



# Child and Youth Mortality Review Committee

Te Rōpū Arotake Auau Mate  
o te Hunga Tamariki, Taiohi

**Appendix D of the Third Report to  
the Minister of Health: Māori Child  
and Youth Mortality 2002 and 2003**

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# Māori Child and Youth Mortality 2002 and 2003

A summary of key findings from a report prepared for The New Zealand Child and Youth Mortality Review Committee (November 2005), Melanie Sargent and Joanne Baxter, Ngai Tahu Māori Health Research Unit, University of Otago.

## Introduction

The CYMRC supported an analysis of Māori child and youth mortality to be undertaken in 2005. This project has involved analysis of data from 1 January 2002 to 31 December 2003. These years were chosen as data for 2002 and 2003 were the most complete at the time of data extraction from the database (August 2005). Data were analysed and written up between August and November 2005. A literature review of relevance to Māori child and youth mortality was also undertaken. This summary describes a selection of key findings from data analysis and a more full report has been provided separately to the CYMRC.

The aim of the analysis was to describe for the CYMRC the extent and pattern of mortality in Māori children and youth (aged one month to 24 years) and to describe the extent and pattern of disparity between Māori and non-Māori. The data source is the database of child and youth mortality that is overseen by the New Zealand CYMRC. A secondary aim was to explore methodological issues that may arise in analysing this database by ethnicity.

## Methods

The analysis is a descriptive epidemiological analysis of the CYMR database. For 2002 and 2003 the denominator data were census population projections for Māori and for Non-Māori, provided by age group and ethnic group. Rate calculations for age-specific groups were calculated based on the number of deaths within an age group and divided by the number of children or young people in that age group.

Due to the need to be able to compare between age groups, 'per 100,000 population' was used for all age-specific analyses comparing age groups. For most analyses, data were combined for 2002 and 2003 and rates were calculated for numbers of deaths in 2002 and 2003 over population in 2002 and 2003.

## Ethnicity data

In order to define ethnicity, ethnicity data were linked across death registration, birth registration and NHI records.

Matching ethnicity across death, birth or NHI records results in an increase in number of Māori from 442 to 478 (an increase of 36 deaths or 8.1%) (refer Table 20). The number of death registrations with a specified non-Māori ethnicity (N=863) reduced by one death. The number with no recorded ethnicity reduced from 44 to 35 (i.e. a reduction of 80%). We have thus chosen to define Māori based on ethnicity data linked across death registration, birth registration and NHI number.

**Table A1:** Deaths (number) by ethnicity on deaths registration, births and deaths combined, and births/deaths/NHI number combined

	Source of ethnicity data		
	Death registration only	Ethnicity on deaths and births registration data combined	Ethnicity on death and birth registration and NHI record combined
Māori ethnicity	442	458	478
Non-Māori ethnic groups	863	856	862
No ethnicity recorded	44	35	9

## Māori child and youth mortality 2002 and 2003

This section presents the results of analysis of Māori mortality data for the years 2002 and 2003. The total number of Māori child and youth deaths for 2002–2003 was 478 with an overall mortality rate of 73.2 per 100 000.

### Gender and age

**Table A2:** Mortality (number and rates) in Māori children and youth by gender and by age 2002 and 2003

Demographic profile	N	% of Māori deaths	Rate*
<b>Gender</b>			
Female	181	37.9	56.4
Male	297	62.1	89.5
<b>Total</b>	<b>478</b>	<b>100</b>	<b>73.2</b>
<b>Age group (years)</b>			
1 month to < 1 year	119	24.9	393.7
1–4 years	57	11.9	47.6
5–9 years	21	4.4	14.4
10–14 years	45	9.4	31.6
15–19 years	126	26.4	107.2
20–24 years	110	23.0	113.8
<b>Total</b>	<b>478</b>	<b>100</b>	<b>73.2</b>

\* Rates per 100,000 1 month to 24 years for males, and for females. Rates for age group are age-specific rates per 100,000 population.

**Gender:** Māori males made up almost two-thirds of all deaths (62.1%) and are 1.6 times more likely to die between ages 1 month to 24 years than Māori females in this age group (37.9%).

**Age:** Māori infants aged 1 month to < 1 year have the highest age-specific rates of mortality (393.7 per 100,000) and 1 in 4 of all Māori child and youth deaths were in this age group. Māori children aged 1–4 years made up 11.9% of all Māori child and youth deaths. Those aged 5–9 years had the lowest rates of mortality and were 4.4% of Māori child and youth deaths. Māori aged 15–19 years had the highest number of deaths within an age group and 26.4% of Māori child and youth deaths were 15–19 years. Māori aged 20–24 years also had high numbers of deaths (110 deaths) and 23.0% of Māori child and youth deaths were in this age group.

**Table A3:** Māori child and youth mortality by gender and age (age-specific rates per 100,000)

Age (years)	Gender					
	Male			Female		
	N	%	Rate*	N	%	Rate*
1 month to < 1 year	68	23%	439.0	51	28%	346.2
1–4 years	30	10%	48.6	27	15%	46.4
5–14 years	42	14%	28.4	24	13%	17.1
15–24 years	157	53%	147.3	79	44%	73.4
<b>Total</b>	<b>297</b>	<b>100</b>	<b>89.5</b>	<b>181</b>	<b>100</b>	<b>56.4</b>

\* Age-specific rate per 100,000 population.

Māori male rates are higher overall and in each age group with greatest difference in the 15–24 year age group. Māori male mortality in the 15–24 year age group comprises almost one in three (157 of 478 in total) deaths among Māori children and youth in this data set. Māori infants aged 1 month to < 1 year have the highest age-specific mortality rates across all age groups for both males and females. Māori children aged 5–14 years have the lowest age-specific rate of death for males and females.

### Māori mortality by cause of death

Table 23 shows Māori mortality by cause. Overall the highest number of deaths due to specific causes were:

- (i) death due to transport/vehicular injury (95 deaths or 19.9%)
- (ii) suicide (76 deaths or 15.9%)
- (iii) sudden unexpected death in infancy (SUDI) (68 deaths or 14.2%).

Overall these three causes made up half of all Māori child and youth deaths (239 out of 478 deaths).

Medical causes made up 28% of all deaths. Deaths due to infectious diseases (28 deaths) and neoplasms (28 deaths) made up 20% each of medical deaths. Circulatory system deaths (17 deaths) and conditions originating in the perinatal period (17 deaths) each made up just over 12% of medical deaths.

Unintentional injury deaths were almost one in three of all Māori child deaths. Vehicular related deaths were almost two-thirds of these deaths (95 of 154). Drowning, followed by poisoning were the next most common. Over 2002 and 2003 there were 23 deaths in Māori children and youth that were due to drowning.

Within the CYMR database for 2002 and 2003 causes of death that were defined as “undetermined/obscure cause/subject to coroners” made up just over 6% of deaths.

**Table A4:** Mortality (number and rates) in Māori children and youth 2002 and 2003 by cause

Category			N	%	Rate*	
Medical		Infectious and parasitic disease	28	5.9	4.3	
		Neoplasms	28	5.9	4.3	
		Diseases of circulatory system	17	3.6	2.6	
		Certain conditions originating in perinatal period	17	3.6	2.6	
		Diseases of nervous system	12	2.5	1.8	
		Congenital malformations etc	12	2.5	1.8	
		Diseases of respiratory system	11	2.3	1.7	
		Endocrine, nutritional and metabolic diseases	4	0.8	0.6	
		Other medical causes	5	1.1	0.8	
		<b>Total medical</b>	<b>134</b>	<b>28.0</b>	<b>20.5</b>	
Injury	Unintentional injury	Vehicular	95	19.9	14.6	
		Drowning	23	4.8	3.5	
		Poisoning	14	2.9	2.1	
		Suffocation	11	2.3	1.7	
		Fire/burn/heat/smoke	8	1.7	1.2	
		Fall	3	0.6	0.5	
		Other	2	0.4	0.3	
			<b>Total all unintentional injury</b>	<b>156</b>	<b>32.6</b>	<b>23.9</b>
	Intentional self-harm and assault	Suicide	76	15.9	11.6	
		Assault	14	2.9	2.1	
		<b>Total unintentional and intentional</b>	<b>246</b>	<b>51.0</b>	<b>37.7</b>	
SUDI		All SUDI	68	14.2	10.4	
All other		Undetermined/obscure/subject to coroners	30	6.3	4.6	
<b>Total</b>		<b>Total all causes</b>	<b>478</b>	<b>100</b>	<b>73.2</b>	

\* Rate per 100,000 population 1 month to 24 years.

## Māori mortality by cause and age group

**Table A5:** Māori child and youth mortality for age groups by cause 2002 and 2003

Age		Cause							Total
		Medical	Vehicular	Non-vehicular unintentional injury	Suicide	Assault	SUDI	Undetermined/obscure/subject to coroner	
1 month to <1 year	N	38	1	6	0	2	65	7	119
	Rate*	125.7	3.3	19.9	0	6.6	215.0	232	393.7
	% within age	31.9	0.8	5.0	0	1.7	54.6	5.9	100
1–4 years	N	16	10	20	0	1	3	7	57
	Rate*	13.4	8.3	16.7	0	0.8	2.5	5.8	47.6
	% within age	28.1	17.5	35.1	0	1.8	5.3	12.3	100.0
5–14 years	N	29	16	11	8	0	0	2	66
	Rate*	10.1	5.6	3.8	2.8	0	0	0.7	22.9
	% within age	43.9	24.2	16.7	12.1	0	0	3.0	100.0
15–24 years	N	51	68	24	68	11	0	14	236
	Rate*	23.8	31.8	11.2	31.8	5.1	0	6.5	110.2
	% within age	21.6	28.8	10.2	28.8	4.7	0.0	5.9	100.0
Total	N	134	95	61	76	14	68	30	478
	Rate*	20.5	14.6	9.4	11.6	2.1	10.4	4.6	73.2
	% of total	28.0	19.9	12.7	15.9	2.9	14.2	6.3	100

\* Rate is age-specific rate per 100,000.

This table shows:

- **1 month to < 1 year:** Māori age-specific mortality rates are greatest in this age group with rates three times higher than in any other age group. SUDI (54.6%) is the leading cause of death followed by medical causes (31.9%) in this age group.
- **1 to 4 years:** Age-specific rates are lower than in those aged under 1 year, however higher than in the 5–14 age group. Unintentional injuries are the leading cause (35.1%) followed by medical causes (28.1%) in this age group.
- **5 to 14 years:** Age-specific rates of mortality in Māori children are lowest in this age group. Medical causes are the leading cause (43.9%) followed by vehicular injury (24.4%). Over 1 in 10 deaths was due to suicide (12.1%).
- **15 to 24 years:** Age-specific mortality rates in this age group are higher than all child and youth apart from those 1 month to < 1 year. Suicides (28.8%) and vehicular injury deaths (28.8%) combined made up almost 60% of all deaths in this age group. Medical causes made up just over 1 in 5 deaths also (21.6%) and other unintentional injury makes up just over 1 in 10 deaths (10.2%).

## Māori and non-Māori child and youth mortality 2002 & 2003

The following section shows findings for Māori and non-Māori.

### Mortality by year and total

**Table A6:** Child and youth mortality (numbers and rates) by ethnicity and by year 2002 and 2003

Year	Māori			Non-Māori			Total N	Relative risk M:NM
	N	%	Rate*	N	%	Rate*		
2002	213	44.6	65.7	438	50.3	39.5	651	1.7
2003	265	55.4	80.6	433	49.7	38.3	698	2.1
<b>Total</b>	<b>478</b>	<b>100</b>	<b>73.2</b>	<b>871</b>	<b>100</b>	<b>38.9</b>	<b>1349</b>	<b>1.9</b>

\* Rate per 100,000 population 1 month to 24 years.

The Māori mortality rate overall was almost twice that for non-Māori (RR=1.9, 73.2 per 100,000 compared with 38.9 per 100,000). Mortality rates for Māori were higher in 2003 than in 2002, however rates for non-Māori were very similar across the time period.

### Gender

**Table A7:** Child and youth mortality (numbers and rates) by ethnicity and by gender 2002 and 2003

Gender	Māori			Non-Māori			Total N	Relative Risk M:NM
	N	%	Rate*	N	%	Rate*		
Male	297	62.1	89.5	558	64.1	48.6	855	1.8
Female	181	37.9	56.4	313	35.9	28.7	494	2.0
<b>Total</b>	<b>478</b>	<b>100</b>	<b>73.2</b>	<b>871</b>	<b>100</b>	<b>38.9</b>	<b>1349</b>	<b>1.9</b>

\* Rate per 100,000 population 1 month to 24 years.

Almost two out of three deaths occurred in males for both Māori (62.1%) and non-Māori (64.1%). Māori rates of mortality were 1.8 times higher in males and twice as high in Māori females when compared with non-Māori.

### Age

**Table A8:** Child and youth mortality (numbers and rates) by ethnicity and by age group 2002 and 2003

Age group	Māori			Non-Māori			Total N	Relative risk M:NM
	N	%	Rate*	N	%	Rate*		
1 month to <1 year	119	24.9	393.7	106	12.2	134.4	225	2.9
1 to 4 years	57	11.9	47.6	93	10.7	28.2	150	1.7
5 to 9 years	21	4.4	14.4	65	7.5	14.8	86	1.0
10 to 14 years	45	9.4	31.6	65	7.5	13.6	110	2.3
15 to 19 years	126	26.4	107.2	260	29.9	55.9	386	1.9
20 to 24 years	110	23.0	113.8	282	32.4	63.0	392	1.8
<b>Total</b>	<b>478</b>	<b>100</b>	<b>73.2</b>	<b>871</b>	<b>100</b>	<b>38.9</b>	<b>1349</b>	<b>1.9</b>



\* Age-specific rate per 100,000 population aged 1 month to 24 years.

Māori age-specific rates of mortality were higher across all age groups apart from those aged 5–9 years where rates were the same (RR = 1.0). The highest rates of mortality for both Māori and non-Māori were in the 1 month to < 1 year. This age group also had the highest disparity evident between Māori and non-Māori with Māori mortality 2.9 times higher and there were more Māori deaths than non-Māori deaths in this age group. Further disparities are seen in those aged 10–14 years where Māori were more than twice as likely to die than non-Māori rates of mortality in those aged 15–19 years, and 20–24 years were almost twice that for non-Māori.

## Māori and non-Māori mortality by cause of death – total

**Table A9:** Māori and non-Māori child and youth major causes of death 2002 and 2003

Cause	Māori			Non-Māori			Relative risk M:NM
	N	%	Rate*	N	%	Rate*	
Medical	134	28.0	20.5	339	38.9	15.2	1.4
Vehicular	95	19.9	14.6	232	26.6	10.4	1.4
Non-vehicular unintentional injury	61	12.8	9.4	102	11.7	4.6	2.1
Suicide	76	15.9	11.6	131	15.0	5.9	2.0
Assault	14	2.9	2.1	18	2.1	0.8	2.7
SUDI	68	14.2	10.4	27	3.1	1.2	8.6
Undetermined/obscure/subject to coroner	30	6.3	4.6	22	2.5	1.0	4.7
<b>Total</b>	<b>478</b>	<b>100</b>	<b>73.2</b>	<b>871</b>	<b>100</b>	<b>38.9</b>	<b>1.9</b>

\* Rate per 100 000 population aged 1 month to 24 years.

Across each cause group, Māori rates of mortality are higher than those for non-Māori. The greatest disparity is for SUDI. As a rate calculated across those aged 1 month to 24 years, Māori infants were more than eight times more likely to die as a result of SUDI than non-Māori. Māori were 1.4 times more likely to die from medical related causes. Māori vehicular related deaths were 1.4 times higher than non-Māori and were the second leading cause of death in both. Non-vehicular unintentional injuries were twice as high for Māori than non-Māori. Suicide was the third leading cause of death (in terms of numbers) and Māori suicide rates were two times higher than non-Māori. Assaults made up just over 2.1% of non-Māori deaths and 2.9% of Māori deaths. In total, there were 52 cases that were either still subject to coroners, or had causes that were obscure or undetermined. Of these 30 were in Māori and 22 in non-Māori.

## Summary of key findings

### Mortality in Māori children and youth

There were 478 Māori child and youth deaths over 2002 and 2003 combined and an age-specific rate of 73.2 per 100,000. Amongst these deaths, the level and pattern varied by gender and by age group.

With regards to gender:

- Of the 478 Māori deaths almost two-thirds (62.1%) were in Māori males. The difference between Māori males and Māori females occurred across all age groups and was greatest in those aged 15–24 years, and least in those aged 1–4 years.

- The difference between Māori males and Māori females also occurred across all causes but was particularly so for suicide and vehicular injury in youth.

With regards to age:

- Around half of all Māori child and youth deaths (49.4%) were in those aged 15–24 years. Māori males in this age group comprised almost one in three (157 of 478 total) of all deaths in Māori children and youth in this data.
- Age-specific mortality rates were highest in those aged 1 month to < 1 years where rates (393.7 per 100,000) were over five times higher than the mortality rate for Māori children and youth overall (73.2 per 100,000). Mortality in this age group made up almost one in four (24.9%) of all Māori child and youth deaths.
- The lowest numbers and rates of mortality were in those aged 5–9 years.
- Gender difference between Māori males and Māori females occurred across all age groups and was greatest in those aged 15–24 years, and least in those aged 1–4 years.
- Patterns of mortality by cause varied with age group. In those aged 1 month to < 1 year, SUDI and medical causes were the leading cause. In those aged 1–4 years unintentional injury (non-vehicle) and medical causes were the leading causes. In those aged 5–14, medical causes followed by vehicular injury were leading causes and in those aged 15–24 years, vehicular injury and suicide were leading causes and made up almost 30% (28.8%) each.

With regards to cause:

- The greatest number of deaths due to a single cause was vehicular injury (95 deaths) followed by suicide (76 deaths) and followed by SUDI (68 deaths).
- When specific causes were aggregated, medical causes made up 28% of all deaths with infectious disease and neoplasms being the leading causes making up 20% each of medical causes.
- Unintentional injury deaths were also an important cause of mortality with vehicular injury making up two-thirds of these deaths (95 of 154). Drowning and poisoning were the next most common causes of unintentional injury death.
- A total of 6% of all the Māori deaths in this data (as extracted in August 2005) had causes that were undetermined, obscure or subject to coroners.

## **Māori and non-Māori**

Analysis of the CYMR database describing findings for both Māori and non-Māori enabled differences in mortality rates and patterns of mortality to be identified. Mortality rates in Māori and non-Māori overall, by gender, age and cause have been presented.

Key findings include:

- Overall:
  - Mortality rates comparing Māori with non-Māori show Māori rates are 1.9 times that of non-Māori in those aged 1 month to 24 years.
- Gender:
  - The overall proportion of mortality by gender is similar in Māori and in non-Māori with around two-thirds of deaths in both Māori (62.1%) and non-Māori (64.1%) being male.

- Mortality rates are higher in both Māori males and Māori females when compared with non-Māori. The relative risks of mortality for Māori when compared with non-Māori 1.8 for males and 2.0 for females.
- The highest rates of mortality were in Māori males (89.5 per 100,000), Māori females (56.4 per 100,000), non-Māori males (48.6 per 100,000) and non-Māori females (38.9 per 100,000).
- Age-group:
  - Patterns of disparity by age vary between age groups. The greatest difference between Māori and non-Māori is in those aged 1 month to < 1 year where Māori rates are almost three times higher (RR=2.9). This contrasts with those aged 5–9 years where Māori rates were the same as non-Māori (RR=1.0).
  - Mortality rates in Māori were almost twice that for non-Māori in those aged 1–4 years (RR= 1.7), 15–19 years (RR=1.9) and 20–24 years (RR=1.8) and over twice that for non-Māori in those aged 10–14 years.
  - Overall, the highest age-specific rates when gender and ethnicity are also considered, were in Māori aged 1 month to < 1 year (393.7 per 100,000). The next highest age-specific rate was in non-Māori in this age group (134.4 per 100,000).
- Cause of death:
  - With regards to patterns of mortality for specific causes, the leading single cause of mortality for both Māori and non-Māori were vehicular injury. Vehicular injury accounted for almost one in five Māori child and youth deaths (19.9%) and one in four non-Māori child and youth deaths (26.6%). Rates of vehicular injury death were 1.4 times higher in Māori.
  - The next leading specific cause of mortality for both Māori and non-Māori was suicide with suicide contributing to 15.9% of Māori deaths, and 15.0% of non-Māori deaths. Māori deaths made up 36.7% of all suicide deaths (76 of 207) with rates that were two times higher than non-Māori. Of concern, all suicide deaths in 2002 and 2003 in those aged under 15 years were Māori (N=8).
  - When causes were aggregated, medical causes overall make up just over one in four Māori deaths (28%) and over one in three non-Māori deaths (38.9%). Māori deaths make up 28.3% of all medical deaths and Māori mortality rates for medical causes are 1.4 times higher than non-Māori.
  - The greatest disparity between Māori and non-Māori was for SUDI. Māori deaths made up 72% of all SUDI deaths (68 out of 95 deaths). While SUDI made up 14.2% of all Māori child and youth deaths, it comprises 3.1% of all non-Māori child and youth deaths. Overall age-specific child and youth mortality rates (with population of 1 month to 24 years as the denominator) are 8.6 times higher in Māori. Age-specific mortality for SUDI in those aged 1 month to < 1 year show a rate of 215 per 100,000 in Māori that is 7.1 times higher than the age-specific rate in non-Māori in this age group.
  - For both Māori and non-Māori age-specific mortality rates were greatest in those aged 1 month to < 1 year. For both Māori and non-Māori the next highest rates were in those aged 20–24 years followed closely by those aged 15–19 years.

## Recommendations

A range of recommendations to the CYMRC have been made within the report. These are divided into:

- (i) recommendations for addressing Māori child and youth mortality

(ii) recommendations for the CYMR database.

Recommendations for addressing Māori child and youth mortality included:

- maintaining Māori child and youth mortality as a priority area within the activity of the CYMRC
- support for current and further work to address Māori child and youth mortality priorities including support for ongoing projects and consideration of new projects addressing specific areas of concern regarding Māori child and youth mortality
- The need for an ongoing process of monitoring Māori child and youth mortality with a recommendation that the CYMRC supports a system for ongoing monitoring of Māori child and youth health within the CYMR database with reports on Māori child and youth mortality, updated annually.

Recommendations for the CYMR database included:

- continuation of initiatives that will gain more complete records on deaths in order to increase the capacity to gain more detailed understanding around specific causes and areas for prevention
- development of policies related to ethnicity analysis within the CYMR
- consider as to what would be required of the database in order to utilise the database to monitor Māori child and youth mortality (see above comments re monitoring)
- developing an equivalent of a data dictionary describing variables and how they arose (so that in future anyone analysing the data knows the source of data for each variable and how it has been coded)
- ensure analyses from the data are labelled with the date that the data were extracted so that changes made to the data following, are easily interpreted.

## Overall conclusions

### Strengths and limitations of the analysis

This is the first opportunity to investigate Māori child and youth mortality in detail within the context of the CYMR. The CYMR database consists of records on mortality from 1 January 2002 onwards, encompassing mortality in children from one month through to youth aged 24 years. In having multiple sources of data and opportunities for increased depth of information, there is an important opportunity to provide more detailed information on Māori child and youth mortality. It may be used also for determining if the patterns of mortality that were evident over the past decades exist within this data. This report will add updated data with capacity to explore specific issues further.

The analysis is limited to 2002 and 2003 as these were the years of most complete data at the time of analysis. It will be possible to update data with later years in future analyses. This report also does not include perinatal mortality (i.e. mortality in those aged under one month). The Perinatal Mortality Review Committee will be reviewing mortality in those aged under one month and thus analyses of this age are not presented here.

A further limitation is the capacity to undertake in-depth analyses of specific causes, e.g. youth suicide using the more detailed information in the database. Due to issues of completeness of the detailed data on particular causes of death, it is not possible to analyse this information quantitatively without risking misleading analyses.

Finally, it is beyond the scope of this report to review programmes and interventions that may reduce mortality and it is likely that in a range of areas, specific work on what are likely to be effective interventions will be needed.

## Areas for prevention and intervention

If the various forms of describing lead causes of mortality are put together then the following priorities are identified:

- a) SUDI – this cause is a leading cause of disparity and one of the leading contributors to the number of deaths in Māori children. In the very young (1 month to < 1 year) Māori deaths due to SUDI constitute 72% of all SUDI deaths.
- b) Suicide – this is an area of disparity and of high numbers of deaths. It is described here as a high priority in particular due to the concerning finding of a number of 10–14 year old-suicide deaths who were Māori. Thus consideration of youth suicide and concerning numbers of Māori child suicide is a high priority.
- c) Vehicular injury – based on numbers and across all ages particularly in youth vehicular injury is an important area for prevention.
- d) Medical causes – medical causes aggregated across specific causes are still a major cause of death however and span a diverse range of conditions and ages. Areas of importance are infectious disease and neoplasms. Age groups in particular are those under one year and youth.
- e) Non-vehicular unintentional injury – this is also an area with significant scope for prevention across a variety of causes including drowning, poisoning, suffocation and death in fires. Disparity is evident, particularly in those aged 1–4 years and in youth.
- f) Assault – is an area of ongoing concern across ages with numbers dying due to assault being highest in youth.

## Conclusion

The picture of Māori child and youth mortality in 2002 and 2003 CYMR data is one of concern. Māori child and youth deaths make up over one in three of all child and youth deaths and mortality in Māori children and youth is almost twice that for non-Māori. All areas of mortality are important however some areas are highlighted as particularly important for Māori: SUDI in infants, suicide in those 10 years and upwards, and vehicular injury across all ages, however particularly Māori aged 15–24 years.

This is not to say that there is any room for complacency in any other area. Differences in rates and patterns by cause highlight the need to consider age when determining where to place strategies and interventions to reduce mortality. Medical causes also are an area of need including for preventable causes such as infectious disease. In addition unintentional injury (non-vehicle), across all ages is also a priority, however particularly important in young children aged 1–4 years and in youth. Assault again is important and although there are smaller numbers it is a very important area of disparity.

This analysis describes many areas for reducing mortality among Māori children and youth. The CYMRC is well placed to be describing, documenting and disseminating information about Māori child and youth mortality. In addition, the CYMRC has an important role in providing advice on how to reduce mortality in Māori children and youth.

This first analysis of the database for the CYMRC has commenced this process by starting with the first task, i.e. describing, documenting and disseminating information about Māori child and youth mortality in 2002 and 2003. The next challenge is to work with the

information, gain new information and develop advice and strategy to ultimately lead to a reduction in mortality in Māori children and youth.