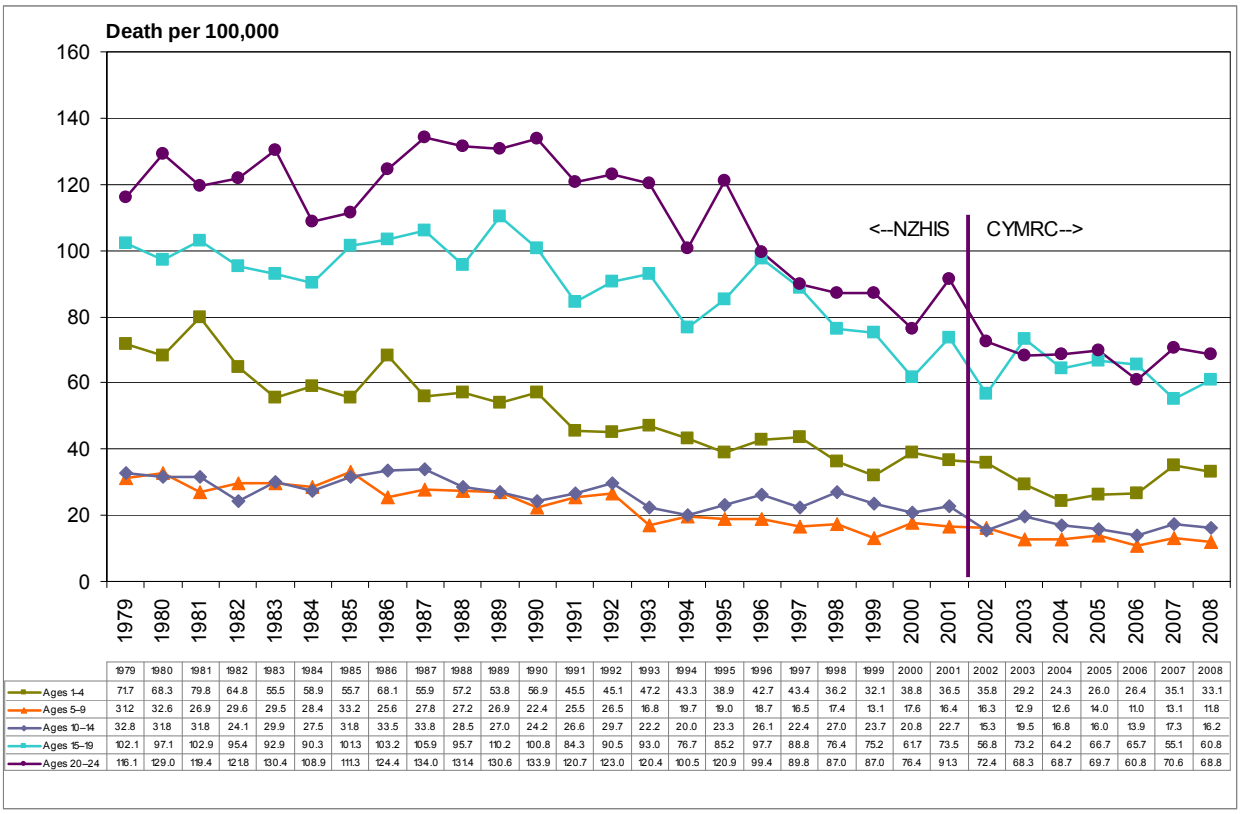
* Average rate per 100,000 is calculated using 2003–2007 data and excludes 2008 owing to the number of cases where cause of death is unknown or where cases are awaiting coronial cause of death.

Figure H.3: Mortality (age-specific rate per 100,000) in Māori and non-Māori aged 20–24 years, 2003–2008



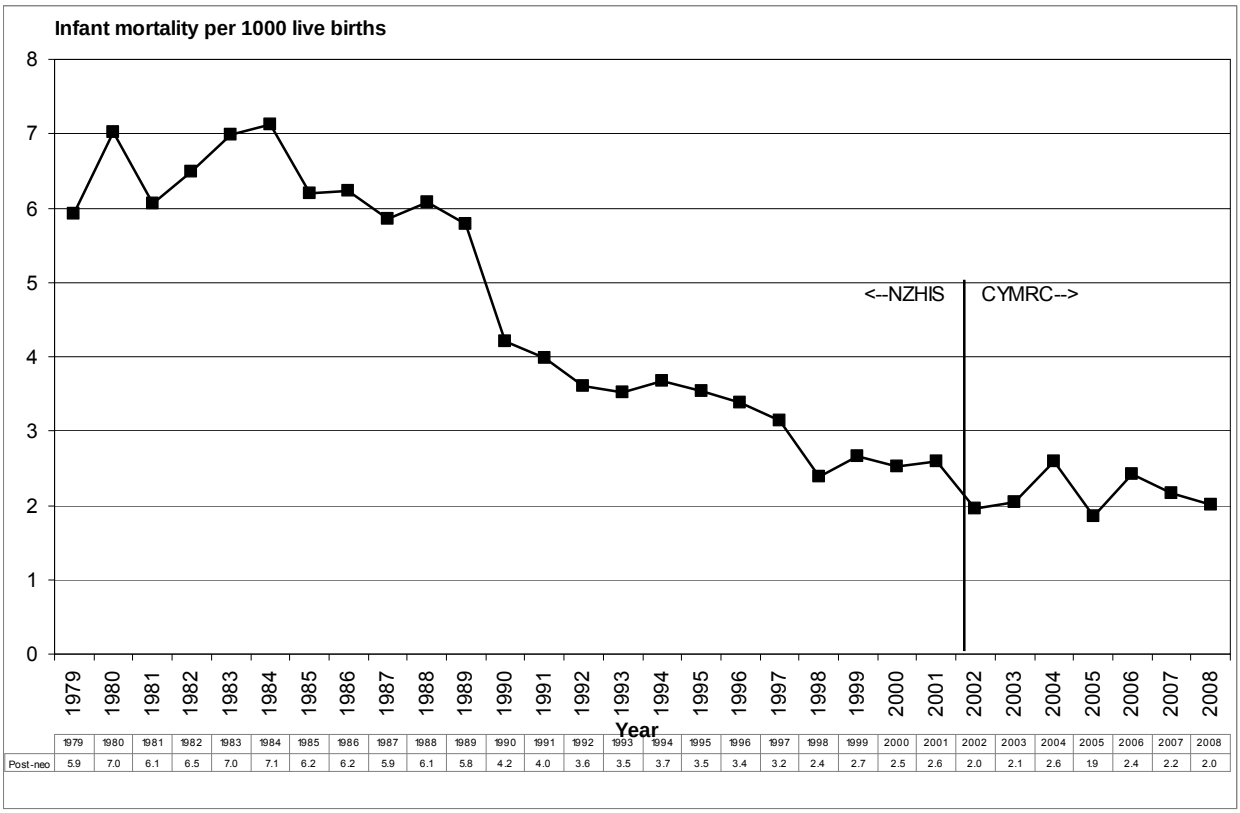
Appendix I: Infant, Child and Youth Mortality (28 days to 24 years old)

Figure I.1: Mortality (age-specific rates per 100,000), by age group (excluding post-neonatal mortality), 1979–2008



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Ages 1–4	71.7	68.3	79.8	64.8	55.5	58.9	55.7	68.1	55.9	57.2	53.8	56.9	45.5	45.1	47.2	43.3	38.9	42.7	43.4	36.2	32.1	38.8	36.5	35.8	29.2	24.3	26.0	26.4	35.1	33.1
Ages 5–9	31.2	32.6	26.9	29.6	29.5	28.4	33.2	25.6	27.8	27.2	26.9	22.4	25.5	26.5	16.8	19.7	19.0	18.7	16.5	17.4	13.1	17.6	16.4	16.3	12.9	12.6	14.0	11.0	13.1	11.8
Ages 10–14	32.8	31.8	31.8	24.1	29.9	27.5	31.8	33.5	33.8	28.5	27.0	24.2	26.6	29.7	22.2	20.0	23.3	26.1	22.4	27.0	23.7	20.8	22.7	15.3	19.5	16.8	16.0	13.9	17.3	16.2
Ages 15–19	102.1	97.1	102.9	95.4	92.9	90.3	101.3	103.2	105.9	95.7	110.2	100.8	84.3	90.5	93.0	76.7	85.2	97.7	88.8	76.4	75.2	61.7	73.5	56.8	73.2	64.2	66.7	65.7	55.1	60.8
Ages 20–24	116.1	129.0	119.4	121.8	130.4	108.9	111.3	124.4	134.0	131.4	130.6	133.9	120.7	123.0	120.4	100.5	120.9	99.4	89.8	87.0	87.0	76.4	91.3	72.4	68.3	68.7	69.7	60.8	70.6	68.8

Figure I.2: Post-neonatal mortality rate (per 1000 live births), 1979–2008



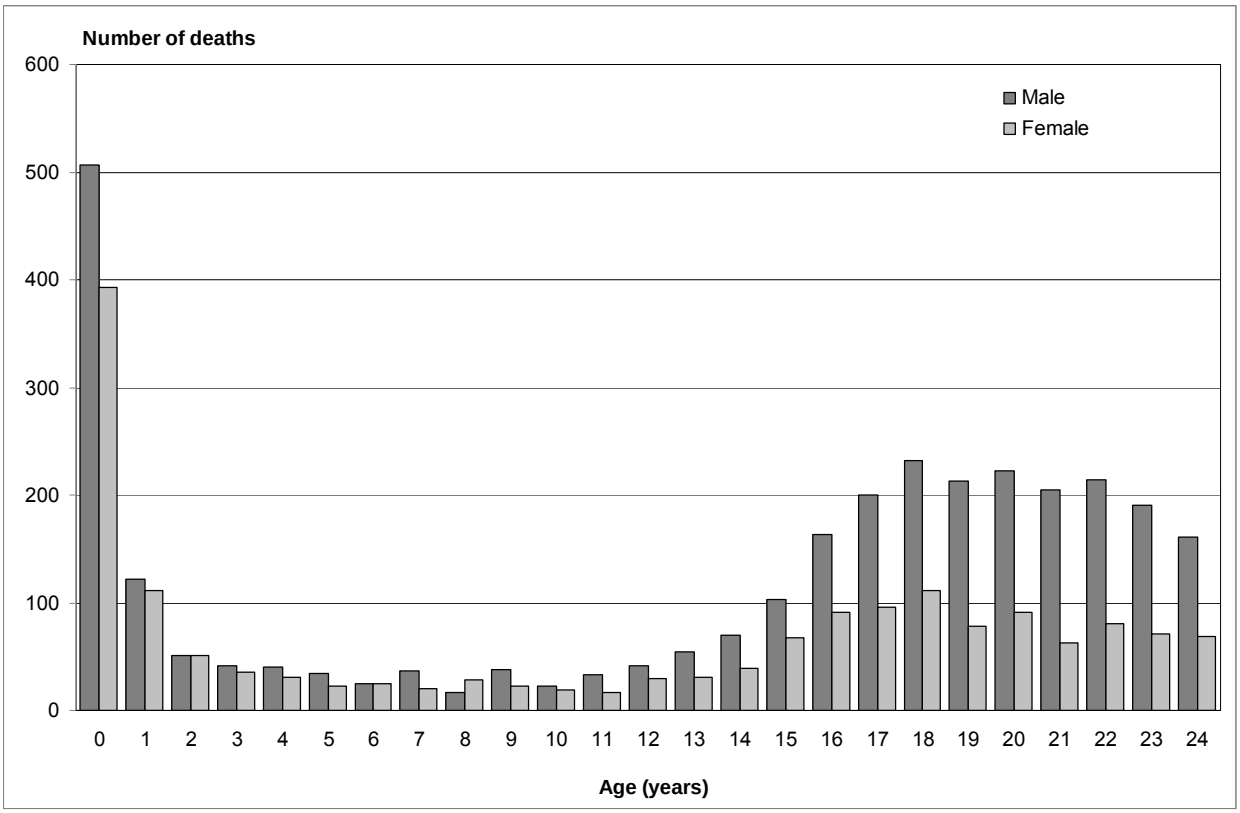
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Post-neo	5.9	7.0	6.1	6.5	7.0	7.1	6.2	6.2	5.9	6.1	5.8	4.2	4.0	3.6	3.5	3.7	3.5	3.4	3.2	2.4	2.7	2.5	2.6	2.0	2.1	2.6	1.9	2.4	2.2	2.0

Table I.1: Mortality (number of deaths), by age group, 1979–2008

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	55	37	53	193	196	686
2005	109	59	41	50	204	201	664
2006	146	60	32	43	206	177	664
2007	141	81	38	53	176	207	696
2008	131	78	34	49	196	204	692

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

Figure I.3: Number of deaths, by gender and age, 2002–2008 combined



Note: The deaths in the 0 age group do not include any deaths in the first 28 days of life, which are reported by the PMMRC.

Table I.2: Mortality (number of deaths), by age group and cause, 2003–2008 combined

	< 1 year *	1–4 years	5–9 years	10–14 years	15–19 years	20–24 years	Total	%	% of all deaths
Medical									
Infectious and parasitic disease	56	41	13	8	14	25	157	10.9	3.8
Neoplasms	12	39	41	59	91	96	338	23.5	8.3
Diseases of the blood and blood-forming organs and disorders of immune system	1	3	1	1	1	4	11	0.8	0.3
Endocrine, nutritional and metabolic diseases	10	18	4	7	7	7	53	3.7	1.3
Mental and behavioural disorders	-	-	-	1	-	1	2	0.1	0.0
Diseases of nervous system	23	21	19	25	35	42	165	11.5	4.0
Diseases of eye and adnexa	-	-	-	-	-	-	-	0.0	0.0
Diseases of ear and mastoid process	-	-	-	-	-	-	-	0.0	0.0
Diseases of circulatory system	21	16	8	16	33	34	128	8.9	3.1
Diseases of respiratory system	12	11	8	7	20	22	80	5.6	2.0
Diseases of digestive system	10	6	1	2	2	1	22	1.5	0.5
Diseases of skin and subcutaneous tissue	-	-	-	-	1	-	1	0.1	0.0
Diseases of musculoskeletal system and	-	-	1	-	1	4	6	0.4	0.1
Diseases of genitourinary system	3	-	1	1	5	4	14	1.0	0.3
Pregnancy, childbirth and the puerperium	-	-	-	-	-	-	-	0.0	0.0
Certain conditions originating in the perinatal	73	13	10	12	12	4	124	8.6	3.0
Congenital anomalies	123	49	14	24	36	23	269	18.7	6.6
Symptoms & abnormal findings not elsewhere classified	11	5	2	1	3	8	30	2.1	0.7
Unknown	6	1	1	2	16	12	38	2.6	0.9
Total medical	**361**	**223**	**124**	**166**	**277**	**287**	**1438**	**100.0**	**35.2**
Unintentional									
External cause unknown	-	-	-	-	-	-	-	0.0	0.0
Adverse effect of medication or treatment	2	1	-	1	-	2	6	0.4	0.1
Health system error	-	-	-	-	-	-	-	0.0	0.0
Cut/pierce	-	-	-	-	3	4	7	0.5	0.2
Drowning	7	34	17	6	34	32	130	9.2	3.2
Fall	-	8	-	6	18	22	54	3.8	1.3
Fire/burn/heat/smoke	1	9	9	4	7	5	35	2.5	0.9
Firearm	-	1	-	-	3	1	5	0.4	0.1
Machinery	-	1	-	1	-	3	5	0.4	0.1
Transport	10	58	52	65	445	348	978	69.3	23.9
Natural/environmental/animal	-	1	1	3	2	2	9	0.6	0.2
Overexertion/travel/privation	-	-	-	-	-	1	1	0.1	0.0
Poisoning	-	1	1	5	32	39	78	5.5	1.9
Struck by, against	2	5	3	2	7	4	23	1.6	0.6
Suffocation	14	21	5	9	12	14	75	5.3	1.8
Electrocution	-	-	1	-	2	3	6	0.4	0.1
Total unintentional	**36**	**140**	**89**	**102**	**565**	**480**	**1412**	**100.0**	**34.5**
Intentional									
Assault	11	12	6	7	32	41	109	14.2	2.7
Suicide	-	-	1	32	294	331	658	85.8	16.1
Total intentional	**11**	**12**	**7**	**39**	**326**	**372**	**767**	**100.0**	**18.8**
Unexplained									
SUDI	377	20	-	-	-	-	397	84.1	9.7
Awaiting coroner	9	1	-	-	21	31	62	13.1	1.5
Other	1	3	-	2	2	5	13	2.8	0.3
Total unexplained	**387**	**24**	**-**	**2**	**23**	**36**	**472**	**100.0**	**11.5**
Total	**795**	**399**	**220**	**309**	**1191**	**1175**	**4089**		**100.0**

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

Table I.3: Mortality (number of deaths), by gender and cause, 2003–2008 combined

	Female	Male	Total
Medical			
Infectious and parasitic disease	69	88	157
Neoplasms	157	181	338
Diseases of the blood and blood-forming organs and disorders of immune system	4	7	11
Endocrine, nutritional and metabolic diseases	22	31	53
Mental and behavioural disorders	-	2	2
Diseases of nervous system	67	98	165
Diseases of eye and adnexa	-	-	-
Diseases of ear and mastoid process	-	-	-
Diseases of circulatory system	46	82	128
Diseases of respiratory system	37	43	80
Diseases of digestive system	10	12	22
Diseases of skin and subcutaneous tissue	-	1	1
Diseases of musculoskeletal system and connective tissue	3	3	6
Diseases of genitourinary system	7	7	14
Pregnancy, childbirth and the puerperium	-	-	-
Certain conditions originating in the perinatal period	54	70	124
Congenital anomalies	123	146	269
Symptoms & abnormal findings not elsewhere classified	13	17	30
Unknown	16	22	38
Total medical	**628**	**810**	**1438**
	43.7%	**56.3%**	
Unintentional injury			
External cause unknown	-	-	-
Adverse effect of medication or treatment	1	5	6
Health system error	-	-	-
Cut/pierce	1	6	7
Drowning	38	92	130
Fall	10	44	54
Fire/burn/heat/smoke	12	23	35
Firearm	1	4	5
Machinery	-	5	5
Transport	289	689	978
Natural/environmental/animal	3	6	9
Overexertion/travel/privation	-	1	1
Poisoning	25	53	78
Struck by, against	8	15	23
Suffocation	22	53	75
Electrocution	1	5	6
Total unintentional injury	**411**	**1001**	**1412**
	29.1%	**70.9%**	
Intentional			
Assault	46	63	109
Suicide	176	482	658
Total intentional injury	**222**	**545**	**767**
	28.9%	**71.1%**	
Unexplained			
SUDI	171	226	397
Awaiting coroner	21	41	62
Other	6	7	13
Total unexplained	**198**	**274**	**472**
Total	**1459**	**2630**	**4089**
	35.7%	**64.3%**	

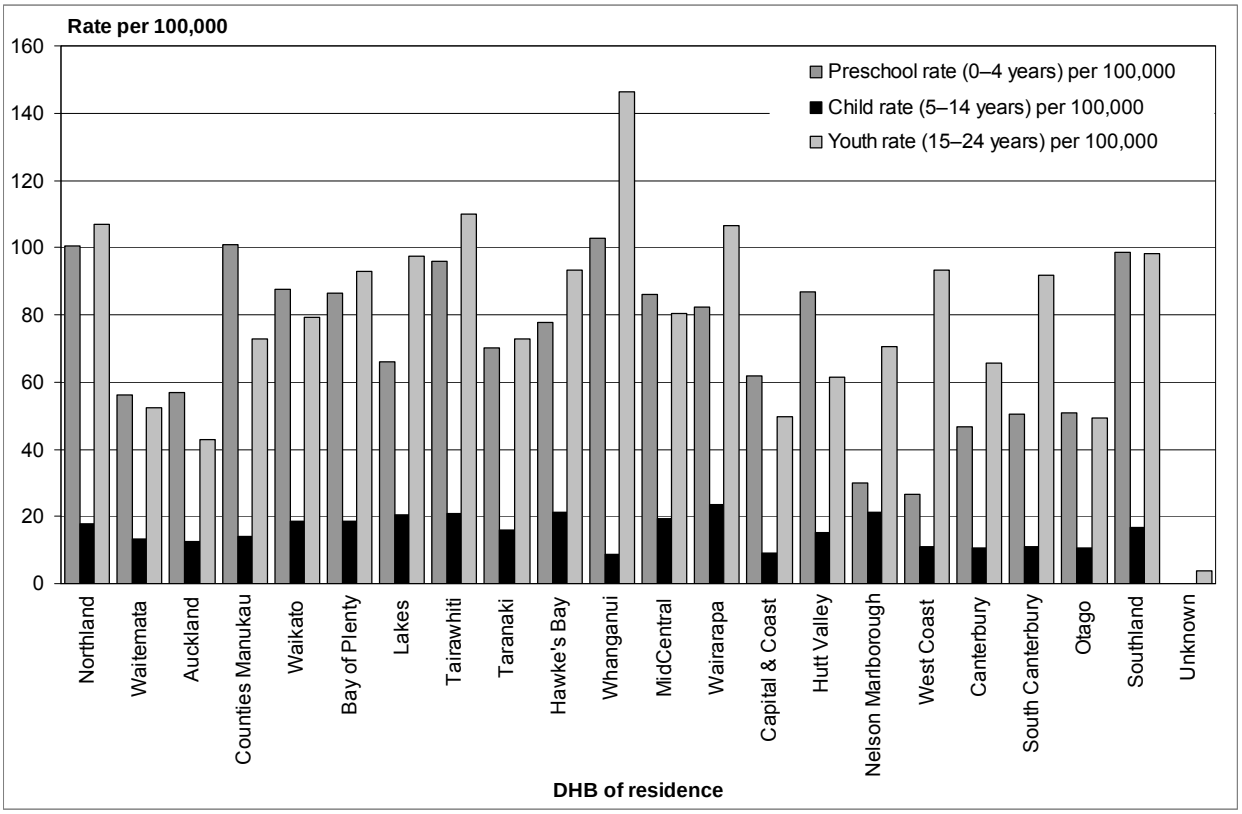
Appendix J: Mortality and DHB

Table J.1: Mortality (numbers and age-specific rates), by age group and DHB of residence, 2003–2008 combined

DHB	< 1 year *	1–4 years	Preschool rate (0–4 years) per 100,000	5–9 years	10–14 years	Child rate (5–14 years) per 100,000	15–19 years	20–24 years	Youth rate (15–24 years) per 100,000	Total	%	Outside DHB	Inside DHB	% resident deaths outside DHB
Northland	40	22	100.6	13	13	18	59	51	107	198	4.8	29	169	14.6
Waitemata	72	39	56.2	30	27	13	95	117	52	380	9.3	144	236	37.9
Auckland	66	23	56.9	18	19	12	68	105	43	299	7.3	50	249	16.7
Counties Manukau	158	61	100.7	29	34	14	142	142	73	566	13.8	135	431	23.9
Waikato	81	47	87.5	23	36	19	117	116	79	420	10.3	54	366	12.9
Bay of Plenty	38	31	86.3	15	19	19	68	58	93	229	5.6	68	161	29.7
Lakes	24	6	66.1	9	11	20	38	35	98	123	3.0	29	94	23.6
Tairawhiti	15	6	95.9	2	8	21	21	17	110	69	1.7	9	60	13.0
Taranaki	25	4	70.3	6	9	16	31	26	73	101	2.5	12	89	11.9
Hawke's Bay	30	19	77.9	14	16	21	61	41	93	181	4.4	15	166	8.3
Whanganui	17	8	102.7	1	4	9	37	32	146	99	2.4	27	72	27.3
MidCentral	33	21	86.0	13	14	19	68	48	80	197	4.8	34	163	17.3
Wairarapa	8	4	82.2	3	5	23	12	15	107	47	1.1	14	33	29.8
Capital & Coast	44	21	61.8	5	14	9	57	69	50	210	5.1	40	170	19.0
Hutt Valley	34	18	86.7	5	14	15	30	38	61	139	3.4	31	108	22.3
Nelson Marlborough	7	7	29.9	12	11	21	36	26	70	99	2.4	16	83	16.2
West Coast	1	2	26.4	-	3	11	11	8	93	25	0.6	8	17	32.0
Canterbury	52	30	46.5	11	29	11	123	138	65	383	9.4	31	352	8.1
South Canterbury	4	5	50.6	1	4	11	20	12	92	46	1.1	7	39	15.2
Otago	16	14	50.8	2	12	11	55	39	49	138	3.4	9	129	6.5
Southland	30	11	98.7	8	7	17	41	40	98	137	3.4	25	112	18.2
Unknown	-	-	-	-	-	-	1	2	4	3	0.1	3	-	100.0
Total	**795**	**399**	**72.35**	**220**	**309**	**14.88**	**1191**	**1175**	**69.04**	**4089**	**100.0**	**790**	**3299**	

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

Figure J.1: Mortality (age-specific rates), by age group and DHB of residence, 2003–2008 combined



Appendix K: Deaths of Non-residents (Overseas Visitors)

Table K.1: Mortality (number of deaths) among non-New Zealand residents, by cause of death and age group, 2003–2008 combined

Category	< 1 year *	1–4 years	5–9 years	10–14 years	15–19 years	20–24 years	Total	%
Medical	8	1	1	2	5	6	23	30.67
Unintentional injury	-	1	4	3	11	28	47	62.67
Intentional injury	-	-	-	-	-	1	1	1.33
Unexplained	-	1	-	-	-	3	4	5.33
Total	**8**	**3**	**5**	**5**	**16**	**38**	**75**	**100.00**

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

Table K.2: Non-resident deaths (4 weeks–24 years), by country of residence, 2003–2008 combined

Country	Deaths	
	Number	%
Australia	13	17.33
Canada	2	2.67
Chile	1	1.33
China	3	4.00
Cook Islands	7	9.33
Czech Republic	1	1.33
Denmark	1	1.33
England	10	13.33
Fiji	2	2.67
Finland	1	1.33
French Polynesia	6	8.00
Germany	2	2.67
Greece	1	1.33
India	4	5.33
Ireland	1	1.33
Japan	5	6.67
Kiribati	1	1.33
Malaysia	1	1.33
Niue	1	1.33
Norway	1	1.33
Philippines	1	1.33
Samoa	3	4.00
Scotland	1	1.33
Tonga	2	2.67
USA	4	5.33
Total	**75**	**100.00**

Appendix L: Previous Recommendations

L1 CYMRC First Annual Report recommendations, 2002–2003

This report covered the initial set-up year of the Committee, and in the recommendations the Minister of Health was asked to note a number of key issues the Committee was working on or was concerned about. These issues were as follows.

Recommendation	Chair's 2009 update on progress
R1.1 CYMRC's intention to collect, in a central database, complete and accurate data on every child and youth that dies in New Zealand, to provide a solid evidential base for developing preventive strategies.	The database continues to be housed in the University of Otago. It is now used by coordinators from every DHB in the country. Work on continuous quality improvement is continuing. There are plans to improve the ability to collect and analyse information with regard to risk, context and circumstance of death.
R1.2 The varying nature and extent of data at the coronial level, which limits the ability to undertake robust, in-depth mortality reviews. The CYMRC supported the establishment of a coronial information system.	Information is now being received from the national coronial database. An excellent working relationship exists with the Chief Coroner. Local Child and Youth Mortality Review Groups are working with local Coroners to develop relationships which can be mutually beneficial, particularly improving information flow.
R1.3 The need for a working group drawing members from the Ministry of Justice, Department for Courts, Police, Coroners' Council, ACC, Ministry of Health and CYMRC to develop protocols that authorise the collection of standardised and consistent data for different types of child and youth deaths.	The Working Group was never established. The work of Local Child and Youth Mortality Review Groups has brought about the improvement of some types of data collection and consistency. Ongoing work is needed.
R1.4 The initiation of a project (for which CYMRC obtained a funding grant) to evaluate the role of a health-trained investigator to collect information for both the coroner and the mortality review process. This would involve a case-control study for SUDI and a case study of youth suicides.	The role of a health-trained investigator to collect information following sudden infant deaths has been established for the last year. Very positive responses have been received from families, communities, Police, Coronial Services and Local Child and Youth Mortality Review Groups. Formal evaluation of this role is being undertaken. An interim rollover pilot funding until July 2010 has been secured. It is hoped that the organisations that benefit from this role will contribute to its continuation and rollout to additional districts.
R1.5 The CYMRC requested senior advisors for the committee from the Police Commissioner's office, Commissioner for Children, Ministry of Education, and District Health Boards.	The role of the Advisors is continuing to develop with regular involvement with the CYMRC as well as advising on report writing and "reality checking" recommendations from Local Child and Youth Mortality Review Groups and the Committee.
R1.6 The fact that the establishing of local mortality review groups relies on the support and resourcing from District Health Boards. The necessary costs may be a significant barrier to implementation for local mortality review groups across the country.	Every District Health Board has now engaged with the Child and Youth Mortality Review Process with their own Local Child and Youth Mortality Review Group or shared access to one in the neighbouring District Health Board.

L2 CYMRC Second Annual Report recommendations, 2003–2004

In the second report, recommendations were made on the functioning of the review process and on measures for decreasing child and youth mortality in New Zealand.

Recommendations for the functioning of the national review process	**Chair's 2009 update on progress**
R2.1 A formal service level agreement should be signed between the CYMRC chair and the Ministry of Health about the parties' mutual obligations.	After a period with frequent changes of staff, the Ministry has now consolidated a strong team to support the Mortality Review Committees. This is lead by a National Co-ordinator of Mortality Review. It is now hoped that the team has critical mass for viability and as such will be less dependent on single staff members, resulting in a greater continuity of performance.
R2.2 The value of an interactive internet-based child and youth mortality database should be recognised and receive secure funding in the medium term.	The interactive web-based database is working well to support local groups. There continues to be some uncertainty about future funding and to what extent continuous quality improvement of this database can be achieved. As increasing amounts of data are available for analysis, further consideration needs to occur as to how analysis can be best achieved.
R2.3 Data collection and sharing protocols between the coroners, police and CYMRC should be specifically mentioned and allowed for in the Coroners Bill.	Mostly there is excellent sharing of information between the Police, Coronial Service and the Child and Youth Mortality Review Committee. The police service has very strongly supported the process of local review. With the roll out of local review groups to every District Health Board, relationships with local coroners should lead to improving two-way communication that can mutually support the shared goals of the two groups.
R2.4 Further policy work should be carried out, with a view to legislative change, to enable case conferences with a range of professionals and agencies to inform mortality review.	The New Zealand Health and Disability Act does not currently allow for this. If the Act is to be reviewed in the future, the Child and Youth Mortality Review Committee will make appropriate submissions.
R2.5 Local mortality review should be recognised as providing detailed and high-quality information that can be accessed to inform prevention strategies.	With local mortality review groups being set up in every District Health Board, their value is becoming more widely known. Various reports this year have highlighted the key local actions that these groups have achieved.
R2.6 Multi-agency local review processes should be recognised as promoting networking, local system change and increasing social capital.	Very positive feedback has been received as new District Health Boards have come onboard this year with regard to the improved networking ability to gain mutual understanding and initiate change.
R2.7 A project team should be funded with members from DHBs and the CYMRC to develop written protocols for local mortality review processes and for reporting at the local level to participating agencies.	A handbook to support local child and youth mortality review processes has been re-drafted this year. The support of a lead co-ordinator working across all 21 DHBs has been vital.
R2.8 DHBs should note the requirement for child and youth mortality review as part of the Provider Quality Specifications (in the Operation Policy Framework).	An increasing number of District Health Boards are recognising that Child and Youth Mortality Review is important as a core quality improvement activity. It is now hoped that the process will "sell itself."
R2.9 All advisors and health care providers should actively promote safe sleeping practices. All services that offer care to infants and mothers should provide safe sleeping environments for infants.	Unsafe sleeping practices continue to contribute to a substantial proportion of sudden infant deaths in New Zealand. The Committee believes that a large proportion of these deaths could be prevented if the suggestions outlined in Chapter 1 of this year's report were implemented.

Recommendations for the functioning of the national review process	Chair's 2009 update on progress
R2.10 Further work should be undertaken to make sure the 'safe environment' message effectively reaches high-risk families, and that providers of care maintain their knowledge and advice on safe sleeping environments.	Chapter 1 of this report highlights additional work required in this area.
R2.11 Earlier use should be made of the inter-agency case management for complex high-risk families with young infants or babies.	Chapter 5 of this report highlights the continuing challenges of inter-agency case management. Further work is needed.
R2.12 A protocol for sensitive death scene investigation should be collaboratively developed at a national level by police, coronial and health services (including pathologists), and Māori.	The health-trained investigator role is supporting clear protocols in the four District Health Boards where this role is available. The protocols are, however, being shared more widely using the local group networks.
R2.13 Leaving children less than three years of age alone in a bath presents a significant drowning risk. Therefore, parents must be given information to help them understand and manage the risk in their own homes. This information should also be in the Well Child booklet.	This issue is once again highlighted in Chapter 2 of this report.
R2.14 Adult services (especially mental health services) should actively consider the safety of the children in the family of an adult mental health service consumer. In particular, parents not turning up for appointments may signal an increased risk for children in that environment. A parent or caregiver not turning up for a mental health appointment should trigger a prompt follow-up by the health service.	It is a continuing observation that children may, at times, be invisible to the services that care for their parents. This system's section of this report discusses the issue of "did not attend for appointment". This issue is also one that may be looked at in part by the Family Violence Mortality Review Committee
R2.15 Adequate housing and a safe environment are not provided to many children who die of unintentional injuries. The CYMRC recommends continued effort by government agencies and others to improve housing quality, especially where children are living.	It is planned that the sixth report of the Committee will look in more detail at unintentional injuries.
R2.16 The CYMRC should share information with the Ministry of Consumer Affairs about the safety of bath seats and swimming rings for babies and infants, as in the previous 2 years at least two deaths were related to the unsupervised use of these products.	This product is mentioned in Chapter 2 of this report. They remain available for sale within New Zealand and carry a warning label.

L3 CYMRC Third Annual Report recommendations, 2004–2005

The recommendations in the third report were as follows.

Recommendation	Chair's 2009 update on progress
R3.1 The Ministry of Health should evaluate its current SUDI prevention messages and consider ways for effective health promotion strategies about baby-safe environments, particularly those relating to safe sleeping practices and smoking during pregnancy. These strategies need to be effective in Māori and Pacific communities.	This topic is a major focus of Chapter 1 of this report.
R3.2 The Minister of Health should note the ongoing high rate of mortality among Māori children and youth, and the level of disparity between Māori and non-Māori.	Plans are under way for a specific Māori report to be produced in 2010.
R3.3 The Minister of Health should note the CYMRC's concern that in some cases there is poor continuity of care in the post-neonatal age group.	Chapter 5 of this report considers this issue in more detail.
R3.4 The Minister of Health should note that the CYMRC has written jointly with SAFEKIDS to the Minister of Consumer Affairs asking her to consider the banning of baby bath seats in New Zealand.	See Chapter 2 of this report.
R3.5 The Minister should note the emergence of suicide in the 10–14 years age group and that the CYMRC will write to other relevant groups, including the All Ages Suicide Prevention Strategy Group, about this issue.	Refer to *Suicide Facts* published by the Ministry of Health. Only very small numbers of cases occur under 15 yrs.
R3.6 NZHIS should discuss with the Department of Internal Affairs ways to transfer information more quickly from Births, Deaths and Marriages to NZHIS, and thus through to health organisations that use NHI numbers.	Local groups continue to be surprised that key information systems and people are not aware that a child or young person has died. This, in part, has driven the recommendation in this report around the After the Death of a Child Care Pathway (see Chapter 5).
R3.7 The Land Transport Safety Authority (LTSA) and the Government should consider the findings of recent research into vehicular-related deaths among children and young people in New Zealand and undertake any measures that may minimise the risk of such deaths.	The Committee was very pleased to see the Land Transport Safety Authority (now part of the NZ Transport Agency) looking at the *Safer Journeys* project this year. Some recommendations related to this issue are documented in Chapter 3 of this report.
R3.8 The Minister of Health should note the need for consistent and adequate support for families after the death of their child. This does not appear to be the case at present, and the CYMRC will be having further discussions with Victim Support, coroners and the police before making clear recommendations on this issue. The Minister should also note that the Cross Departmental Research Pool (CDRP), developed by the CYMRC and sponsored by the Ministry of Health, may have some impact on this issue.	It is hoped that, with the work of Local Child and Youth Mortality Review Groups in every District Health Board, after the death of a child care pathways can be more clearly established, resulting in better support for families.

L4 CYMRC Fourth Annual Report recommendations, 2005–2006

The recommendations in the fourth report were as follows.

Recommendation	Chair's 2009 update on progress
R4.1 All Lead Maternity Carers (LMCs) and providers of Well Child services should focus on clarifying with parents what is known about safe sleeping environments for infants.	See Chapter 1 of this report. Further work is recommended in this area.
R4.2 Culturally appropriate and safe places for sleeping babies need developing and promoting.	Further work is occurring in this area. A major challenge is ensuring that new sleeping arrangements do not come with unexpected hazards.
R4.3 Smoking in pregnancy needs to be a key focus of the Ministry of Health's smoking cessation programme.	It is very pleasing to see the Ministry of Health is continuing to emphasise the importance of smoking cessation in pregnancy. The Committee feels that this work could be more closely linked to prevention of sudden infant death.
R4.4 National monitoring of known risks should be considered as part of the Well Child contract to measure the effectiveness of prevention work.	The Well Child Service Review is still ongoing. We are not aware of any contractual changes that have led Well Child providers to specifically report how successful their interventions have been. Particularly important would be the recording by Well Child providers of what proportion of infants are sleeping on their backs in a safe place and how successful smoking cessation services have been.
R4.5 (As we have previously recommended) there needs to be improved communication between providers, including confirmation that referrals have been received.	Chapter 5 of this report goes into considerable detail about how an unbroken chain of care can be created, reducing potential gaps for children.
R4.6 All District Health Boards develop or review their policy and practice on the transition of care to adult services for children and youth with complex health (including mental health) needs.	Further work is required in this area; again, many issues are stated in Chapter 5 of this year's report.
R4.7 Government (particularly the Ministries of Education, Justice, Social Development and Health) and those working with children and youth, as a priority, actively identify and address barriers to inter-agency communication and working together.	Work across agencies remains a significant challenge. The further rollout of the Strengthening Families initiative and the High and Complex Needs initiative are seen as very positive, but further work is needed to ensure children with the highest needs navigate their way between various Government departments without falling through the cracks.
R4.8 The current work to develop and establish a child health information system accessible to all those in New Zealand providing health services to a child be given a high priority.	A Child Health Information System remains the significant challenge. Parts of the system are in place with the development of the National Immunisation Register, Newborn Hearing Screening Database, Oral Health Service databases, B4School Database and others. The challenge is linking this information in the best interests of the child. It remains tragic that after death, we can link data and note how services could be improved. Such linking should occur prior to death.
R4.9 Consideration be given to a co-ordinated process for follow-up of families after SUDI deaths as part of the current review of Well Child services.	It is hoped that the development of local after the death of a child care pathways (which are strongly advocated for by the Child and Youth Mortality Review Committee) will lead to better support for families following SUDI deaths.

Recommendation	Chair's 2009 update on progress
R4.10 Suggests to the relevant Minister that there is a need for leadership on matters related to the safety of children in rural environments – especially farms – from the Accident Compensation Corporation (ACC), Occupational Safety and Health, and the Director of Injury Prevention at ACC.	There continues to be a paucity of information around the cost of child and youth injury in New Zealand and for some classes of injury different organisations review the scene making understanding of the full picture more difficult. (See Chapter 5.)
R4.11 Encourage all DHBs to institute the recommendations of the Youth Health Action Plan (Ministry of Health. 2002. *Youth Health: A guide to action*. Wellington: Ministry of Health). Available under publications on www.moh.govt.nz.	It is very pleasing to see the rollout of some additional youth health services, particularly Health Support for Young People in the most deprived schools and receiving alternative education. Youth health however, remains a significant concern, highlighted in Chapters 3,4 and 5, and implementing the Youth Health Action Plan remains a valuable way forwards.
R4.12 Requests the Ministry of Health to undertake further work related to alcohol, with a focus on effective methods of altering our current youth 'alcohol bingeing' culture.	The Committee is pleased that the Law Commission has been asked to review alcohol-related harm and make recommendations. The Committee will be publishing a report on alcohol-related harm from its database early in 2010 and has been working closely with the Law Commission providing information on child and youth deaths with alcohol involvement.
R4.13 Requests the Ministry of Health to develop further incentives for District Health Boards to support the evolving of local and national processes for mortality review.	The Committee is delighted that all District Health boards are now involved in the Local Child and Youth Mortality Review process and that a Lead Co-ordinator can work across all 21 District Health Boards. It is important that this momentum is maintained. This will require District Health Boards seeing some positive benefit from Local Child and Youth Mortality Review and no discontinuity in data collection and analysis.

Appendix M: Upcoming Work of the Committee

During the 2009/10 financial year, the Committee intends to:

1. produce the CYMRC's sixth annual report, enabling the Committee to publish as up-to-date data as possible
2. enhance the database to improve search and coding capacity
3. work with relevant others to develop research projects using the CYMRC database, with appropriate data privacy safeguards
4. use information from points 2 and 3 to position the CYMRC so that it is responsive to community needs for good-quality advice in a timely manner, and become responsive to issues of public health importance, including providing statements to the appropriate audiences
5. continue to learn from and link with peers internationally by attending conferences and meetings
6. ensure the smooth roll-out of local mortality review groups to *all* District Health Boards, with training and infrastructure needs covered
7. link with the other mortality review groups to keep similar directions and share infrastructure, as appropriate
8. develop a robust process for generating recommendations using the support of advisors to the CYMRC
9. use the systems developed in points 1–8 to write specific detailed sections in the CYMRC sixth annual report on injury, medical conditions and health system issues
10. contract with researchers to review Māori and Pacific data from the CYMRC database and publish reports of the findings
11. continue with its work on SUDI by organising a SUDI workshop that will help develop links across SUDI service providers and develop ways of supporting providers that service populations particularly at risk for SUDI
12. publish a special report on alcohol-related mortality
13. support processes to increase access to appropriate post-mortems and support families after a death.