

4 MORTALITY

Bridget Robson, Gordon Purdie

Key points

- There were 2,650 deaths a year on average among Māori during 2000–2004. A third occurred in middle age (45–64 years) and 40% among those aged 65 years and over. In the non-Māori population there were 25,300 deaths a year on average, 80% occurring among those aged 65 years or more. The younger age distribution of deaths among Māori was partly due to the young population structure and partly due to higher death rates at younger ages.
- The age-sex-standardised all-cause mortality rate for Māori was twice that of non-Māori (434 per 100,000 and 213 per 100,000 respectively). The Māori/non-Māori rate ratio was highest in the 45–64 year age group and lowest in the 1–4 year age group.
- Māori males had the highest mortality rates in each age group. Māori females had higher death rates than non-Māori males in all age groups except 15–24 years. In each age group death rates were lowest among non-Māori females.
- Mortality rates increased with increasing area socioeconomic deprivation among both Māori and non-Māori. Māori are disproportionately represented in the most deprived areas and, therefore, at higher risk of death overall compared to non-Māori. In addition, within each level of deprivation Māori death rates were higher than those of non-Māori at the same level.
- Cardiovascular disease (heart disease and stroke) was the most common cause of death among Māori accounting for a third of all Māori deaths. Just over a quarter of Māori deaths were caused by cancer. Respiratory disease and accidents caused 8% each, diabetes 7% and suicide 3%.
- Cardiovascular disease death rates were 2.3 times higher for Māori than for non-Māori during 2000–2004. Cancer mortality rates were 77% higher and accidental deaths 94% more common. Deaths due to respiratory disease were 2.6 times more frequent among Māori. The type 2 diabetes mortality rate was seven times the non-Māori rate. The age-sex-standardised rate of suicide was 49% higher among Māori.
- During the five-year period 2000–2004 there was a significant downward trend in all-cause mortality rates for Māori females and for Māori and non-Māori males. Māori death rates decreased for ischaemic heart disease, chronic rheumatic heart disease, heart failure, meningococcal infection, premature birth and SIDS, some cancers (leukaemia, rectal and pancreatic cancers) and diabetes mellitus. There were significant increases among Māori in deaths due to accidental poisoning and exposure to inanimate mechanical forces among Māori.

Hauora: Māori Standards of Health IV

- Māori infant death rates were 64% higher than those of non-Māori. Perinatal conditions (premature birth in particular) and sudden infant death syndrome (SIDS) were major causes of death among Māori infants.
- Accidents were the main causes of death among Māori children aged 1–4 years. All-cause death rates were 36% higher for Māori compared to non-Māori children.
- Accidents were the most common cause of death among Māori children aged 5–14 years, followed by cancer. Suicide was the fourth most frequent cause of death. All-cause mortality was 47% higher for Māori children in this age group.
- Accidents and suicide were the main causes of death among Māori aged 15–24 years, accounting for 70% of all deaths in this age group. All-cause mortality was 60% higher for Māori youth than for non-Māori youth.
- Accidents, cancer and cardiovascular disease were the main causes of death among Māori aged 25–44 years, causing around a fifth each of all deaths in this age group. Suicide was the fourth leading cause of death. Māori had twice the all-cause mortality rate of non-Māori.
- Cardiovascular disease and cancer were the major causes of death for Māori aged 45–64 years. Diabetes was the third leading cause of death, followed by respiratory disease. All-cause mortality was 2.59 times higher for Māori than non-Māori.
- Cardiovascular disease was the most common cause of death among Māori aged 65 years and over followed by cancer and respiratory disease. The age-standardised all-cause mortality rate was 76% higher for Māori compared to non-Māori.

Introduction

This chapter examines major causes of death among the total Māori and non-Māori populations and by age group and sex during the period 2000–2004. The number of Māori deaths registered each year is comparatively small when presented by age group and specific causes. To overcome the yearly fluctuation in rates that can occur when numbers are small, all deaths in the five-year period were combined. The numbers of deaths shown in the tables are, therefore, the total number of deaths for the five-year period 2000 to 2004 inclusive. Rates are generally reported per 100,000 person-years.

All deaths with Māori recorded on any of the three ethnicity fields on the death registration were classified as Māori. All others were classified as non-Māori.

Age-sex-standardised rates were used to compare the total Māori population with the total non-Māori population. This takes account of the higher proportion of young people in the Māori population, in which fewer deaths are expected. All age-standardised rates were standardised to the 2001 Census Māori population (see Appendix 4). Rates standardised to Segi's world population and the WHO world population will also be available on the *Hauora IV* website www.hauora.maori.nz.

Appendix 2 contains a glossary of International Classification of Diseases (ICD) codes used to classify the underlying cause of death. ICD-10-AM groupings were used for deaths.

More detail on statistical methods can be found in Appendix 1.

What is in this chapter?

The data in this chapter is presented for Māori and non-Māori and is divided into three main sections:

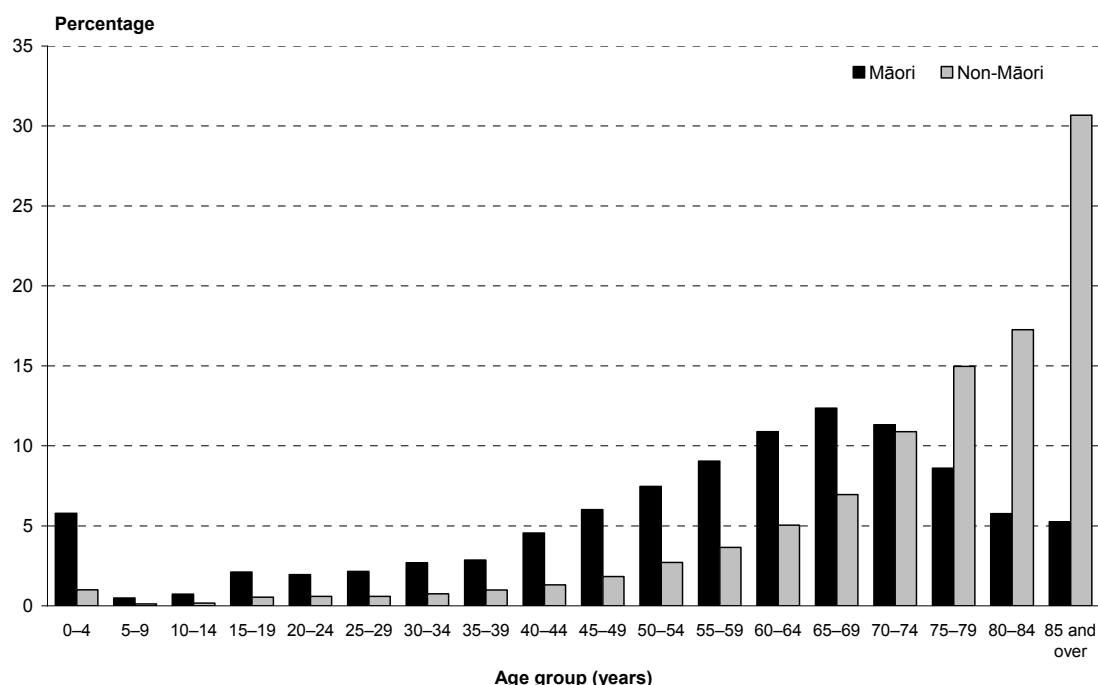
- All-cause deaths: age-standardised and age-specific mortality rates for Māori and non-Māori, by sex and by area deprivation (NZDep2001 decile).
- Major causes of death – all ages: age-sex-standardised mortality rates by cause and selected causes of death by area deprivation.
- Major causes of death by age group:¹
 - infants aged less than 1 year;
 - 1–4 years;
 - 5–14 years;
 - 15–24 years;
 - 25–44 years;
 - 45–64 years;
 - 65 years and over.

All-cause deaths

There were 2,650 deaths a year on average among Māori during 2000–2004. A third occurred in middle age (45–64 years), and 40% in the older age group (65 years and over). In the non-Māori population there were 25,300 deaths a year on average, 80% occurring among those aged 65 years or more (Figure 4.1). The difference in the proportion of deaths in the older age group is partly due to higher death rates at younger ages among Māori but also because of the difference in the underlying age structure of the two populations (the non-Māori population being relatively old).

¹ Rates from *Hauora IV* cannot be directly compared with those of previous editions due to the changes in ethnicity classification. For example, *Hauora III* described child mortality as lower among Māori than non-Māori but this is now known not to be the case as deaths among Māori children were severely undercounted prior to 1996.

Figure 4.1: Age-distribution of Māori and non-Māori deaths during 2000–2004



Children aged 5–14 years had the lowest death rates (23 per 100,000 among Māori and 15 per 100,000 among non-Māori), followed by the 1–4 year age group (41 and 30 per 100,000 respectively). The highest death rates were in the oldest age group (5,740 and 3,130² per 100,000 respectively) (Table 4.1).

Mortality rates overall were twice as high for Māori as non-Māori (434 per 100,000 compared to 213 per 100,000). The rate ratio was largest in the 45–64 year age group (a ratio of 2.6) and smallest among children (1.36 at ages 1–4 years and 1.47 at 5–14 years). Among older people Māori mortality was 75% higher than that of non-Māori.

The smallest rate difference (the non-Māori rate subtracted from the Māori rate) was in 5–14 year olds (a difference of 7 deaths per 100,000), and the largest was in those aged 65 years and over (2,380 deaths per 100,000). Rate differences were also large for the 45–64 year age group (665 deaths per 100,000) and for infants (340 deaths per 100,000).

Māori males had the highest mortality rates overall and in each age group. Māori females had higher rates of death than non-Māori males overall and in most age groups (apart from 15–24 years). Death rates were lowest for non-Māori females in each age group.

The age-standardised rate of death was 40% higher for males than for females among Māori (508 compared to 360 per 100,000), and 55% higher among non-Māori (247 versus 158 per 100,000). The largest variations between Māori male and female mortality rates were at ages 15–24 years (over twice as high among males) and 25–44 years (nearly 80% higher among males). The male/female differential was generally larger among non-Māori than Māori from the age of 5–14 years and older.

² The crude death rate for Māori aged 65 years and over was 5,484 per 100,000 and for non-Māori 4,564 per 100,000.

Mortality

The age-standardised rate ratio for Māori compared to non-Māori was higher for females than males (2.16 compared to 1.96). However the rate difference was higher among males than among females (250 deaths per 100,000 for males compared to 190 per 100,000 for females).

Table 4.1: All-cause deaths by sex and age group, 2000–2004

Age group	Māori		Non-Māori		Rate ratio (95% CI)
	Total number	Rate (95% CI)	Total number	Rate (95% CI)	
Both sexes					
< 1 year	644	840.2 (777.7–907.6)	1,018	501.3 (471.4–533.1)	1.68 (1.52–1.85)
1–4 years	122	40.9 (34.2–48.8)	249	30.1 (26.6–34.1)	1.36 (1.09–1.69)
5–14 years	162	22.7 (19.4–26.4)	353	15.4 (13.9–17.1)	1.47 (1.22–1.77)
15–24 years	538	101.3 (93.1–110.3)	1,422	63.4 (60.2–66.8)	1.60 (1.45–1.77)
25–44 years	1,623	189.8 (180.8–199.3)	4,590	92.8 (90.2–95.5)	2.05 (1.93–2.16)
45–64 years	4,428	1,082.4 (1051.0–1114.8)	16,758	417.6 (411.4–424.0)	2.59 (2.51–2.68)
65 years and over	5,738	5,507.1 (5364.6–5653.3)	102,268	3,127.5 (3105.4–3149.8)	1.76 (1.71–1.81)
All ages	13,254	434.3 (426.9–441.8)	126,658	213.1 (211.3–214.8)	2.04 (2.00–2.08)
Females					
< 1 year	276	741.7 (659.2–834.6)	459	460.8 (420.5–504.9)	1.61 (1.39–1.87)
1–4 years	52	35.9 (27.3–47.1)	120	29.7 (24.8–35.5)	1.21 (0.87–1.67)
5–14 years	69	19.8 (15.6–25.1)	140	12.6 (10.7–14.9)	1.57 (1.18–2.10)
15–24 years	168	62.9 (54.1–73.2)	401	36.5 (33.1–40.3)	1.72 (1.44–2.06)
25–44 years	621	138.4 (128.0–149.8)	1,638	64.4 (61.4–67.6)	2.15 (1.96–2.36)
45–64 years	1,955	927.6 (887.4–969.7)	6,890	340.7 (332.8–348.9)	2.72 (2.59–2.86)
65 years and over	2,832	4,686.8 (4,516.2–4,863.9)	53,848	2,447.9 (2,422.4–2,473.8)	1.91 (1.84–1.99)
All ages	5,973	360.2 (351.1–369.5)	63,496	166.8 (164.7–169.0)	2.16 (2.10–2.22)
Males					
< 1 year	367	930.5 (840.0–1030.8)	559	540.4 (497.4–587.1)	1.72 (1.51–1.96)
1–4 years	70	45.6 (36.0–57.6)	129	30.4 (25.6–36.2)	1.50 (1.12–2.00)
5–14 years	93	25.4 (20.7–31.1)	213	18.1 (15.8–20.7)	1.40 (1.10–1.79)
15–24 years	370	140.2 (126.6–155.2)	1,021	89.1 (83.8–94.8)	1.57 (1.40–1.77)
25–44 years	1,002	246.5 (231.7–262.3)	2,952	122.9 (118.5–127.4)	2.01 (1.87–2.16)
45–64 years	2,473	1,246.9 (1198.7–1297.0)	9,868	495.8 (486.1–505.7)	2.52 (2.41–2.63)
65 years and over	2,906	6304 (6,078.5–6,537.9)	48,420	3,771.7 (3,735.7–3,808.0)	1.67 (1.61–1.74)
All ages	7,281	508.3 (496.7–520.1)	63,162	259.6 (256.9–262.3)	1.96 (1.91–2.01)

Notes: Rates are calculated per 100,000; rates for 'all ages' and the 65 years and over age group were age-sex-standardised to the 2001 Māori population.

All-cause deaths by area deprivation

Figure 4.2: Māori and non-Māori deaths by gender and area deprivation, 2000–2004

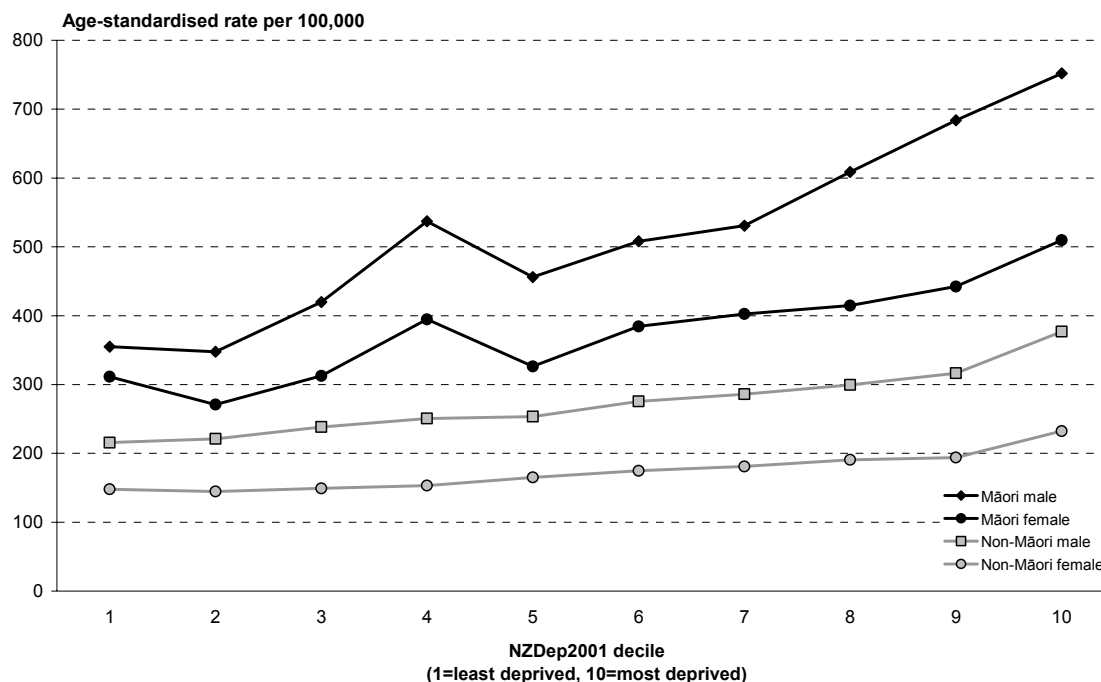


Figure 4.2 shows age-standardised mortality rates for Māori and non-Māori males and females, by NZDep2001 decile (the New Zealand index of small-area deprivation) for the period 2000–2004. Death rates increased with increasing socioeconomic deprivation for each population group.

Within each gender the association between deprivation and mortality was significantly stronger among Māori than non-Māori. The rate of increase in mortality rate per increasing deprivation decile was 6.6% (95% CI 4.3–9.0%) for Māori females compared to 2.2% (1.6–2.8%) for non-Māori females. For Māori males the rate of increase per successive decile was 9.2 (7.0–11.4%) compared to 4.4% (3.8–5.0%) for non-Māori males.

Within each deprivation decile there was a significant disparity between Māori and non-Māori rates. Māori males had the highest death rates in each decile, followed by Māori females, then non-Māori males. Non-Māori females had the lowest rates in each decile.

The mortality rate for non-Māori females at the *most* deprived level was significantly lower than that of Māori females at the *least* deprived level. Adjusted for age and sex, Māori females had 2.3 times the mortality rate of non-Māori females in the same deprivation decile (95% CI 1.98–2.73).

Among males, Māori mortality rates averaged 2.06 times higher than those of non-Māori living in the same deprivation decile areas (95% CI 1.96–2.18). The mortality rate for the most deprived non-Māori males was significantly lower than that for Māori males in decile 4 and above.

Major causes of death – all ages

Figure 4.3: Leading causes of death among Māori, 2000–2004

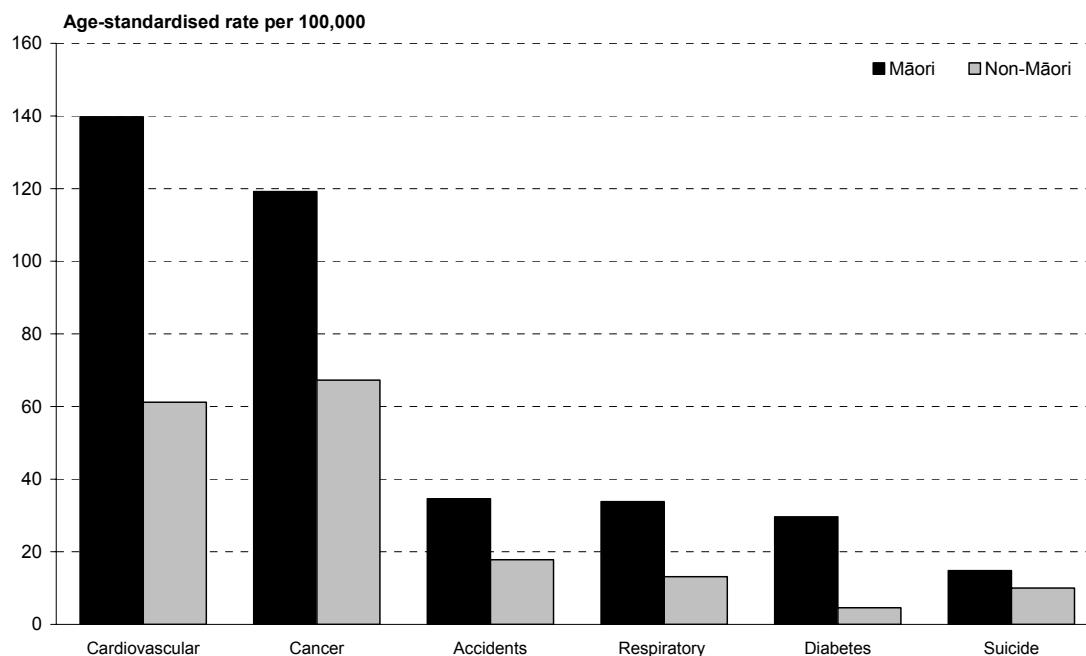


Figure 4.3 shows the leading causes of death for Māori. Cardiovascular disease and cancer were the two most common causes. Accidents, respiratory disease, diabetes and suicide were the next most frequent. Māori age-sex-standardised mortality rates were significantly higher than non-Māori rates for each of these major causes.

Table 4.2 presents the most common causes of Māori death within each major category. Māori age-sex-standardised rates were significantly higher than non-Māori rates for most specific causes except colorectal cancer, Alzheimer’s disease, and vascular dementia. Any significant time trends in mortality rate over the five-year period 2000–2004 are included in the descriptions below.

Circulatory system

Circulatory system disease (cardiovascular disease) was the most common cause of death among Māori, accounting for a third of all Māori deaths. On average, 860 Māori died from circulatory disease per year during 2000–2004. The majority of deaths were caused by ischaemic heart disease (heart attacks), followed by strokes and chronic rheumatic heart disease. Māori rates of death were over twice those of non-Māori for IHD, 60% higher for stroke and seven times higher for chronic rheumatic heart disease.

There was a significant downward trend among Māori in deaths from circulatory disease during the period 2000–2004, with rates decreasing by 6% per year on average. The trend was significant for deaths from ischaemic heart disease (6% decrease per year), chronic rheumatic heart disease and heart failure (both decreasing by 13% per year).

Cancer

Cancer was the second most common major cause of death, causing 730 deaths per year on average among Māori. The age-sex-standardised rate of death from cancer was nearly 80% higher for Māori than non-Māori, accounting for nearly a fifth of the all-cause mortality difference. Lung cancer was the most common cause of cancer death, with 225 deaths per year on average among Māori. Female breast, colorectal, and stomach cancer were the next most common causes of cancer death. Apart from colorectal cancer, Māori mortality was higher than that of non-Māori for each of these cancers.

Among Māori females there was a small but significant downward trend in cancer mortality during 2000 to 2004, decreasing by 3% per year on average. The trend was similar but not significant for Māori males.

Endocrine, nutritional, metabolic diseases

Type 2 diabetes was the most common cause of death from endocrine, nutritional and metabolic diseases. Māori mortality rates were more than seven times the non-Māori rate for type 2 diabetes. Type 1 diabetes deaths were also higher among Māori (2.9 times higher). Obesity was recorded as the underlying cause of death for approximately 20 Māori and 40 non-Māori per year.

There was a significant downward trend in Māori diabetes mortality rates over the period 2000–2004, decreasing by 3% per year on average.

Respiratory disease

Over two-thirds of deaths from respiratory disease were due to COPD with 150 deaths per year on average among Māori. Most other respiratory disease deaths were caused by pneumonia, asthma and bronchiectasis. The rate ratios for asthma and bronchiectasis were very high (4.1 and 6.7 respectively), but COPD had the largest rate difference (15 more deaths per 100,000 among Māori).

Accidents

Transport accidents were the main cause of accidental death among Māori (60%). The rate of fatal transport accidents was 89% higher for Māori than non-Māori. Other accidental deaths were caused by drowning (over twice as high among Māori), falls (38% higher), poisoning (over twice as high). Deaths from accidental suffocation or strangulation in bed occurred mostly in infants, with the Māori rate well over three times the non-Māori rate.

Suicide

On average there were 87 suicides per year among Māori during 2000–2004. The age-sex-standardised rate was 49% higher for Māori than non-Māori. Among Māori most suicides (90%) occurred among those aged under 45 years. Among non-Māori 40% occurred among people aged 45 years and over.

Mortality

Perinatal conditions and unknown causes

Nearly all deaths from unknown causes and from conditions originating in the perinatal period (around birth) were among infants. Premature birth was responsible for half the Māori deaths from perinatal conditions, with Māori infants at 87% higher risk than non-Māori infants. However, during 2000 to 2004 there was a significant downward trend in deaths due to premature birth among Māori.

The majority of deaths from unknown causes were classed as SIDS. During 2000–2004 on average 33 Māori babies died from SIDS each year. However, there was also a significant downward trend in Māori mortality rates during this period (a decrease of 5% per year on average).

Nervous system diseases

Epilepsy, Alzheimer's disease, infantile cerebral palsy and bacterial meningitis made up the majority of deaths in this disease category. There were no differences between Māori and non-Māori mortality rates for epilepsy or Alzheimer's disease, but Māori rates were significantly higher for deaths from infantile cerebral palsy (79% higher) and bacterial meningitis (174% higher).

Renal failure

Renal failure deaths were 3.5 times more common among Māori than non-Māori. There was a significant downward trend in deaths from renal failure among non-Māori but no change among Māori during the 2000–2004 period.

Certain infectious diseases

Deaths from tuberculosis were 6 times more common among Māori than non-Māori. Meningococcal infection mortality was 75% higher among Māori than non-Māori, but there was a significant downward trend in Māori deaths from this disease during 2000 to 2004.

Homicide

On average 22 Māori and 35 non-Māori died per year as a result of homicide. The risk of death for Māori was 3.5 times the risk for non-Māori.

Mental disorders

Māori mortality rates for vascular dementia were lower than non-Māori rates, but deaths due to psychoactive substance use were twice as high. These two causes made up the majority of deaths from mental and behavioural disorders. There was a significant downward trend in the rate of death due to opioids among Māori during 2000 to 2004.

Hauora: Māori Standards of Health IV

Table 4.2: Selected causes of death, all-ages, 2000–2004

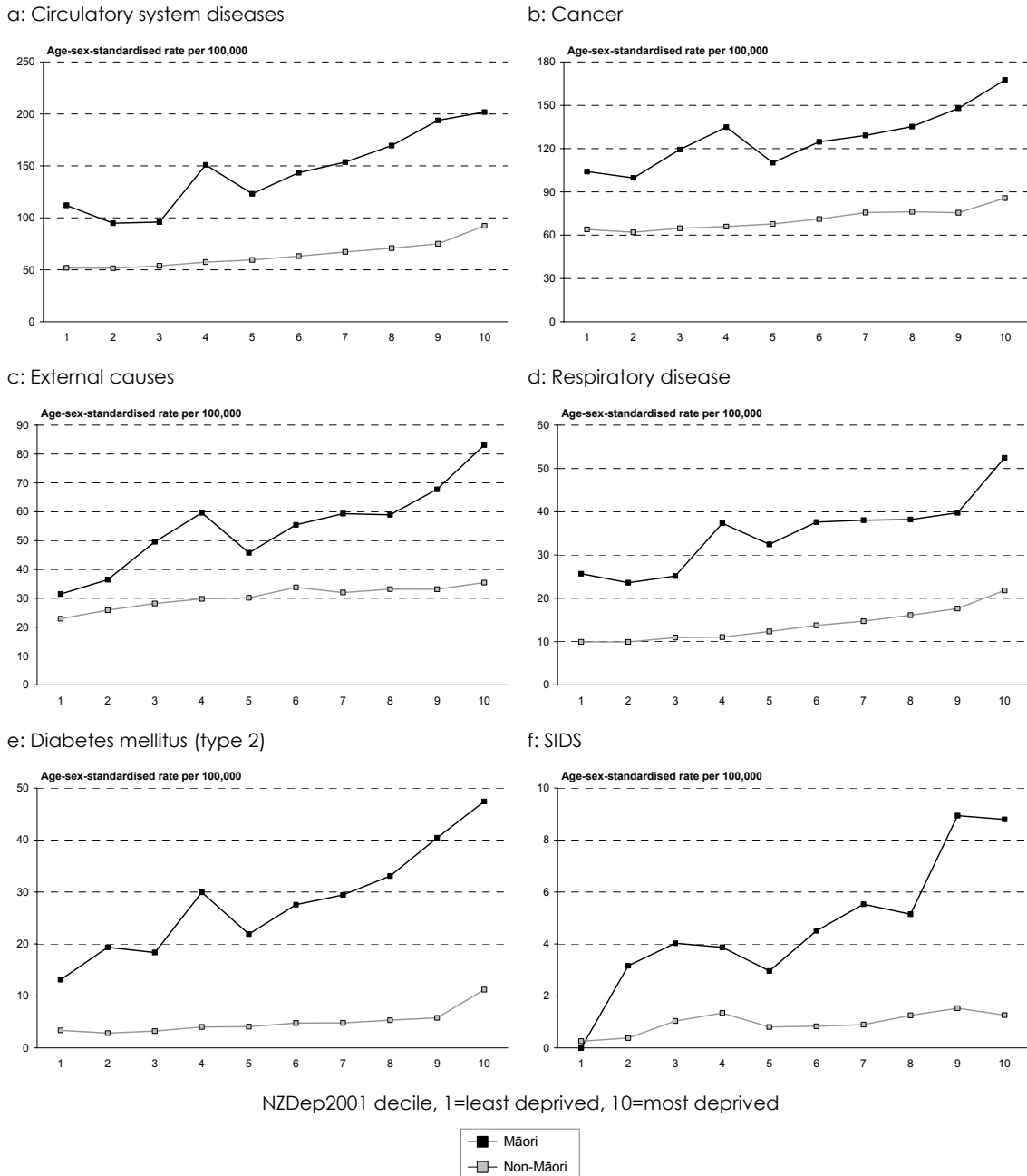
Cause of death	Māori		Non-Māori		Rate ratio (95% CI)
	Number	Rate	Number	Rate	
Circulatory system diseases	4,316	139.8	51,805	61.2	2.29 (2.21–2.36)
Ischaemic heart disease	2,449	80.0	28,688	35.5	2.25 (2.16–2.35)
Stroke	685	21.7	13,092	13.5	1.61 (1.49–1.74)
Chronic rheumatic heart disease	186	6.0	545	0.8	7.46 (6.19–9.00)
Cancer	3,640	119.2	36,372	67.3	1.77 (1.71–1.83)
Lung	1,127	36.8	6,206	11.4	3.23 (3.03–3.45)
Breast: female	344	21.3	2,806	12.4	1.71 (1.53–1.92)
Colorectal	254	8.4	5,481	9.4	0.89 (0.78–1.01)
Stomach	213	7.0	1,316	2.4	2.97 (2.56–3.45)
Endocrine, nutritional, metabolic	1,082	35.4	4,069	6.8	5.20 (4.83–5.59)
Diabetes (type 2)	825	27.0	2,738	3.6	7.40 (6.81–8.03)
Diabetes (type 1)	80	2.6	436	0.9	2.88 (2.24–3.69)
Obesity	105	3.5	206	0.6	5.43 (4.25–6.94)
Respiratory diseases	1,037	33.8	10,658	13.1	2.59 (2.42–2.76)
COPD	759	24.7	7,453	9.3	2.65 (2.45–2.86)
Pneumonia	98	3.3	1,940	1.8	1.86 (1.50–2.31)
Asthma	79	2.6	286	0.6	4.10 (3.12–5.40)
Bronchiectasis	64	2.1	193	0.3	6.70 (4.88–9.21)
Accidents	1,030	34.6	4,521	17.8	1.94 (1.81–2.08)
Transport	642	21.5	2,166	11.4	1.89 (1.72–2.06)
Drowning	83	2.8	215	1.3	2.15 (1.65–2.79)
Falls	82	2.7	1,453	2.0	1.38 (1.10–1.75)
Poisoning	56	1.9	142	0.8	2.40 (1.74–3.29)
Suffocation in bed	39	1.3	30	0.3	3.87 (2.38–6.28)
Suicide	437	14.8	2,004	10.0	1.49 (1.34–1.65)
Digestive system diseases	235	7.6	3,568	4.7	1.61 (1.40–1.84)
Perinatal conditions	224	7.6	517	6.4	1.19 (1.01–1.39)
Premature birth	103	3.5	151	1.9	1.87 (1.46–2.40)
Unknown causes	221	7.5	328	1.5	4.98 (4.04–6.14)
SIDS	166	5.7	77	1.0	5.94 (4.53–7.79)
Nervous system diseases	183	5.9	4,290	7.1	0.83 (0.71–0.97)
Epilepsy	42	1.4	250	1.2	1.17 (0.84–1.64)
Alzheimer's disease	38	1.1	1,875	1.4	0.77 (0.55–1.07)
Genitourinary system diseases	174	5.7	1,685	1.8	3.19 (2.71–3.76)
Renal failure	101	3.3	1,035	1.0	3.51 (2.84–4.34)
Congenital anomalies	161	5.4	761	6.0	0.91 (0.76–1.08)
Certain infectious diseases	137	4.5	665	2.0	2.22 (1.82–2.72)
Tuberculosis	29	0.9	80	0.1	6.39 (3.96–10.33)
Meningococcal infection	23	0.8	53	0.4	1.75 (1.06–2.90)
Homicide	109	3.6	175	1.0	3.52 (2.74–4.52)
Mental disorders	103	3.3	3,434	3.1	1.06 (0.86–1.30)
Vascular dementia	53	1.6	3,099	2.2	0.75 (0.57–1.00)
Psychoactive substance use	38	1.3	177	0.7	1.98 (1.38–2.84)

Note: Rates are calculated per 100,000 and were age-sex-standardised to the 2001 Māori population. Rates for female breast cancer are sex-specific

Mortality

Selected causes of death by deprivation

Figure 4.4: Māori and non-Māori deaths by deprivation, selected causes, 2000–2004



Note: Rates were age-sex-standardised to the 2001 Māori population.

Figure 4.4 presents age-sex-standardised mortality rates by deprivation for selected causes of death during the period 2000 to 2004. The risk of death increased with increasing deprivation among both Māori and non-Māori for these major causes of death. For deaths from circulatory disease, cancer, diabetes, and respiratory disease, the mortality rate among Māori living in the *least* deprived deciles was higher than that of non-Māori living in the *most* deprived deciles.

The association between deprivation and mortality was strongest among Māori for deaths from SIDS, with the risk increasing by 19% per successive decile, and non-

Hauora: Māori Standards of Health IV

insulin dependent diabetes (13% per decile). There was also a clear relationship with deaths from external causes (9% per decile), circulatory disease (9% per decile), cancer (6% per decile) and respiratory disease (8% per decile).

Among males, the higher proportion of Māori living in deprived areas accounted for 20% of the difference in deaths from SIDS, 18% of the difference in deaths from diabetes and 12% for respiratory disease deaths.

Among females, socioeconomic deprivation accounted for around 7% of the disparities in deaths from external causes and respiratory disease, 12% of the difference in type 2 diabetes mortality and 23% of the SIDS disparity. For circulatory disease and cancer mortality adjusting for deprivation reduced the female rate ratio by only 4% (Table 4.3).

Table 4.3: Māori/non-Māori mortality rate ratios adjusted for age and deprivation, 2000–2004

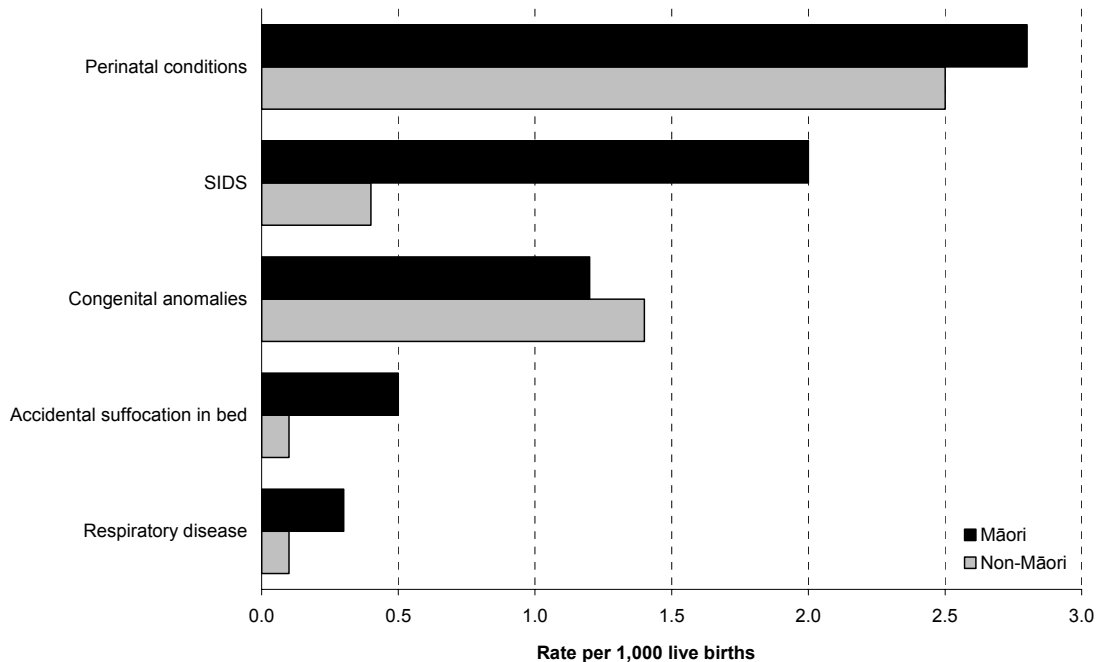
Cause of death	Sex	Rate ratio adjusted for age (95% CI)	Rate ratio adjusted for age and NZDep2001 decile (95% CI)	Area deprivation contribution (%)
Circulatory disease	Female	2.64 (2.05–3.41)	2.55 (2.33–2.78)	4
	Male	2.52 (2.07–3.08)	2.31 (2.14–2.49)	9
Cancer	Female	2.13 (1.94–2.33)	2.04 (1.93–2.15)	4
	Male	1.87 (1.78–1.97)	1.76 (1.66–1.87)	6
External causes	Female	2.16 (1.90–2.45)	2.00 (1.78–2.24)	7
	Male	2.03 (1.90–2.17)	1.89 (1.76–2.02)	7
Diabetes (type 2)	Female	7.95 (7.05–8.96)	7.03 (5.98–8.26)	12
	Male	7.94 (7.11–8.86)	6.52 (5.66–7.52)	18
Respiratory disease	Female	3.24 (2.55–4.12)	2.96 (2.64–3.33)	8
	Male	2.61 (2.38–2.87)	2.31 (2.04–2.62)	12
SIDS	Female	8.42 (5.28–13.42)	6.49 (3.67–11.48)	23
	Male	5.62 (4.02–7.84)	4.48 (3.11–6.43)	20

Note: Rate ratios were calculated using Poisson regression – see Methods Appendix 1.

Major causes of death by age group

Infants (aged under 1 year)

Figure 4.5: Major causes of infant death, 2000–2004



During 2000–2004 there were 130 deaths per year on average among Māori infants aged less than one year and 200 deaths per year among non-Māori infants. The risk of death among Māori infants was nearly two-thirds higher than that of non-Māori infants (8.1 per 1,000 live births compared to 5.0 per 1,000 live births) (Table 4.4).

A third of the deaths among Māori babies were due to perinatal conditions, with premature birth the main cause. During the five-year period there was a significant downward trend in Māori rates of death from premature birth, decreasing by 9% per year on average.

The cause of death was unknown for 30% of Māori infants with the majority classified as sudden infant death syndrome (SIDS). The SIDS rate for Māori infants was 2.0 deaths per 1,000 live births, over five times the non-Māori rate of 0.4 per 1,000 live births, accounting for half the overall mortality disparity. Male babies had a higher risk of death from SIDS than female babies. Nevertheless, the rate among Māori females was over three times that of non-Māori males. There was a significant downward trend in the rate of death from SIDS during the five years, decreasing by 5% per year on average. However, some of this may be due to a shift in category to accidental suffocation in bed, which showed a non-significant increase.

Congenital anomalies was the third leading cause of death among Māori infants and second leading cause among non-Māori, with no significant difference between the rates.

Hauora: Māori Standards of Health IV

Accidental suffocation and strangulation in bed was the fourth leading cause of death, responsible for 6% of all Māori infant deaths. The rate of death was four times higher among Māori infants than non-Māori, accounting for 13% of the total disparity.

Respiratory diseases were the fifth leading cause of infant death among Māori, the majority caused by pneumonia. The rate of death was four times higher for Māori than for non-Māori.

Table 4.4: Major causes of death, infants aged under 1 year, 2000–2004

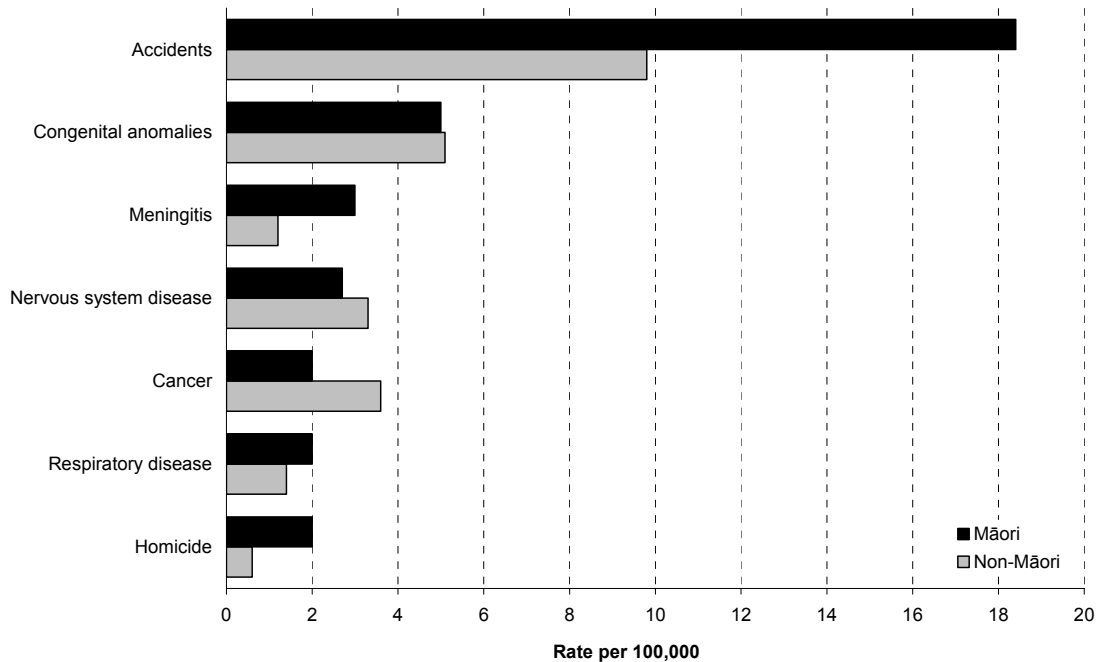
Cause of death	Māori			Non-Māori			Rate ratio
	Total number	Rate	Rank	Total number	Rate	Rank	
Total: all causes	644	8.1		1,018	5.0		1.64
Perinatal conditions	221	2.8	1	514	2.5	1	1.11
• Premature birth	103	1.3		151	0.7		1.76
Unknown causes	192	2.4	2	84	0.4	3	5.91
• Sudden infant death syndrome	162	2.0		74	0.4		5.66
Congenital anomalies	93	1.2	3	281	1.4	2	0.86
Accidents	54	0.7	4	34	0.2	4	4.10
• Accidental suffocation in bed	38	0.5		23	0.1		4.27
Respiratory diseases	27	0.3	5	17	0.1	7	4.11
• Pneumonia	19	0.2		9	0.0		5.46
• Acute bronchitis and bronchiolitis	5	0.1		3	0.0		4.31
Female: all causes	276	7.2		459	4.6		1.56
Perinatal conditions	89	2.3	1	238	2.4	1	0.97
• Premature birth	47	1.2		76	0.8		1.61
• Birth asphyxia	5	0.1		18	0.2		0.72
Unknown causes	87	2.3	2	28	0.3	3	8.08
• Sudden infant death syndrome	67	1.7		22	0.2		7.92
Congenital anomalies	38	1.0	3	131	1.3	2	0.75
Accidents	25	0.7	4	15	0.2	4	4.33
• Accidental suffocation in bed	20	0.5		12	0.1		4.33
Respiratory diseases	15	0.4	5	6	0.1	7	6.50
• Pneumonia	11	0.3		5	0.05		5.72
Male: all causes	367	9.0		559	5.3		1.69
Perinatal conditions	132	3.3	1	276	2.6	1	1.23
• Premature birth	56	1.4		75	0.7		1.92
• Birth asphyxia	9	0.2		14	0.1		1.66
Unknown causes	119	3.0	2	79	0.8	3	3.90
• Sudden infant death syndrome	95	2.3		52	0.5		4.70
Congenital anomalies	54	1.3	3	150	1.4	2	0.93
Accidents	29	0.7	4	19	0.2	4	3.93
• Accidental suffocation in bed	18	0.4		11	0.1		4.21
Respiratory diseases	12	0.3	5	11	0.1	6	2.81
• Pneumonia	8	0.2		4	0.04		5.15

Notes: Rates are calculated per 1,000 live births; shaded rate ratios are statistically significant at the 5% level.

Mortality

Ages 1–4 years

Figure 4.6: Major causes of death among children aged 1–4 years, 2000–2004



During 2000–2004 there were 24 deaths per year on average among Māori children aged 1–4 years and 50 deaths per year among non-Māori children. The rate of death among Māori children was a third higher than that of non-Māori children (Table 4.5).

The majority of deaths in this age group were caused by accidents. Accidental injury accounted for 45% of the Māori deaths and 33% of the non-Māori deaths. Drowning, pedestrian accidents, motor vehicle accidents and fires were the main causes of accidental death. Māori children had significantly higher rates of death from these causes than non-Māori children, with the exception of pedestrian accidents. Deaths from accidents accounted for most of the mortality disparity between Māori and non-Māori children in this age group.

Congenital anomalies were the second leading cause of death for Māori children, at a rate similar to that of non-Māori children. Infectious and parasitic diseases were the third leading cause of death for Māori. Meningococcal infection was responsible for the deaths of nine Māori children in this age group, at a rate 2.5 times that of non-Māori. Diseases of the nervous system (half of which were infantile cerebral palsy) were the fourth most common cause of death among Māori children. Cancer and homicide were the fifth leading causes of death for Māori. Five Māori boys died from unknown causes.

Hauora: Māori Standards of Health IV

Table 4.5: Major causes of death, ages 1–4 years, 2000–2004

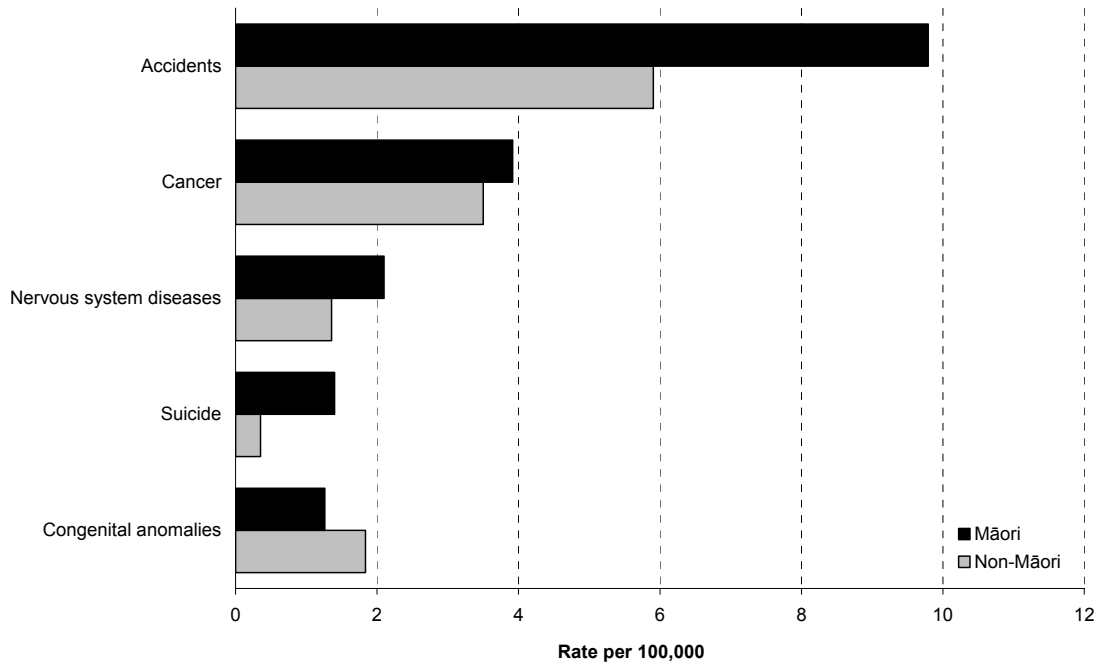
Cause of death	Māori			Non-Māori			Rate ratio
	Number	Rate	Rank	Number	Rate	Rank	
Total: all causes	122	40.9		249	30.1		1.36
Accidents	55	18.4	1	81	9.8	1	1.88
• Drowning	19	6.4		23	2.8		2.29
• Pedestrian	13	4.4		20	2.4		1.80
• Motor vehicle (land)	11	3.7		12	1.4		2.54
• Fires	7	2.3		6	0.7		3.23
Congenital anomalies	15	5.0	2	42	5.1	2	0.99
Infectious diseases	11	3.7	3	21	2.5	5	1.45
• Meningococcal infection	9	3.0		10	1.2		2.49
Nervous system diseases	8	2.7	4	27	3.3	4	0.82
• Infantile cerebral palsy	5	1.7		9	1.1		1.54
Cancer	6	2.0	5=	30	3.6	3	0.55
Homicide	6	2.0	5=	5	0.6	11	3.33
Female: all causes	52	35.9		120	29.7		1.21
Accidents	25	17.3	1	32	7.9	1	2.18
• Drowning	11	7.6		9	2.2		3.41
• Pedestrian	6	4.1		11	2.7		1.52
• Motor vehicle (land)	5	3.5		3	0.7		4.65
Congenital anomalies	7	4.8	2	23	5.7	2	0.85
Infectious diseases	5	3.5	3	11	2.7	5	1.27
• Meningococcal infection	3	2.1		5	1.2		1.67
Nervous system diseases	4	2.8	4	14	3.5	4	0.80
• Infantile cerebral palsy	3	2.1		4	1.0		2.09
Respiratory diseases	3	2.1	5	5	1.2	8	1.67
Male: all causes	70	45.6		129	30.4		1.50
Accidents	30	19.5	1	49	11.6	1	1.69
• Drowning	8	5.2		14	3.3		1.58
• Pedestrian	7	4.6		9	2.1		2.14
• Motor vehicle (land)	6	3.9		9	2.1		1.84
• Fires	5	3.3		5	1.2		2.76
Congenital anomalies	8	5.2	2	19	4.5	2	1.16
Infectious diseases	6	3.9	3	10	2.4	5	1.65
• Meningococcal infection	6	3.9		5	1.2		3.31
Cancer	5	3.3	4	16	3.8	3	0.86
• Leukaemias	2	1.3		3	0.7		1.84
• Brain	2	1.3		6	1.4		0.92
Unknown causes	5	3.3	5	2	0.5	9	6.89

Notes: Rates are calculated per 100,000; shaded rate ratios are statistically significant at the 5% level.

Mortality

Ages 5–14 years

Figure 4.7: Major causes of death among Māori aged 5–14 years, 2000–2004



During 2000 to 2004 there were 32 deaths per year on average among Māori children and 71 among non-Māori children. The mortality rate among Māori children was 47% higher than that of non-Māori children. The risk of death was higher for boys than girls, 28% higher among Māori and 44% higher among non-Māori (Table 4.6).

Accidents caused over 40% of the deaths among children in this age group.

Approximately five Māori children a year died in motor vehicle accidents and three in pedestrian accidents. Drowning was the other main cause of accidental death. Fatal accidents were two-thirds more common among Māori children than among non-Māori children, accounting for half of the overall mortality disparity.

Cancer was the second most common cause of death, causing nearly 6 deaths per year among Māori children and 16 per year among non-Māori children. Brain cancer and leukaemias constituted 75% of the Māori cancer deaths. There was no difference in the overall cancer death rate for Māori and non-Māori children.

Diseases of the nervous system, the third major cause of death among Māori children, were mostly due to infantile cerebral palsy and epilepsy.

An average of two Māori children per year (all aged between 10 and 14 years) died from suicide. The rate of suicide was four times higher among Māori than among non-Māori children.

Congenital anomalies was the fifth leading cause of death, with no significant difference in rates between Māori and non-Māori children.

Hauora: Māori Standards of Health IV

Table 4.6: Major causes of death, ages 5–14 years, 2000–2004

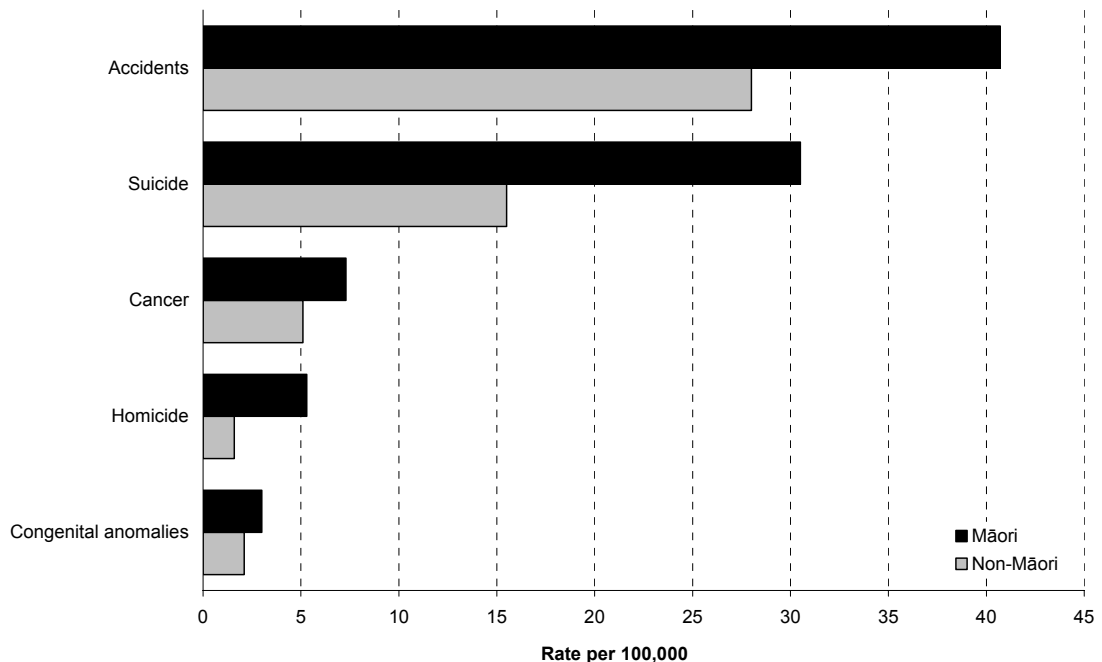
Cause of death	Māori			Non-Māori			Rate ratio
	Total number	Rate	Rank	Total number	Rate	Rank	
Total: all causes	162	22.7		353	15.4		1.47
Accidents	70	9.8	1	135	5.9	1	1.66
• Motor vehicle (land)	24	3.4		46	2.0		1.67
• Pedestrian	13	1.8		23	1.0		1.81
• Drowning	12	1.7		16	0.7		2.40
Cancer	28	3.9	2	80	3.5	2	1.12
• Brain	15	2.1		26	1.1		1.84
• Leukaemias	6	0.8		22	1.0		0.87
Nervous system diseases	15	2.1	3	31	1.4	4	1.55
• Infantile cerebral palsy	7	1.0		14	0.6		1.60
• Epilepsy	4	0.6		9	0.4		1.42
Suicide	10	1.4	4	8	0.4	8	4.00
Congenital anomalies	9	1.3	5	42	1.8	3	0.69
Female: all causes	69	19.8		140	12.6		1.57
Accidents	29	8.3	1	45	4.1	1	2.05
• Motor vehicle (land)	12	3.4		22	2.0		1.74
• Pedestrian	5	1.4		4	0.4		3.98
• Drowning	5	1.4		3	0.3		5.31
Cancer	17	4.9	2	31	2.8	2	1.75
• Brain	9	2.6		8	0.7		3.59
• Leukaemia	4	1.1		11	1.0		1.16
Nervous system diseases	5	1.4	3	15	1.4	4	1.06
• Infantile cerebral palsy	3	0.9		8	0.7		1.20
Congenital anomalies	5	1.4	4	16	1.4	3	1.00
Suicide	3	0.9	5	3	0.3	8	3.19
Male: all causes	93	25.4		213	18.1		1.40
Accidents	41	11.2	1	90	7.7	1	1.46
• Motor vehicle (land)	12	3.3		24	2.0		1.60
• Pedestrian	8	2.2		19	1.6		1.35
• Drowning	7	1.9		13	1.1		1.73
Cancer	11	3.0	2	49	4.2	2	0.72
Nervous system diseases	10	2.7	3	16	1.4	4	2.01
• Infantile cerebral palsy	4	1.1		6	0.5		2.14
• Epilepsy	3	0.8		6	0.5		1.60
Suicide	7	1.9	4	5	0.4	8	4.49

Notes: Rates are calculated per 100,000; shaded rate ratios are statistically significant at the 5% level.

Mortality

Ages 15–24 years

Figure 4.8: Major causes of death among Māori aged 15–24 years, 2000–2004



During 2000–2004 there were 108 deaths per year on average among Māori aged 15–24 years and 284 deaths per year among non-Māori. Young Māori adults had a 60% higher risk of death than their non-Māori counterparts (38 more deaths per 100,000). Males had twice the risk of death compared to females in both groups (Table 4.7).

Accidents caused 40% of Māori deaths in this age group. The majority were motor vehicle accidents. The rate of accidental death was 45% higher for Māori than non-Māori, accounting for a third of the overall mortality disparity.

Youth suicide was the second most common cause of death, twice as frequent among Māori as among non-Māori, accounting for 40% of the total mortality disparity. The risk of suicide was more than twice as high among males as among females.

Cancer was the third leading cause of death. Leukaemia was the most common cause of cancer death in this age group, followed by soft tissue cancers. Rates of death from cancer were 43% higher for Māori than non-Māori.

Homicide was the fourth most frequent cause of death for Māori in this age group, more frequent among males than females. Māori were at greater risk of death from homicide, with three times the mortality rate of non-Māori, accounting for 10% of the overall disparity.

Other main causes of death included congenital anomalies and circulatory system disease. There were no significant differences between Māori and non-Māori for these causes.

Hauora: Māori Standards of Health IV

Table 4.7: Major causes of death, ages 15–24 years, 2000–2004

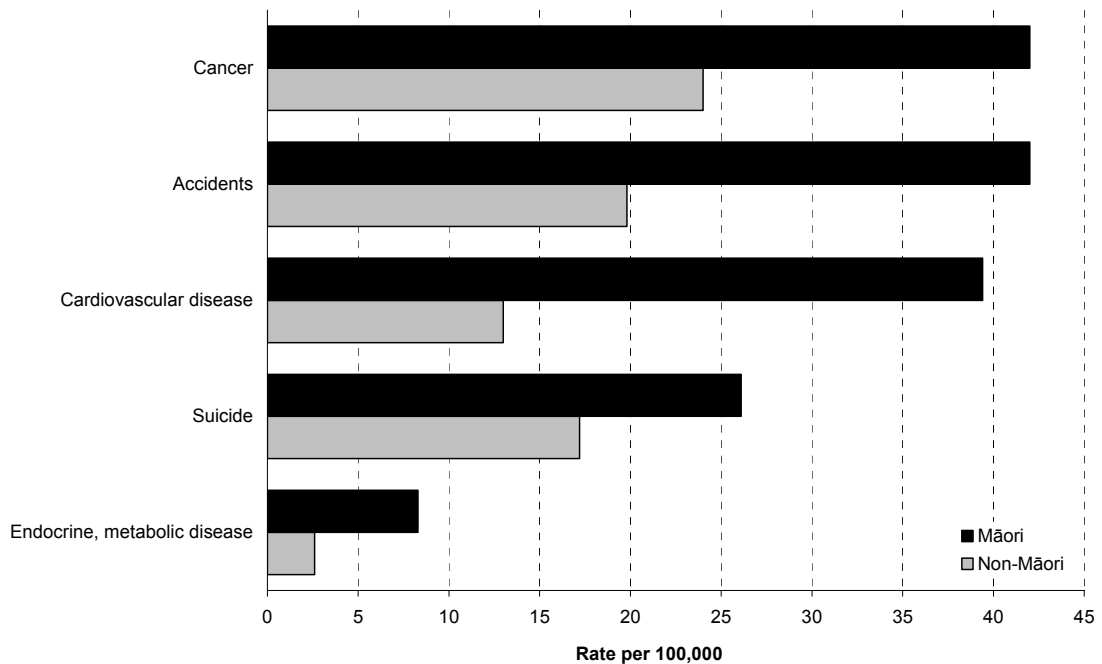
Cause of death	Māori			Non-Māori			Rate ratio
	Number	Rate	Rank	Number	Rate	Rank	
Total: all causes	538	101.3		1,422	63.4		1.60
Accidents	216	40.7	1	628	28.0	1	1.45
• Motor vehicle (land)	150	28.3		430	19.2		1.47
• Pedestrian	18	3.4		32	1.4		2.38
• Poisoning	17	3.2		28	1.2		2.57
Suicide	162	30.5	2	348	15.5	2	1.97
Cancer	39	7.3	3	115	5.1	3	1.43
• Leukaemias	10	1.9		20	0.9		2.11
• Soft tissue	6	1.1		7	0.3		3.62
Homicide	28	5.3	4	35	1.6	8	3.38
Congenital anomalies	16	3.0	5	47	2.1	6	1.44
Females: all causes	168	62.9		401	36.5		1.72
Accidents	62	23.2	1	142	12.9	1	1.80
• Motor vehicle (land)	46	17.2		110	10.0		1.72
• Poisoning	8	3.0		11	1.0		2.99
Suicide	47	17.6	2	82	7.5	2	2.36
Cancer	14	5.2	3	50	4.6	3	1.15
Congenital anomalies	8	3.0	4	21	1.9	4	1.57
Homicide	7	2.6	5	14	1.3	8	2.06
Males: all causes	370	140.2		1,021	89.1		1.57
Accidents	154	58.3	1	486	42.4	1	1.38
• Motor vehicle (land)	104	39.4		320	27.9		1.41
• Pedestrian	16	6.1		24	2.1		2.89
• Poisoning	9	3.4		17	1.5		2.30
Suicide	115	43.6	2	266	23.2	2	1.88
Cancer	25	9.5	3	65	5.7	3	1.67
Homicide	21	8.0	4	21	1.8	7	4.34
Circulatory system diseases	13	4.9	5	35	3.1	5	1.61

Notes: Rates are calculated per 100,000; shaded rate ratios are statistically significant at the 5% level.

Mortality

Ages 25–44 years

Figure 4.9: Major causes of death among Māori aged 25–44 years, 2000–2004



There were 325 deaths a year on average among Māori aged 25–44 years and around 920 among non-Māori during 2000 to 2004. The rate of death among Māori was twice the non-Māori rate. Males had an 80% higher risk of death than females among Māori and 90% higher risk among non-Māori (Table 4.8).

Cancer, accidents, and circulatory system diseases caused around a fifth each of Māori deaths and suicide a further 14%. Circulatory system disease accounted for over a quarter of the difference in overall mortality rates between Māori and non-Māori in this age group, accidents and cancer around a fifth each and suicide nearly a tenth.

Cancer mortality was 75% higher for Māori than non-Māori. On average there were 72 cancer deaths per year among Māori. Breast cancer was the most common cause of cancer death for Māori women with 16 deaths per year on average, a rate 75% higher than that of non-Māori. Deaths from cancer of the lung, stomach and cervix were also more common for Māori women compared to non-Māori women. The leading causes of cancer death among Māori men aged 25–44 years were cancers of the lung, stomach, liver, testis and non-Hodgkin’s lymphoma. Mortality rates were higher for Māori males than non-Māori males for these causes.

Transport accidents (mainly motor vehicle) were responsible for two-thirds of accidental deaths among Māori, followed by drowning and poisoning (8% each). Māori rates of death from these causes were more than twice the non-Māori rates.

Deaths from circulatory system diseases were three times more frequent among Māori than non-Māori. Among Māori males the majority of deaths (55%) were due to ischaemic heart disease, but among females stroke was the most common followed by

Hauora: Māori Standards of Health IV

ischaemic heart disease and chronic rheumatic heart disease. Māori were nearly nine times more likely than non-Māori to die from chronic rheumatic heart disease in this age group.

The rate of suicide among Māori was 52% higher than the non-Māori rate. Suicides were four times more common among males than females. Among males the rate in this age group was similar to that of 15–24 year olds.

Other major causes of death among Māori aged 25–44 years included obesity, diabetes, and respiratory disease (including chronic obstructive pulmonary disease, asthma and bronchiectasis) and homicide. The mortality rate ratios for these diseases were very high, although the rate differences were not large compared to the other main causes.

Table 4.8: Major causes of death, ages 25–44 years, 2000–2004

Cause of death	Māori			Non-Māori			Rate ratio
	Number	Rate	Rank	Number	Rate	Rank	
Total: all causes	1,623	189.8		4,590	92.8		2.05
Accidents	359	42.0	1	977	19.8	2	2.13
• Transport accidents	237	27.7		671	13.6		2.04
• Drowning	30	3.5		69	1.4		2.51
• Poisoning	30	3.5		66	1.3		2.63
Cancer	359	42.0	2	1,185	24.0	1	1.75
• Breast: female	79	17.6		256	10.1		1.75
• Lung	40	4.7		90	1.8		2.57
• Stomach	36	4.2		44	0.9		4.73
• Colorectal	20	2.3		95	1.9		1.22
• Liver	20	2.3		25	0.5		4.63
Circulatory system	337	39.4	3	642	13.0	4	3.04
• Ischaemic heart disease	146	17.1		305	6.2		2.77
• Stroke	58	6.8		134	2.7		2.50
• Chronic rheumatic heart disease	41	4.8		27	0.5		8.78
Suicide	223	26.1	4	849	17.2	3	1.52
Endocrine, metabolic, nutritional	71	8.3	5	127	2.6	6	3.23
• Obesity	37	4.3		37	0.7		5.78
• Diabetes mellitus	27	3.2		52	1.1		3.00
Respiratory disease	59	6.9		84	1.7	8	4.06
• COPD	20	2.3		16	0.3		7.23
• Asthma	17	2.0		36	0.7		2.73
• Bronchiectasis	14	1.6		7	0.1		11.57
Homicide	47	5.5		58	1.2	12	4.69

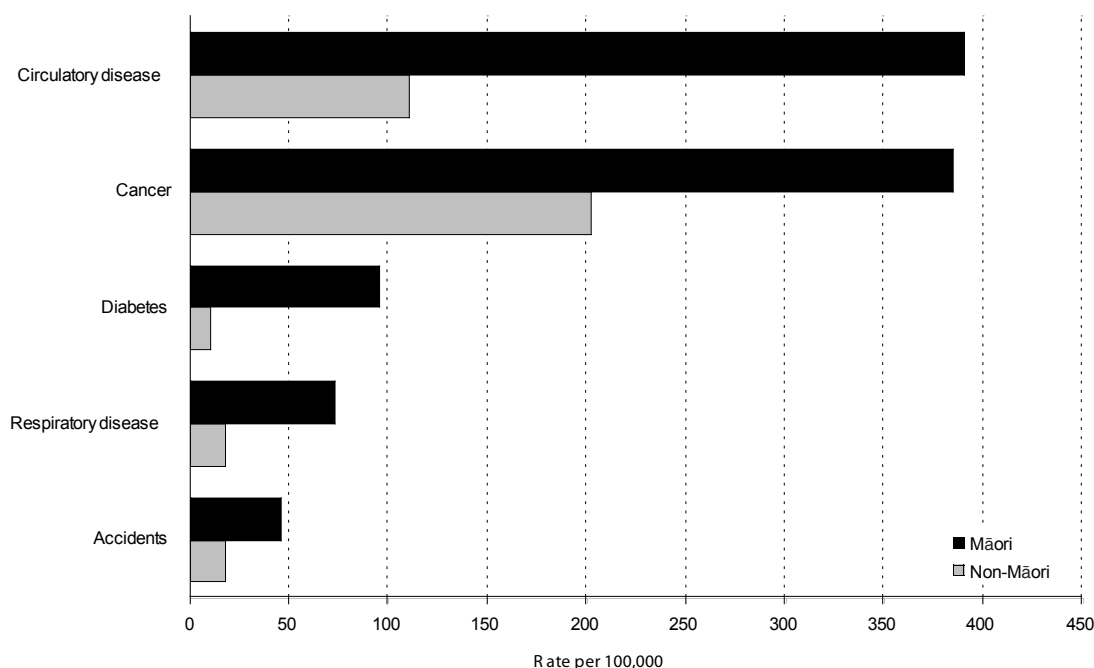
Mortality

Cause of death	Māori			Non-Māori			Rate ratio
	Number	Rate	Rank	Number	Rate	Rank	
Females: all causes	621	138.4		1,638	64.4		2.15
Cancer	220	49.0	1	705	27.7	1	1.77
• Breast	79	17.6		256	10.1		1.75
• Lung	22	4.9		50	2.0		2.49
• Stomach	20	4.5		15	0.6		7.56
• Cervix	19	4.2		37	1.5		2.91
Circulatory system diseases	123	27.4	2	182	7.2	4	3.83
• Stroke	37	8.2		64	2.5		3.28
• Ischaemic heart disease	28	6.2		46	1.8		3.45
• Chronic rheumatic heart	23	5.1		11	0.4		11.85
Accidents	88	19.6	3	206	8.1	2	2.42
• Transport accidents	61	13.6		161	6.3		2.15
• Poisoning	10	2.2		19	0.7		2.98
Suicide	45	10.0	4	184	7.2	3	1.39
Endocrine, nutritional, metabolic	30	6.7	5	47	1.8	6	3.62
• Diabetes mellitus	14	3.1		21	0.8		3.78
• Obesity	12	2.7		15	0.6		4.53
Homicide	16	3.6		19	0.7	12	4.77
Males: all causes	1,002	246.5		2,952	122.9		2.01
Accidents	271	66.7	1	771	32.1	1	2.08
• Transport accidents	176	43.3		510	21.2		2.04
• Drowning	26	6.4		64	2.7		2.40
Suicide	178	43.8	2	665	27.7	2	1.58
Circulatory system diseases	214	52.7	3	460	19.1	4	2.75
• Ischaemic heart disease	118	29.0		259	10.8		2.69
• Stroke	21	5.2		70	2.9		1.77
• Chronic rheumatic heart disease	18	4.4		16	0.7		6.65
Cancer	139	34.2	4	480	20.0	3	1.71
• Lung	18	4.4		40	1.7		2.66
• Stomach	16	3.9		29	1.2		3.26
• Liver	16	3.9		19	0.8		4.98
• Testis	11	2.7		15	0.6		4.34
• Non-Hodgkin's lymphoma	11	2.7		30	1.2		2.17
Endocrine, nutritional, metabolic	41	10.1	5	80	3.3	6	3.03
• Obesity	25	6.2		22	0.9		6.72
• Diabetes mellitus	13	3.2		31	1.3		2.48
Homicide	31	7.6		39	1.6	12	4.70

Notes: Rates are calculated per 100,000; shaded rate ratios are statistically significant at the 5% level.

Ages 45–64 years

Figure 4.10: Major causes of death among Māori aged 45–64 years, 2000–2004



During the years 2000–2004 there were 885 deaths per year on average among Māori aged 45 to 64 years and 3,350 among non-Māori. The rate of death among Māori was 2.6 times the non-Māori rate. Chronic diseases were the main causes of death for this age group. Just over a third of Māori deaths were caused by circulatory system disease, another third were due to cancer. Diabetes was the underlying cause of death for 9% and respiratory disease for 7%. Accidental deaths constituted 4% of Māori deaths.

Deaths from circulatory disease were 3.5 times more common among Māori than non-Māori in this age group. Ischaemic heart disease was the leading single cause of death for Māori and accounted for a quarter of the overall difference in mortality between Māori and non-Māori. On average, 190 Māori per year died from ischaemic heart disease (heart attacks), 41 from stroke and 19 from chronic rheumatic heart disease. Extreme disparities between Māori and non-Māori were evident in deaths from chronic rheumatic heart disease (over 14 times more frequent among Māori than non-Māori) and hypertensive disease (over eight times more frequent). Increasing area deprivation was strongly associated with increasing mortality for each circulatory system disease.

Cancer was the leading cause of death among Māori females and the second leading cause among Māori males. A third of the cancer deaths among Māori were from lung cancer, at a rate 3.7 times the non-Māori rate, accounting for half the cancer mortality disparity. Breast cancer was the second leading cause of cancer death, 66% more common among Māori than non-Māori women. Liver cancer was the second most frequent cause of cancer death among Māori men, with a mortality rate nearly seven times that of non-Māori men. Colorectal cancer was the third most frequent cause of cancer death among Māori males and females, at rates similar to non-Māori. Cervical cancer was the fourth most common cancer death for Māori females, at three times the non-Māori rate. Stomach cancer was the fourth most frequent cause of cancer death among Māori males, with a rate 2.4 times the non-Māori rate.

Mortality

Diabetes was the most common cause of death from endocrine, nutritional and metabolic disease. Deaths from diabetes were nine times more frequent among Māori than non-Māori, accounting for 12% of the overall mortality disparity. On average, 35 Māori females and 43 Māori males aged 45 to 64 years died from diabetes each year during 2000 to 2004.

Respiratory disease mortality was four times higher among Māori than non-Māori. Chronic obstructive pulmonary disease (COPD) was the most common cause of death, with 46 Māori deaths per year on average, followed by asthma (seven deaths per year), bronchiectasis (four deaths per year) and pneumonia (three deaths per year). Māori mortality from COPD was four times higher than that of non-Māori (an extra 42 deaths per 100,000). Asthma and bronchiectasis mortality were seven times higher.

The rate of accidental death was 2.5 times higher for Māori than for non-Māori. Two-thirds were caused by transport accidents.

Table 4.9: Major causes of death, ages 45–64 years, 2000–2004

Cause of death	Māori			Non-Māori			Rate ratio
	Number	Rate	Rank	Number	Rate	Rank	
Total: all causes	4,428	1,082.4		16,758	417.6		2.59
Circulatory system diseases	1,598	390.6	1	4,444	110.8	2	3.53
• Ischaemic heart disease	958	234.2		2,872	71.6		3.27
• Stroke	203	49.6		761	19.0		2.62
• Chronic rheumatic heart disease	96	23.5		61	1.5		15.44
• Hypertensive diseases	57	13.9		67	1.7		8.34
Cancer	1,574	384.8	2	8,113	202.2	1	1.90
• Lung	533	130.3		1,420	35.4		3.68
• Breast: female	177	84.0		1,023	50.6		1.66
• Colorectal	115	28.1		1,182	29.5		0.95
• Liver	84	20.5		159	4.0		5.18
• Stomach	77	18.8		294	7.3		2.57
Endocrine, nutritional and metabolic	469	114.6	3	614	15.3	5	7.49
• Diabetes mellitus	390	95.3		421	10.5		9.09
• Obesity	52	12.7		93	2.3		5.48
Respiratory diseases	300	73.3	4	723	18.0	4	4.07
• COPD	228	55.7		548	13.7		4.08
• Asthma	34	8.3		47	1.2		7.10
• Bronchiectasis	19	4.6		26	0.6		7.17
• Pneumonia	15	3.7		50	1.2		2.94
Accidents	188	46.0	5	731	18.2	3	2.52
• Transport accidents	122	29.8		479	11.9		2.50
• Falls	25	6.1		79	2.0		3.10

Hauora: Māori Standards of Health IV

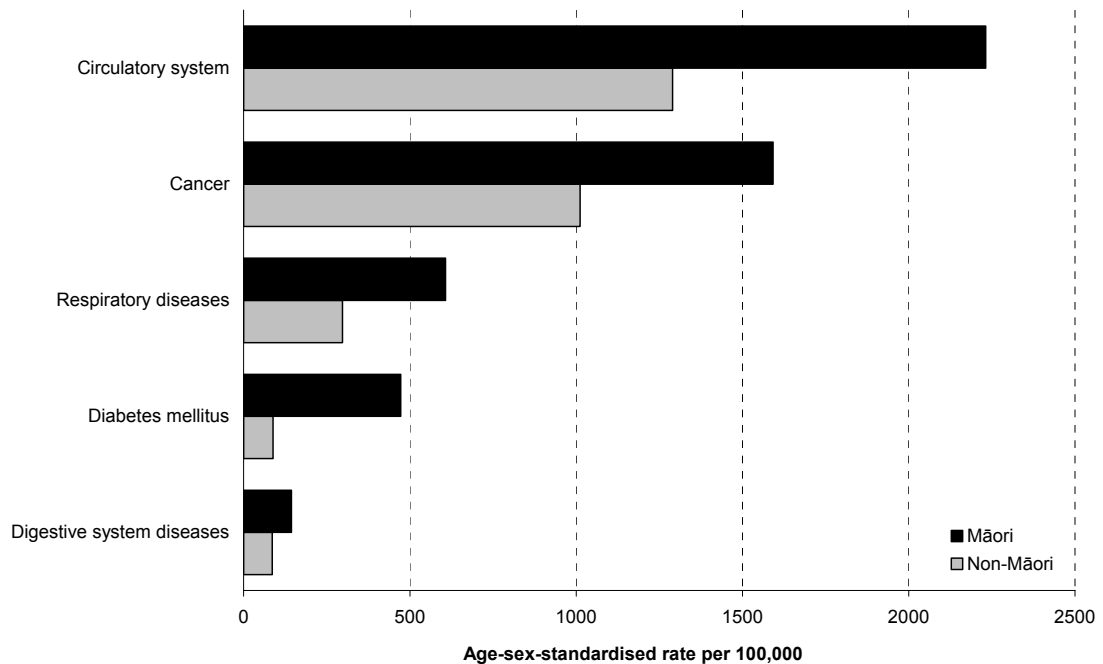
Cause of death	Māori			Non-Māori			Rate ratio
	Number	Rate	Rank	Number	Rate	Rank	
Females: all causes	1,955	927.6		6,890	340.7		2.72
Cancer	831	394.3	1	3,977	196.7	1	2.00
• Lung	287	136.2		609	30.1		4.52
• Breast	177	84.0		1,023	50.6		1.66
• Colorectal	54	25.6		536	26.5		0.97
• Cervix	30	14.2		93	4.6		3.10
Circulatory system	575	272.8	2	1,223	60.5	2	4.51
• Ischaemic heart disease	277	131.4		605	29.9		4.39
• Stroke	122	57.9		348	17.2		3.36
• Chronic rheumatic heart	54	25.6		35	1.7		14.80
• Hypertensive disease	28	13.3		26	1.3		10.33
Endocrine, nutritional, metabolic	201	95.4	3	237	11.7	4	8.14
• Diabetes mellitus	173	82.1		152	7.5		10.92
• Obesity	20	9.5		55	2.7		3.49
Respiratory diseases	185	87.8	4	366	18.1	3	4.85
• COPD	141	66.9		279	13.8		4.85
• Asthma	25	11.9		31	1.5		7.74
Accidents	50	23.7	5	205	10.1	7	2.34
• Transport accidents	33	15.7		141	7.0		2.25
Males: all causes	2,473	1,246.9		9,868	495.8		2.52
Circulatory system	1,023	515.8	1	3,221	161.8	2	3.19
• Ischaemic heart disease	681	343.4		2,267	113.9		3.01
• Stroke	81	40.8		413	20.7		1.97
• Chronic rheumatic heart	42	21.2		26	1.3		16.21
• Hypertensive disease	29	14.6		41	2.1		7.10
Cancer	743	374.6	2	4,136	207.8	1	1.80
• Lung	246	124.0		811	40.7		3.04
• Liver	73	36.8		107	5.4		6.85
• Colorectal	61	30.8		646	32.5		0.95
• Stomach	49	24.7		205	10.3		2.40
Endocrine, nutritional, metabolic	268	135.1	3	377	18.9	4	7.13
• Diabetes mellitus	217	109.4		269	13.5		8.10
• Obesity	32	16.1		38	1.9		8.45
Accidents	138	69.6	4	526	26.4	3	2.63
• Transport accidents	89	44.9		338	17.0		2.64
• Falls	18	9.1		60	3.0		3.01
Respiratory diseases	115	58.0	5	357	17.9	6	3.23
• COPD	87	43.9		269	13.5		3.25

Notes: Rates are calculated per 100,000; shaded rate ratios are statistically significant at the 5% level.

Mortality

Ages 65 years and over

Figure 4.11: Major causes of death among Māori aged 65 years and over, 2000–2004



Note: Rates were age-sex-standardised to the 2001 Māori population.

During 2000–2004 there were 1,150 deaths per year on average among Māori aged 65 years and over, and 20,450 among non-Māori. The age-standardised rate of death among Māori was three-quarters higher than that of non-Māori. Chronic diseases were the main causes of death in this age group (Table 4.10).

Circulatory system disease was the leading cause of death among Māori and non-Māori aged 65 years and over. On average 470 Māori died from circulatory disease each year. Māori males and females had higher rates of death from this group of diseases than either non-Māori males or females, which accounted for 40% of the total mortality disparity. Over half the deaths in this category were caused by ischaemic heart disease (heart attacks), followed by stroke. Other major circulatory disease deaths were caused by hypertensive disease (a 3.8 times higher rate for Māori than non-Māori) and heart failure (more than twice as common). Although relatively rare in this age group, deaths from chronic rheumatic heart disease were 3.5 times more frequent among Māori than non-Māori.

Cancer was the second leading cause of death, causing just over a quarter of Māori and non-Māori deaths in this age group. Deaths from cancer were more common among males than females and more than 50% more common among Māori than non-Māori, accounting for a quarter of the overall mortality difference. A third of the cancer deaths among Māori were due to lung cancer. Prostate and breast cancers were the next most common causes of cancer death among Māori males and females (respectively), with rates around 50% higher than those of non-Māori. Colorectal and stomach cancers were the next most common causes of cancer death for Māori males and females.

Hauora: Māori Standards of Health IV

Stomach cancer mortality was higher for Māori than non-Māori. Colorectal cancer mortality was higher for non-Māori females than Māori females but similar for Māori and non-Māori males.

Respiratory diseases caused a tenth of the deaths among both Māori and non-Māori, were more common among males than females, and were twice as frequent among Māori as non-Māori. The majority of respiratory deaths were due to COPD. This disease accounted for 86% of the excess Māori mortality from respiratory disease. Pneumonia and bronchiectasis were the other main respiratory diseases. Although relatively rare, deaths from bronchiectasis were 5.6 times more frequent among Māori than non-Māori, accounting for 10% of the disparity in all-cause mortality between Māori and non-Māori.

Diabetes mellitus caused 8% of the deaths among Māori and 3% among non-Māori and was more common among males than females. Diabetes accounted for 16% of the all-cause mortality difference between Māori and non-Māori, with Māori mortality rates over five times higher than those of non-Māori.

Diseases of the digestive system were the fifth leading major cause of death among both Māori and non-Māori.

Table 4.10: Major causes of death, ages 65 years and over, 2000–2004

Cause of death	Māori			Non-Māori			Rate ratio
	Total number	Rate	Rank	Total number	Rate	Rank	
Total: all causes	5,738	5,507.1		102,268	3,127.5		1.76
Circulatory system	2,352	2,231.8	1	46,636	1,289.7	1	1.73
• Ischaemic heart disease	1,345	1,290.4		25,510	746.3		1.73
• Stroke	418	388.9		12,184	306.8		1.27
• Hypertensive disease	94	89.0		958	23.3		3.82
• Heart failure	84	73.3		1,796	34.9		2.10
• Chronic rheumatic heart	48	44.3		452	12.4		3.56
Cancer	1,632	1,591.9	2	26,843	1,011.5	2	1.57
• Lung	553	535.8		4,694	197.4		2.71
• Prostate	131	289.5		2,569	196.0		1.48
• Colorectal	118	116.6		4,196	157.2		0.74
• Stomach	97	96.0		978	36.7		2.61
• Breast: female	87	150.0		1,524	100.3		1.50
Respiratory diseases	628	607.1	3	9,802	297.0	3	2.04
• COPD	511	493.7		6,888	227.6		2.17
• Pneumonia	53	52.5		1,854	38.2		1.37
• Bronchiectasis	30	28.0		158	5.0		5.63
Endocrine, nutritional, metabolic	527	509.1	4	3,265	108.4	5	4.70
• Diabetes mellitus	488	472.4		2,696	87.8		5.38
Digestive system diseases	151	143.8	5	3,044	85.9	7	1.67

Mortality

Cause of death	Māori			Non-Māori			Rate ratio
	Total number	Rate	Rank	Total number	Rate	Rank	
Females: all causes	2,832	4,686.8		53,848	2,447.9		1.91
Circulatory system	1,191	1,933.5	1	25,907	1,012.8	1	1.89
• Ischaemic heart disease	621	1,010.7		12,962	527.6		1.92
• Stroke	249	403.4		7,769	297.5		1.36
• Heart failure	55	81.2		1,238	35.2		2.30
• Hypertensive disease	46	72.7		638	23.5		3.10
• Chronic rheumatic heart disease	36	62.8		304	14.5		4.33
Cancer	765	1,315.2	2	12,130	758.9	2	1.73
• Lung	275	478.9		1,743	127.4		3.76
• Breast	87	150.0		1,524	100.3		1.50
• Colorectal	45	76.2		2,125	130.2		0.59
• Stomach	38	65.5		375	21.3		3.07
Respiratory diseases	315	527.0	3	4,809	226.1	3	2.33
• COPD	256	432.1		3,037	164.3		2.63
• Pneumonia	21	30.9		1,196	35.5		0.87
• Bronchiectasis	19	32.1		108	6.3		5.10
• Asthma	11	18.8		134	6.2		3.03
Endocrine, nutritional, metabolic	248	421.0	4	1,686	88.5	7	4.76
• Diabetes mellitus	226	383.3		1,379	70.9		5.40
Digestive system diseases	79	130.3	5	1,815	77.3	6	1.68
Males: all causes	2,906	6,304.0		48,420	3,771.7		1.67
Circulatory system	1,161	2,530.0	1	20,729	1,557.6	1	1.62
• Ischaemic heart disease	724	1,570.0		12,548	965.0		1.63
• Stroke	169	374.4		4,415	316.1		1.18
• Hypertensive diseases	48	105.2		320	23.0		4.57
• Heart failure	29	65.4		558	34.5		1.89
Cancer	867	1,868.7	2	14,713	1,264.0	2	1.48
• Trachea, bronchus and lung	278	592.8		2,951	267.3		2.22
• Prostate	131	289.5		2,569	196.0		1.48
• Colorectal	73	156.9		2,071	184.2		0.85
• Stomach	59	126.4		603	52.2		2.42
Respiratory diseases	313	687.1	4	4,993	367.9	3	1.87
• COPD	255	555.4		3,851	290.9		1.91
• Pneumonia	32	74.0		658	40.9		1.81
• Bronchiectasis	11	23.9		50	3.7		6.55
Endocrine, nutritional, metabolic	279	597.2	3	1,579	128.2	4	4.66
• Diabetes mellitus	262	561.4		1,317	104.7		5.36
Digestive system diseases	72	157.4	5	1,229	94.5	6	1.67

Notes: Rates are calculated per 100,000 and age-standardised to the 2001 Māori population; shaded rate ratios are statistically significant at the 5% level.

Conclusion

Mortality statistics (or death rates and numbers) provide a very limited and often stark picture of health status – “numbers without tears”. Yet each number represents a person and a loss to their whānau. As discussed earlier, mortality disparities are the end result of breaches of rights and a reflection of the unjust distribution of resources that affect health outcomes. These statistics must lead to actions to decrease the number of premature deaths suffered disproportionately by Māori whānau and the loss of contribution to the whole of our society.