Suicide Facts

Deaths and intentional self-harm hospitalisations 2008

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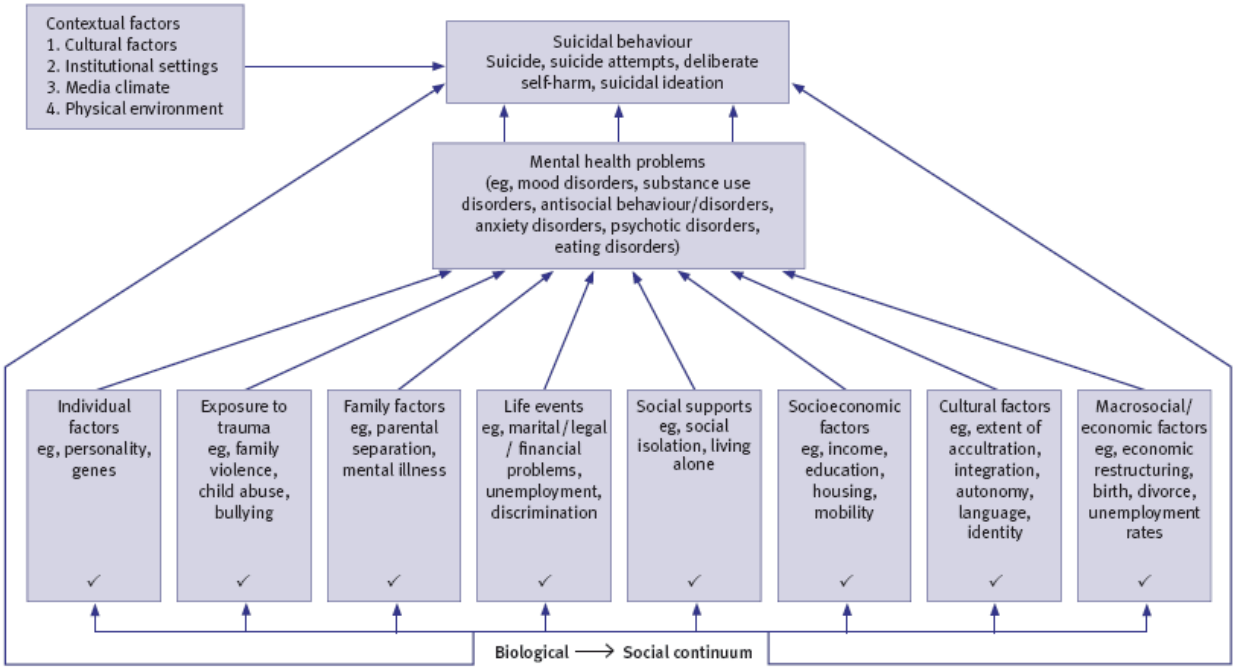
Preface

Suicide and suicidal behaviours are a major health and social issue in New Zealand. Each year nearly 500 people take their own lives and at least 2500[1] people are admitted to hospital for serious intentional self-harm injuries. These figures represent a tragic loss of potential and a tremendous impact on those families, friends, workplaces and communities that are affected by the loss of someone through suicide.

Causes of suicide

People take their own life usually as a result of a complex range of interacting factors. Figure 1 shows the wide range of such factors – biological, psychological, familial, social, economic and cultural – that contribute to both vulnerability and resiliency to mental disorders and suicidal behaviours. However, it is often just one or two issues that trigger someone into making a suicide plan, or an attempt on their life.

Figure 1: Pathways to suicidal behaviour



Source: New Zealand Suicide Prevention Strategy 2006–2016 (Associate Minister of Health 2006).

✓ Denotes New Zealand evidence is available.

[1] For data analysis purposes, this figure excludes patients who were discharged from an emergency department and stayed less than 48 hours. It also excludes patients who were re-admitted within two days of a previous admission for an intentional self-harm episode. The actual figure is likely to be much higher. More details about these exclusions are given on pages 37–40.

The factors in Figure 1 have informed the Government's *Suicide Prevention Strategy 2006–2016* and its *Suicide Prevention Action Plan 2008–2012*, both of which aim to reduce the number of suicides in New Zealand. Progress in implementing the *Action Plan* was reported in *New Zealand Suicide Prevention Action Plan 2008–2012 Report on Progress: Year One* (Ministry of Health 2009). The *Strategy*, *Action Plan* and progress report can be found on the Ministry of Health website (http://www.moh.govt.nz/moh.nsf/indexmh/mentalhealth-resources-publications).

Suicide Facts: Deaths and intentional self-harm hospitalisations 2008

Understanding the numbers, trends and demographic profile of people who suicide or seriously harm themselves is important for policy makers, clinicians and others who work to prevent suicide and intentional self-harm. This publication presents data by age, sex, youth, ethnicity, deprivation and District Health Board (DHB) area. It also includes comparisons with international data.

This data assists the Government in evaluating the effectiveness of the *Suicide Prevention Strategy* and *Action Plan*. It highlights areas or trends that are of particular concern and need to be targeted by the Government. Data showing a declining rate in suicide and hospitalisations involving intentional self-harm indicate that the *Strategy* is appropriate and the implementation of the *Action Plan* is having an impact.

Note that because of changes in methodology, it is not advisable to compare hospitalisation data in this publication to *Suicide Facts* documents published before 2008. However, comparing the data within this publication and that in *Suicide Facts 2007* and *Suicide Facts 2006* is appropriate. More details are included in the 'Technical notes' section.

Contents

Preface iii

Key Points viii
- Suicide viii
- Intentional self-harm hospitalisations ix

Suicide Deaths in 2008 1
- Overview 1
- Sex 3
- Age 6
- Youth 11
- Ethnicity 17
- Deprivation 23
- District Health Boards 25
- Methods 27

International Comparisons 30
- All ages 30
- Youth (15–24-year-olds) 33
- Adults 34

Intentional Self-harm Hospitalisations in 2008 37
- The data 37
- Overview 40
- Sex 42
- Age 44
- Youth 48
- Ethnicity 49
- Deprivation 58
- District Health Boards 60

Technical Notes 65
- Data 65
- International Classification of Diseases (ICD) codes 66

Definitions 67

References 71

Appendices
- Appendix 1: Further Tables 72
- Appendix 2: Further information 88

List of Tables

Table 1:	Suicide deaths and age-standardised rates, 1985–2008	1
Table 2:	Suicide deaths and age-standardised rates, by sex, 1985–2008	3
Table 3:	Suicide deaths and age-specific rates, by five-year age group and sex, 2008	6
Table 4:	Age-specific youth suicide rates, by sex, 1985–2008	11
Table 5:	Suicide deaths by ethnicity, age and sex, 2008	18
Table 6:	Suicide deaths and age-standardised rates for Māori and non-Māori, by sex, 1996–2008	20
Table 7:	Youth suicides and age-specific rates for Māori and non-Māori, by sex, 1996–2008	21
Table 8:	Suicide numbers and age-standardised rates, by NZDep2001 quintile and sex, 2008	24
Table 9:	Methods used for suicide deaths, 1997–2008	28
Table 10:	Age-standardised suicide rates for OECD countries, by age-group and sex	35
Table 11:	Numbers of short-stay emergency department hospitalisations involving intentional self-harm, 1996–2008 (excluded from this publication)	38
Table 12:	Numbers of hospitalisations involving intentional self-harm within two days of a previous intentional self-harm hospitalisation, 1996–2008 (excluded from this publication)	39
Table 13:	Numbers and rates of hospitalisations involving intentional self-harm, 1996–2008	40
Table 14:	Male and female hospitalisations involving intentional self-harm: numbers, rates and female-to-male ratio, 1996–2008	42
Table 15:	Numbers and rates of male and female hospitalisations involving intentional self-harm, by five-year age group, 2008	44
Table 16:	Males and females aged 15–24: hospitalisations involving intentional self-harm, numbers and age-specific rates per 100,000 population, 1996–2008	48
Table 17:	Hospitalisations involving intentional self-harm, by ethnicity, age group and sex, 2008	50
Table 18:	Numbers and rates of intentional self-harm hospitalisations by ethnicity and sex, 1996–2008	51
Table 19:	Numbers and rates of intentional self-harm hospitalisations for Māori and non-Māori youth, by sex, 1996–2008	56
Table 20:	Numbers and age-standardised rates of intentional self-harm hospitalisation, by NZDep2001 quintile, 2008	59
Table 21:	Numbers and rates of intentional self-harm hospitalisations, by DHB of domicile and sex, 2008	61
Table 22:	Numbers, rates and female-to-male rate ratios of intentional self-harm hospitalisations, by DHB of domicile, 2006, 2007 and 2008 accumulated data	62
Table 23:	Numbers, rates and Māori:non-Māori rate ratios of intentional self-harm hospitalisations, by DHB of domicile, by sex, 2006, 2007 and 2008 accumulated data	64
Table A1:	Estimated New Zealand resident population for mean year 31 December 2008, five-year age groups	72
Table A2:	Estimated New Zealand resident population, by five-year age group and sex, as at 30 June 2007, by DHB	73
Table A3:	New Zealand projected deprivation quintile population by sex and five-year age group, 2008	77
Table A4:	Suicides and age-specific rates, by five-year age group and sex, 1998	78
Table A5:	Suicide deaths and age-standardised rates, by DHB, 2004–2008	79
Table A6:	Suicide deaths by five-year age groups and sex, 1948–2008	80

List of Figures

Figure 1: Pathways to suicidal behaviour iii
Figure 2: Suicide age-standardised death rates, 1948–2008 2
Figure 3: Suicide age-standardised death rates, by sex, 1985–2008 4
Figure 4: Sex rate ratio (male:female), 1985–2008 5
Figure 5: Suicide as a percentage of all deaths, 2008 7
Figure 6: Suicide age-specific death rates, by five-year age group, 2008 8
Figure 7: Age-specific suicide death rates, males, 1998 and 2008 9
Figure 8: Age-specific suicide death rates, females, 1998 and 2008 9
Figure 9: Age-specific suicide rates for life-cycle age groups, 1948–2008 10
Figure 10: Age-specific youth suicide death rates, by sex, 1985–2008 12
Figure 11: Age-specific youth suicide death rates, 1985–1995 13
Figure 12: Age-specific youth suicide death rates, 1996–2008 14
Figure 13: Age-specific youth suicide death rates, males, 1985–1995 15
Figure 14: Age-specific youth suicide death rates, males, 1996–2008 16
Figure 15: Māori suicide rates, 1996–2008 19
Figure 16: Non-Māori suicide rates, 1996–2008 19
Figure 17: Māori and non-Māori suicide death rates, by sex, 1996–2008 20
Figure 18: Male youth suicide rates, by ethnicity, 1996–2008 22
Figure 19: Māori youth suicide rates, by sex, 1996–2008 23
Figure 20: Suicide death rates, by NZDep2001 quintile, 2008 25
Figure 21: Suicide death rates, by DHB, 2004–2008 26
Figure 22: Methods used for suicide deaths, 2008 27
Figure 23: Most common methods of suicide, by sex and broad age group, 2008 29
Figure 24: Age-standardised suicide rates for OECD countries, males 31
Figure 25: Age-standardised suicide rates for OECD countries, females 32
Figure 26: Age-specific suicide rates for OECD countries, males, 15–24 years 33
Figure 27: Age-specific suicide rates for OECD countries, females, 15–24 years 34
Figure 28: Hospitalisation rates involving intentional self-harm, 1996–2008 41
Figure 29: Male and female hospitalisation rates involving intentional self-harm, 1996–2008 43
Figure 30: Hospitalisation rates involving intentional self-harm, by age group and sex, 2008 45
Figure 31: Male hospitalisation rates involving intentional self-harm, by age group, 1998 and 2008 46
Figure 32: Female hospitalisation rates involving intentional self-harm, by age group, 1998 and 2008 47
Figure 33: Males and females aged 15–24: hospitalisations involving intentional self-harm, age-specific rates per 100,000 population, 1996–2008 49
Figure 34: Age-standardised intentional self-harm hospitalisation rates for Māori, 1996–2008 52
Figure 35: Age-standardised intentional self-harm hospitalisation rates for non-Māori, 1996–2008 53
Figure 36: Intentional self-harm hospitalisation rates for Māori and non-Māori males, 1996–2008 54
Figure 37: Intentional self-harm hospitalisation rates for Māori and non-Māori females, 1996–2008 55
Figure 38: Intentional self-harm hospitalisation rates for youth, by ethnicity, 1996–2008 57
Figure 39: Intentional self-harm hospitalisation rates for youth, by ethnicity and sex, 1996–2008 58
Figure 40: Age-standardised intentional self-harm hospitalisation rates, by deprivation quintile and sex, 2008 60
Figure 41: Total age-standardised hospitalisation rates for intentional self-harm, by DHB of domicile, 2006, 2007 and 2008 (accumulated data) 63

Key Points

Suicide

Overview

- A total of 497 people died by suicide in New Zealand in 2008.
- This equates to 11.2 deaths per 100,000 population (age-standardised).
- The 2008 suicide rate was 25.6 percent below the peak rate in 1998.

Sex

- There were 366 male suicide deaths (16.9 deaths per 100,000 male population, age-standardised) in 2008.
- There were 131 female suicide deaths (5.8 deaths per 100,000 female population, age-standardised) in 2008.
- The 2008 male suicide rate was 29.2 percent below the peak rate in 1995. The female suicide rate has remained steady over time.
- The ratio of male suicide deaths to female was 2.9:1 in 2008.

Age

- In 2008 the peak age group for male suicide rates was 20–24 years. There were 33.3 suicide deaths per 100,000 male population in this age group (50 deaths).
- The peak age group for female suicide rates was 15–19 years, in which group there were 13.9 deaths per 100,000 female population (22 deaths).
- The male suicide rate for those aged 25–29 years has almost halved since 1998.

Youth (15–24 years)

- In 2008 there were 81 male youth suicide deaths (25.7 per 100,000 population) and 34 female youth suicide deaths (11.1 per 100,000 population). The male rate was down by 41.7 percent from the peak rate in 1995; the female rate was the highest for this group since 1999.
- Overall, the youth suicide rate has declined by 35.4 percent since 1995.
- The Māori youth suicide rate was 27.6 per 100,000 Māori youth population: about 70 percent higher than that of non-Māori youth (16.4 per 100,000).

Ethnicity

- There were 82 Māori suicide deaths in 2008. This represents an age-standardised rate of 13.3 per 100,000 Māori population: the lowest Māori rate since 2001.
- There were 10.6 non-Māori deaths per 100,000 population (age-standardised) in 2008.
- There were 30 suicide deaths among Pacific people and 17 among Asian ethnic groups in 2008.

Deprivation

- There were 14.1 deaths per 100,000 population (age-standardised) in quintile 5 (the most deprived) and 8.8 deaths per 100,000 population (age-standardised) in quintile 1 (the least deprived) areas in 2008. This represents a significant difference.

Intentional self-harm hospitalisations[2]

Overview

- There were 2465 intentional self-harm hospitalisations (with exclusions as defined on pages 37–40) in New Zealand in 2008, which equates to 58.2 hospitalisations per 100,000 population (age-standardised).
- Between 1996 and 2008 there was a significant decrease (32.2 percent) in rates of intentional self-harm hospitalisations.

Sex

- Male hospitalisations involving intentional self-harm decreased significantly (by 37.3 percent) between 1996 and 2008.
- Over the same period, female hospitalisations decreased by 29.1 percent: this is also a statistically significant reduction.

Age

- Males were most commonly hospitalised in the age range 20–24 years in 2008.
- Females were most commonly hospitalised in the age range 15–19 years in 2008.
- Since 1998 male hospitalisation rates have dropped in almost all age groups.
- Since 1998 female hospitalisation rates have dropped in the 10–44-year range and increased in the 45–64-year age range.

Youth

- Hospitalisation rates in males aged 15–24 years showed a significant downward trend (54.2 percent) between 1996 and 2008 (in which there were 214 hospitalisations).
- Hospitalisation rates in females aged 15–24 years also showed a significant downward trend (37.5 percent) in that period (there were 483 hospitalisations in 2008).

Ethnicity

- Age-standardised rates for Māori hospitalisations remained relatively stable between 1996 and 2008.
- Age-standardised rates for hospitalisations of Pacific people also remained relatively stable: on average, Pacific rates were about 43 percent of Māori rates.
- Age-standardised rates for non-Māori/non-Pacific hospitalisations dropped markedly (36.3 percent) between1996 and 2008.

Deprivation

- In 2008 males from quintile 5 areas were about 2.5 times more likely to be hospitalised than those in quintile 1 areas.
- In 2008 the highest rate of female hospitalisations was for quintile 4 areas; this rate was more than double that of quintile 1 areas.

DHBs

- Wairarapa had the highest age-standardised rate of hospitalisation in 2008.
- Counties Manukau had the lowest age-standardised rate of hospitalisation in 2008.
- Nelson-Marlborough had the highest female-to-male rate ratio (4.5:1) in 2008.
- Only in Auckland did male hospitalisation rates exceed female rates in 2008.

[2] For a description of the data in this section, please refer to pages 37–40.

Suicide Deaths in 2008

Overview

A total of 497 people died by suicide in 2008. Table 1 shows the number of suicides and age-standardised rates for the period 1985–2008.

Table 1: Suicide deaths and age-standardised rates, 1985–2008

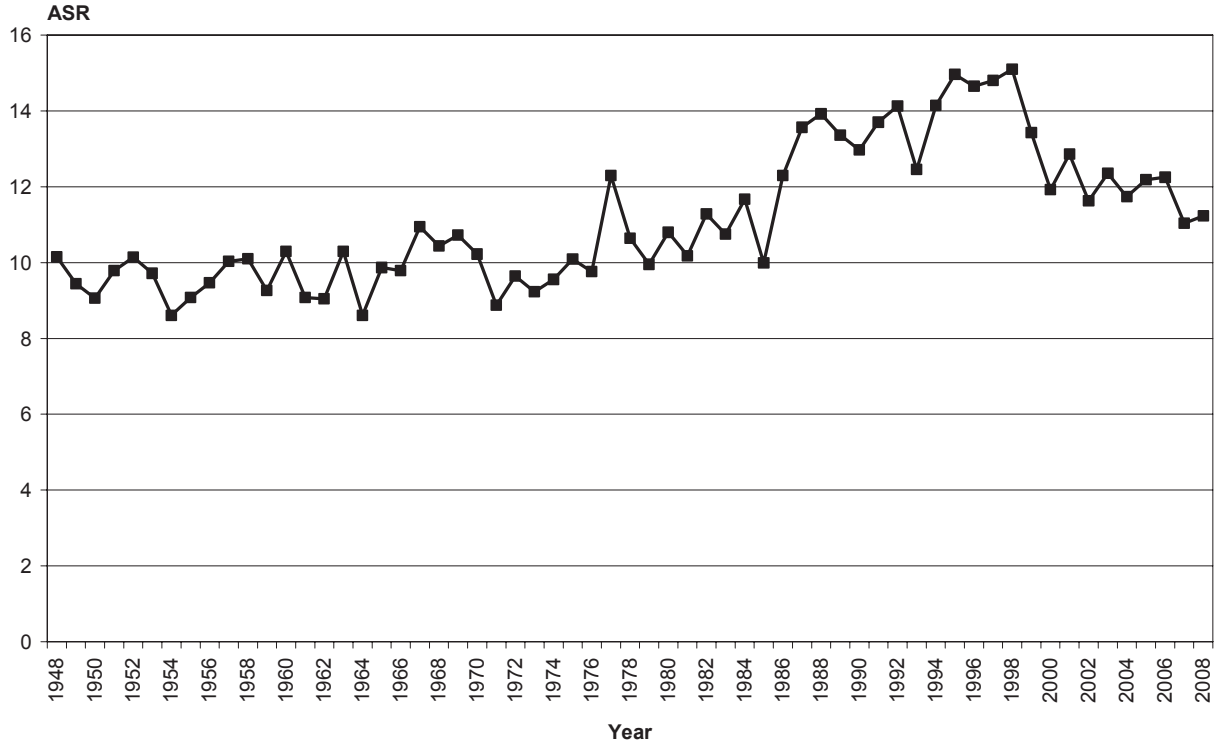
Year	Total	
	Number	Rate
1985	338	10.0
1986	414	12.3
1987	463	13.6
1988	484	13.9
1989	465	13.4
1990	455	13.0
1991	474	13.7
1992	493	14.1
1993	443	12.5
1994	512	14.1
1995	543	15.0
1996	540	14.7
1997	561	14.8
1998	577	15.1
1999	516	13.4
2000	458	11.9
2001	507	12.9
2002	466	11.6
2003	517	12.4
2004	488	11.7
2005	511	12.2
2006	526	12.2
2007	487	11.0
2008	497	11.2

Source: New Zealand Mortality Collection

Note: The rate shown is the age-standardised rate (ASR) per 100,000 population, standardised to the World Health Organization (WHO) standard world population.

Figure 2 presents long-term annual age-standardised rates for New Zealand. In 1998 the age-standardised rate of suicide for the total population was at its highest since 1948 (the first year for which comparable data is available), at 15.1 deaths per 100,000 population; the rate has been generally declining since then. Although the 2008 figure of 11.2 deaths per 100,000 population is higher than the 2007 figure, there has been a statistically significant decrease of 25.6 percent since the peak rate of 15.1 in 1998. As Figure 2 illustrates, rates are extremely volatile from year to year. While there is evidence that suicide rates have declined since 1998, it is highly likely that there will always be year-on-year variations.

Figure 2: Suicide age-standardised death rates, 1948–2008



Source: New Zealand Mortality Collection

Notes:

1. The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.
2. Numbers of suicides for all years since 1948, from which the rates for this graph were calculated, are shown in Appendix 1, Table A6.

The sub-groups of the New Zealand population with the highest suicide mortality rates in 2008 were males, Māori (as opposed to non-Māori), youth (age group 15–24 years) and those residing in the most deprived (quintile 5) areas. Further data for these groups are presented in later sections of this publication.

Sex

Table 2 sets out male and female suicide deaths and age-standardised rates per 100,000 population between 1985 and 2008.

Table 2: Suicide deaths and age-standardised rates, by sex, 1985–2008

Year	Males		Females		Sex rate ratio (M:F)
	Number	Rate	Number	Rate	
1985	255	15.5	83	4.9	3.2
1986	301	18.3	113	6.6	2.8
1987	363	21.7	100	5.8	3.7
1988	381	22.4	103	5.7	4.0
1989	372	21.8	93	5.3	4.1
1990	363	21.1	92	5.1	4.1
1991	380	22.3	94	5.4	4.2
1992	397	23.1	96	5.4	4.2
1993	349	19.9	94	5.2	3.8
1994	409	23.1	103	5.5	4.2
1995	427	23.9	116	6.3	3.8
1996	428	23.8	112	6.1	3.9
1997	440	23.7	121	6.3	3.7
1998	445	23.7	132	6.8	3.5
1999	385	20.4	131	6.8	3.0
2000	375	20.0	83	4.2	4.7
2001	388	20.3	119	5.9	3.4
2002	353	18.0	113	5.6	3.2
2003	376	18.4	141	6.6	2.8
2004	379	18.6	109	5.2	3.6
2005	380	18.6	131	6.0	3.1
2006	388	18.6	138	6.3	3.0
2007	371	17.4	116	5.0	3.5
2008	366	16.9	131	5.8	2.9

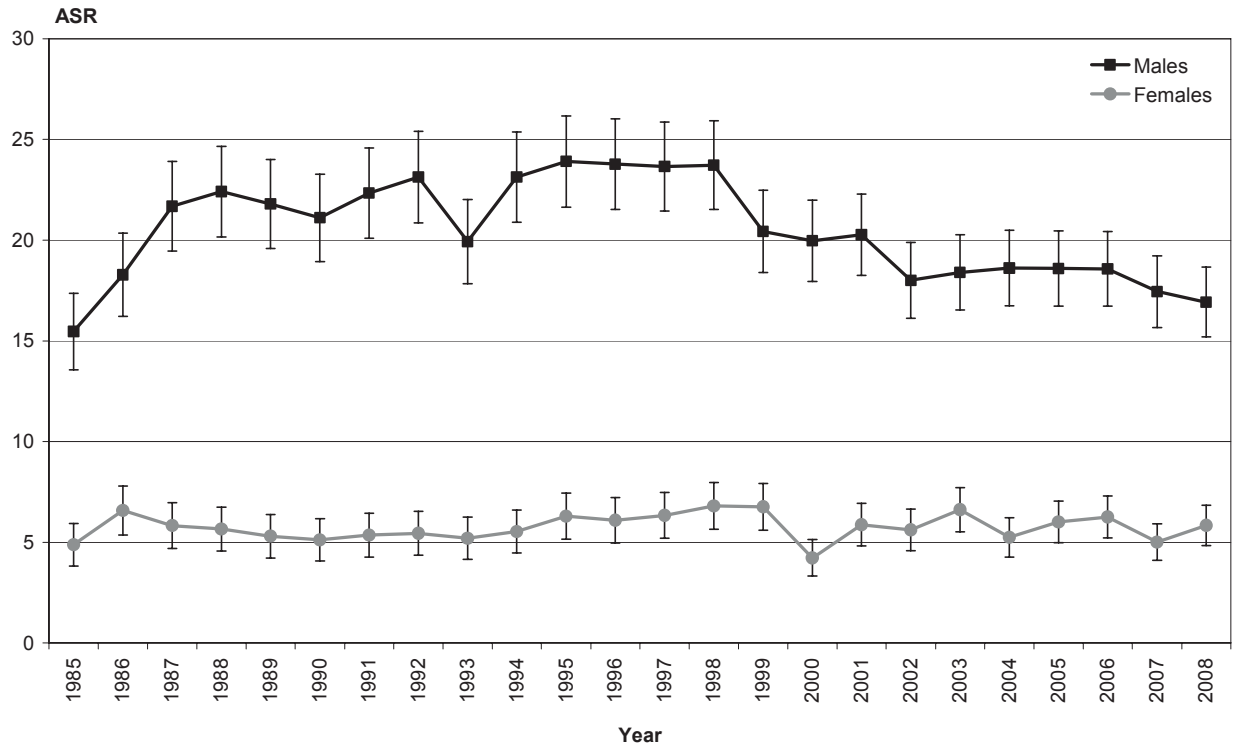
Source: New Zealand Mortality Collection

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

A total of 366 males died by suicide in 2008. This represents an age-standardised suicide rate of 16.9 per 100,000 population: a statistically significant decrease of 29.2 percent from the peak male rate of 23.9 suicide deaths per 100,000 population in 1995. This is illustrated in Figure 3, which shows upper confidence interval bands for the years 2002–2008 falling below lower confidence interval bands for 1994–1998. However, these recent rates are not significantly different from the rate in 1985. (See the 'Definitions' section of this publication for information on confidence intervals and statistical significance.)

There were more female suicide deaths in 2008 than there were in 2007 (131 as opposed to 116). The age-standardised female suicide rate in 2008 was 5.8 per 100,000 population. In spite of this increase, the female suicide rate has remained relatively steady, averaging 5.7 per 100,000 population since 1985. Figure 3 shows this clearly.

Figure 3: Suicide age-standardised death rates, by sex, 1985–2008

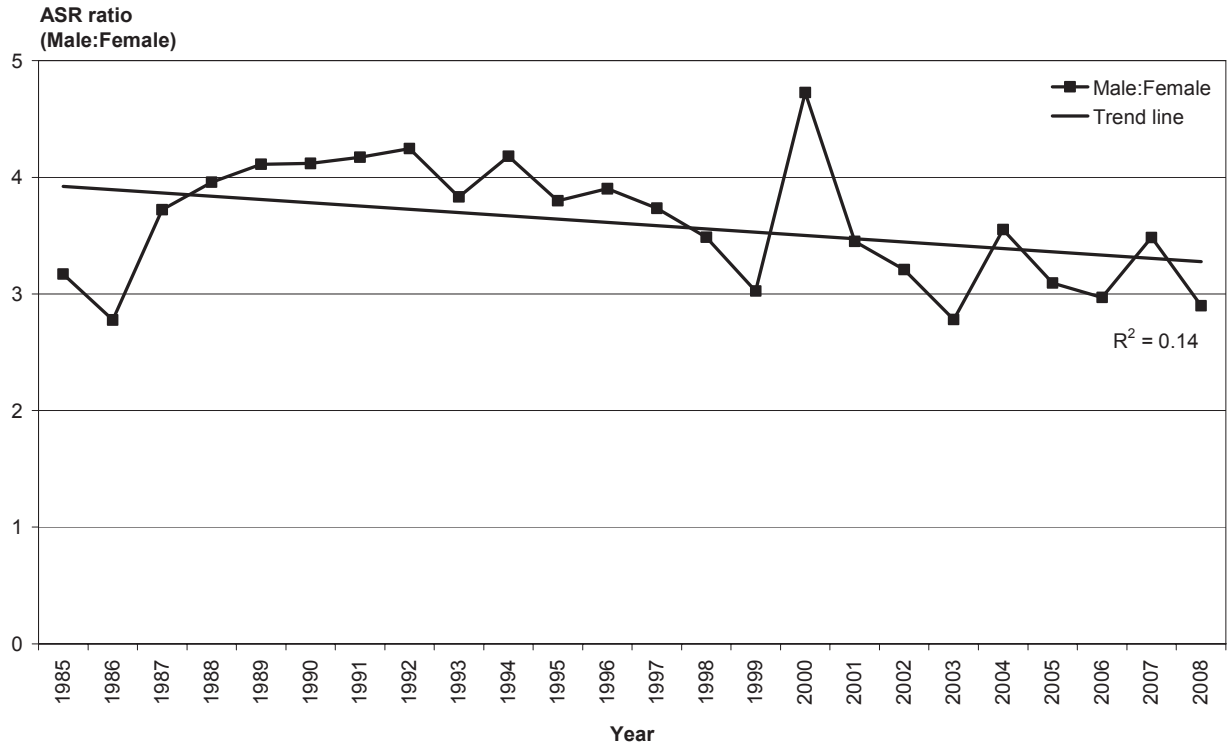


Source: New Zealand Mortality Collection

Note: The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

The rate of male suicides was significantly higher than the rate of female suicides between 1985 and 2008, by a ratio of 2.9:1. While the ratio of male suicides compared to female suicides appears to be declining (largely due to the male rate declining), as Figure 4 shows the R^2 value (see Note below figure) of 0.14 is very low.

Figure 4: Sex rate ratio (male:female), 1985–2008



Source: New Zealand Mortality Collection

Notes:

1. R^2 is a measure of how well the data fit the trend line. An R^2 value of 0.14 indicates that 14 percent of the variation in the sex rate ratio of suicide deaths over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.
2. The rate (ASR) on which the ratio is calculated is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

Age

Table 3 shows suicide death numbers and age-specific rates for five-year age groups. The highest total rate for 2008 occurred in the 20–24-year age group (20.9 suicides per 100,000 population). This was also the age group with the highest suicide rate for males (33.3 deaths per 100,000 male population). However, for females the highest rate was in the 15–19 age group (13.9 deaths per 100,000 female population).

These figures represent a change in age-group patterns for suicide rates compared to the previous year. In 2007, the highest male suicide rates were in the 30–34-year age group (33.9 deaths per 100,000 population) and the highest female rates in the 40–44-year age group (10.3 deaths per 100,000 female population).

Table 3: Suicide deaths and age-specific rates, by five-year age group and sex, 2008

Age group	Males		Females		Total	
	Number	Rate	Number	Rate	Number	Rate
5–9	0	–	0	–	0	–
10–14	1	–	2	–	3	–
15–19	31	18.8	22	13.9	53	16.4
20–24	50	33.3	12	8.2	62	20.9
25–29	34	25.3	13	9.3	47	17.2
30–34	34	26.2	5	3.5	39	14.4
35–39	30	20.2	17	10.4	47	15.0
40–44	32	21.1	13	8.0	45	14.3
45–49	38	24.5	12	7.3	50	15.7
50–54	30	22.1	8	5.7	38	13.7
55–59	31	25.7	9	7.3	40	16.4
60–64	19	18.3	3	–	22	10.4
65–69	11	13.6	4	4.7	15	9.0
70–74	7	11.6	4	6.1	11	8.7
75–79	5	10.4	1	–	6	5.7
80–84	7	21.4	5	11.1	12	15.5
85+	6	28.9	1	–	7	11.0
	366	16.9	131	5.8	497	11.2

Source: New Zealand Mortality Collection

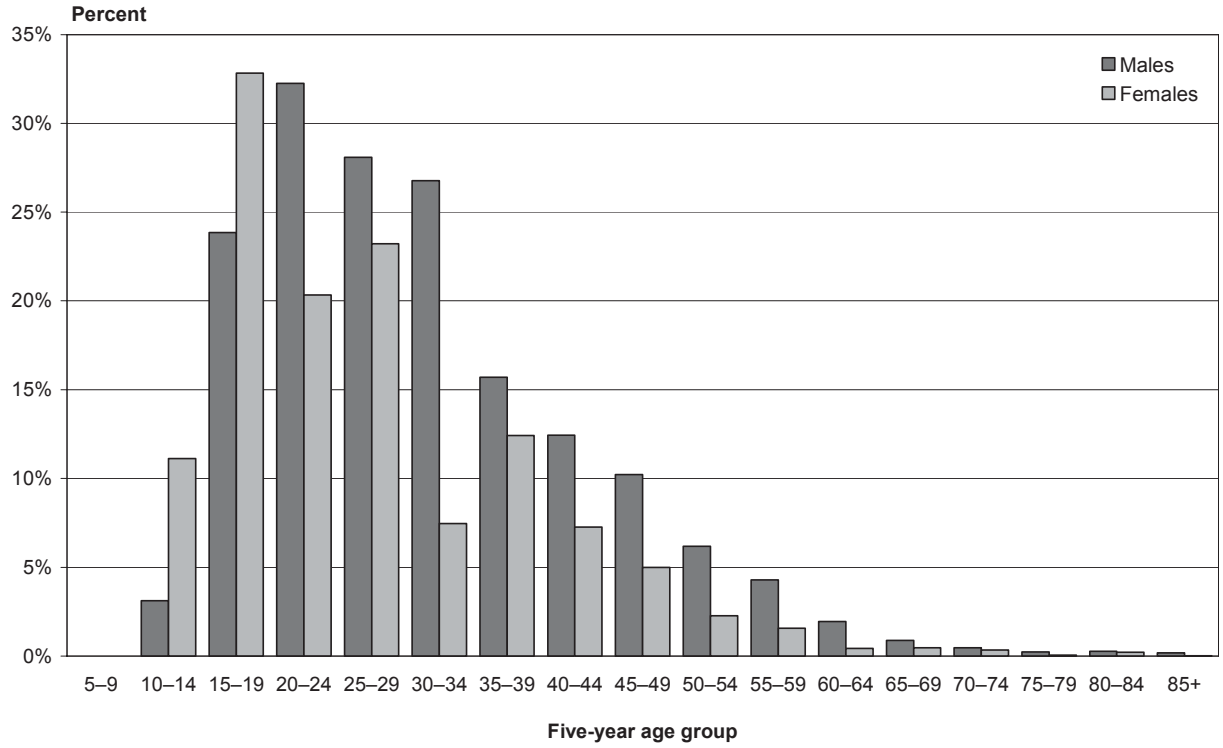
Note: A dash (–) indicates that a rate has been suppressed because there were fewer than four deaths in the category: rates are therefore volatile and difficult to interpret.

Note that in both the youngest and oldest age groups, some rates have been suppressed because the low number of suicides means that the rates are volatile and difficult to interpret.

Deaths from suicide in 2008 made up more than one-quarter of all deaths in the 15–24 years age groups (motor transport accidents accounted for about one-third of deaths in this age group). In those aged 40–64, cancer was the most common cause of death (increasing from about 30 percent in the 40–44 group to more than half in the 60–64 group). In the oldest age groups (80 years and over) diseases of the circulatory system predominated as cause of death.[3]

As Figure 5 shows, suicide accounted for almost one-third of 2008 male deaths in the 20–24-year age group and almost a quarter of deaths in males aged 15–19 years. Thirty-five percent of all deaths among male youths (aged 15–24 years) in 2008 were from transport accidents.

Figure 5: Suicide as a percentage of all deaths, 2008



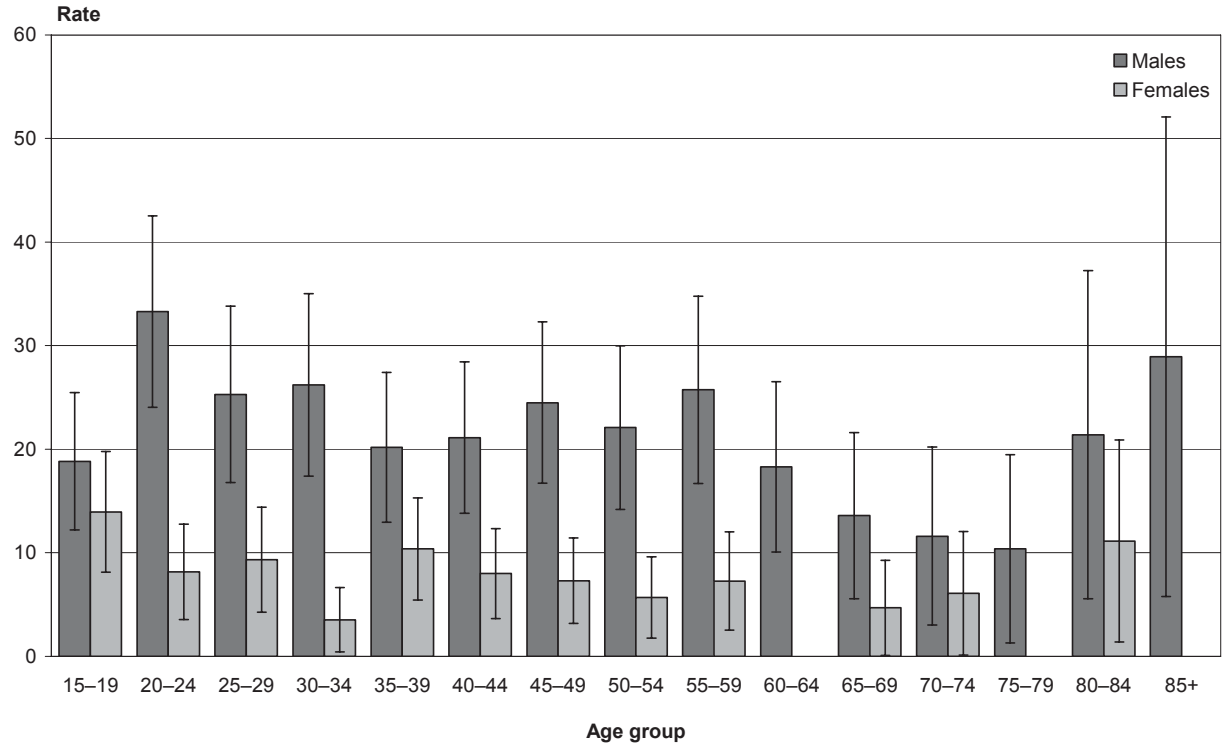
Source: New Zealand Mortality Collection

Among females aged 15–19, suicide accounted for almost a third of deaths in 2008, and transport accidents comprised about 30 percent. As Figure 5 shows, the percentage of female suicide deaths drops away markedly between the 25–29 and 30–34 year age groups. This indicates a possible link between suicide rates and a woman's child-bearing years.

[3] Information in this paragraph comes from New Zealand Mortality Collection 2008 data, which has not yet been published.

In 2008, the difference between male and female age-specific suicide rates was significant in all the five-year age groups from 20 to 64 years, except for the 35–39 year age group (Figure 6). The very large confidence intervals in the oldest age groups indicate that the figures are volatile, mainly because of the small numbers involved.

Figure 6: Suicide age-specific death rates, by five-year age group, 2008



Source: New Zealand Mortality Collection

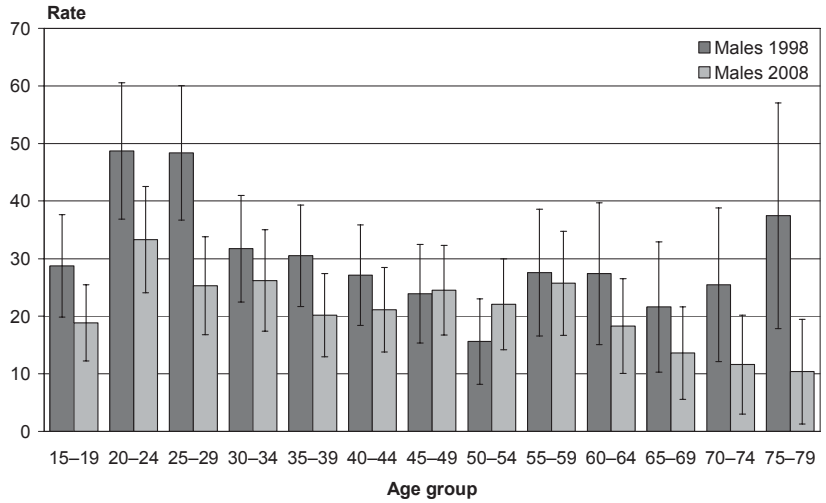
Notes:

1. Rates for some groups have been suppressed because of small numbers of deaths in these categories.
2. The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

Figures 7 and 8 show a 'snapshot' age-group comparison between 1998 and 2008 male and female suicide rates. While this comparison gives an idea of changes over a decade, year-on-year volatility in the rates means caution is recommended in interpreting these figures.

Suicide rates for males under 30 have dropped by almost 40 percent over the past decade. In particular, the suicide rate for males aged 25–29 has almost halved since 1998. This decrease is statistically significant. Although there have been similar drops for males in some of the older age groups, it is not realistic to draw conclusions for these groups because of the small numbers of suicides involved, which can mean the differences in rates are not statistically significant. Figure 7 illustrates these changes.

Figure 7: Age-specific suicide death rates, males, 1998 and 2008



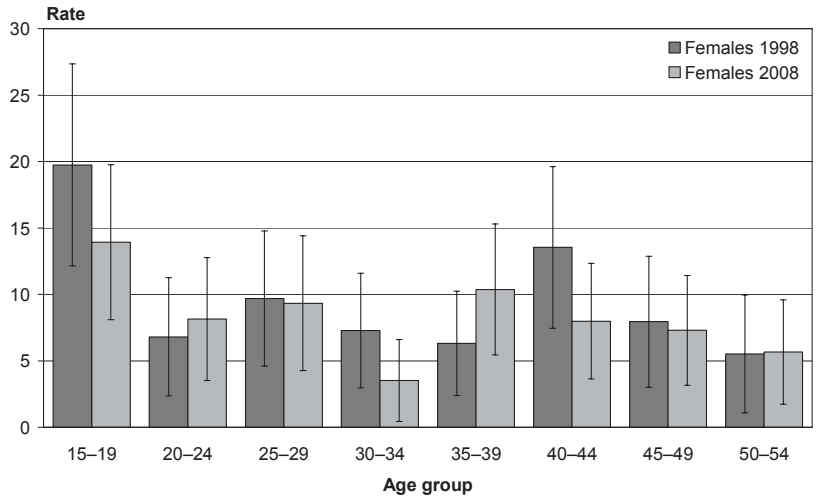
Source: New Zealand Mortality Collection

Notes:

1. Rates for younger and older age groups have been suppressed because of small numbers of deaths in these categories.
2. The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.
3. This graph reflects data presented in Table 3 and Appendix 1, Table A4.

Figure 8 suggests that, among females, there was a marked decrease in suicide rates between 1998 and 2008 for those aged 15–19 years. However, small numbers of female suicides mean that these differences are not statistically significant. Among females across all age groups, there was no significant change in 2008 compared with 1998.

Figure 8: Age-specific suicide death rates, females, 1998 and 2008



Source: New Zealand Mortality Collection

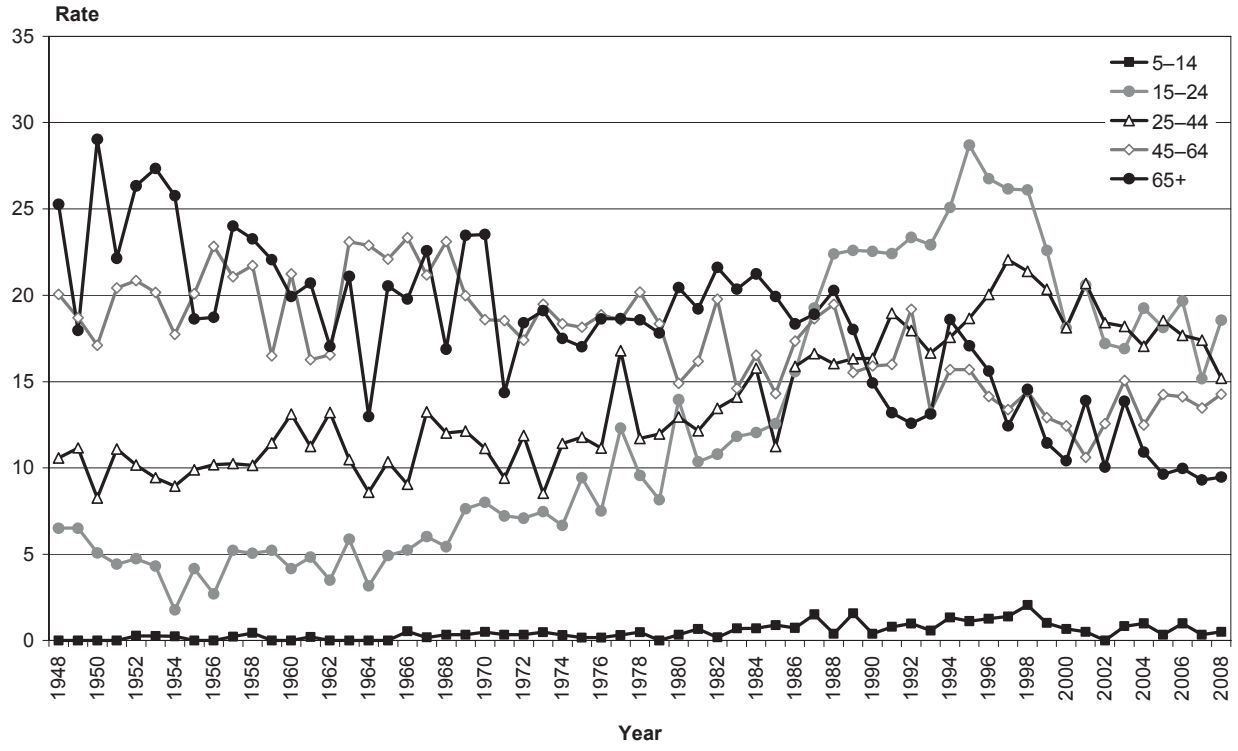
Notes:

1. Rates for younger and older age groups have been suppressed because of small numbers of deaths in these categories.
2. The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.
3. This graph reflects data presented in Table 3 and Appendix 1, Table A4.

Figure 9 illustrates clearly the volatility of New Zealand's suicide rates since 1948. In part, this reflects small suicide numbers in each age group category. This graph shows broad age groups for clarity. Although its variability makes drawing conclusions difficult, some general comments can be made.

First, the differences between age groups appear less marked in 2008 compared to 1948. Secondly, a clear change in age group patterns occurred in the mid- to late 1980s. Until then, suicide rates had, since 1948, generally been higher in the over 65 years and 45–64 year age groups than in the younger age groups, although they were gradually decreasing. However, in those younger age groups suicide rates gradually increased until, by the early 1990s, they exceeded rates in the older groups. The youth (15–24 years) rates, in particular, however, have dropped significantly since then.

Figure 9: Age-specific suicide rates for life-cycle age groups, 1948–2008



Source: New Zealand Mortality Collection

Notes:

1. The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.
2. This graph reflects data presented in Appendix 1, Table A6.

Youth

The suicide rate for youth (the 15–24-year age group) declined by 35.4 percent between 1995 (its highest point) and 2008. The 2008 rate was 18.6 per 100,000 youth population. The youth rate increased from 12.6 per 100,000 youth population in 1985 to 28.7 per 100,000 youth population in 1995 before beginning to fall (Table 4 and Figure 10).

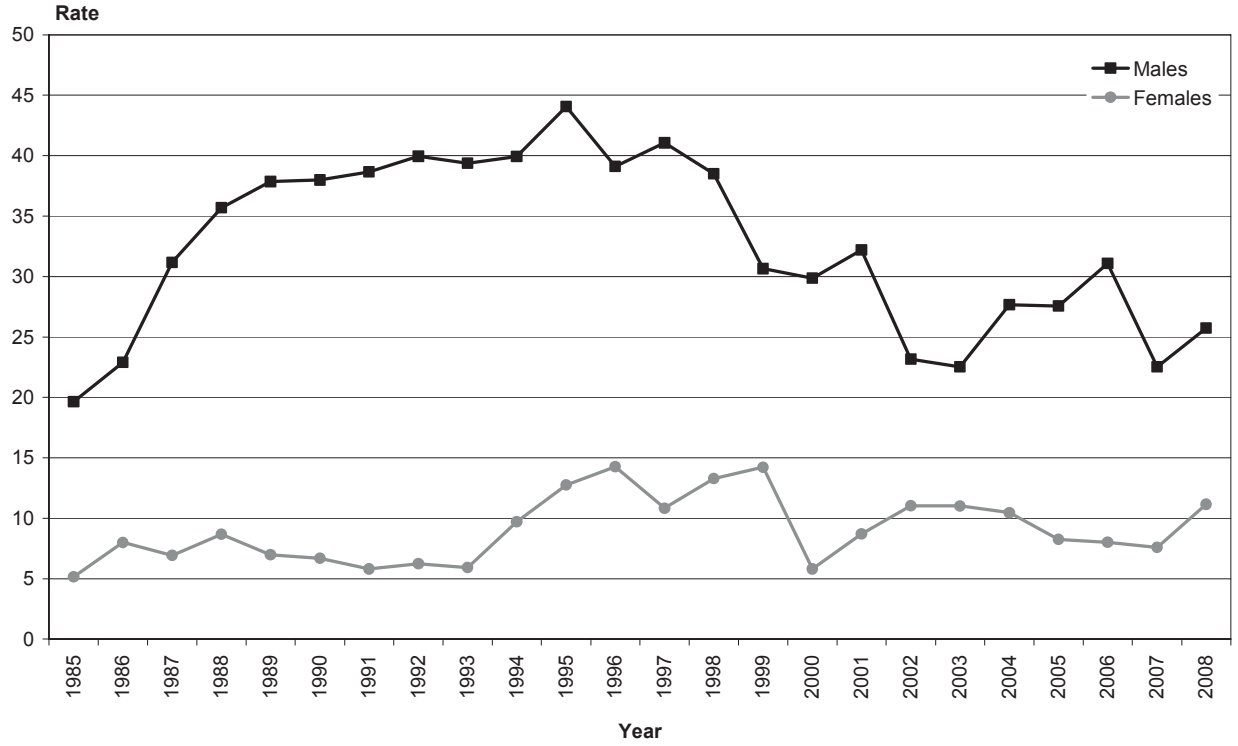
Table 4: Age-specific youth suicide rates, by sex, 1985–2008

Year	Males		Females		Total	
	Number	Rate	Number	Rate	Number	Rate
1985	60	19.6	15	5.1	75	12.6
1986	68	22.9	23	8.0	91	15.6
1987	93	31.2	20	6.9	113	19.3
1988	106	35.7	25	8.7	131	22.4
1989	111	37.9	20	7.0	131	22.6
1990	111	38.0	19	6.7	130	22.5
1991	109	38.7	16	5.8	125	22.4
1992	112	39.9	17	6.2	129	23.3
1993	110	39.4	16	5.9	126	22.9
1994	111	39.9	26	9.7	137	25.1
1995	122	44.1	34	12.8	156	28.7
1996	105	39.1	38	14.3	143	26.7
1997	113	41.1	29	10.8	142	26.2
1998	105	38.5	35	13.3	140	26.1
1999	83	30.6	37	14.2	120	22.6
2000	81	29.9	15	5.8	96	18.1
2001	87	32.2	23	8.7	110	20.6
2002	65	23.2	30	11.0	95	17.2
2003	66	22.5	31	11.0	97	16.9
2004	83	27.7	30	10.5	113	19.3
2005	84	27.6	24	8.2	108	18.1
2006	95	31.1	24	8.0	119	19.7
2007	70	22.5	23	7.6	93	15.2
2008	81	25.7	34	11.1	115	18.6

Source: New Zealand Mortality Collection

Note: The rate shown is the age-specific rate: the frequency of suicides relative to particular population age groups.

Figure 10: Age-specific youth suicide death rates, by sex, 1985–2008

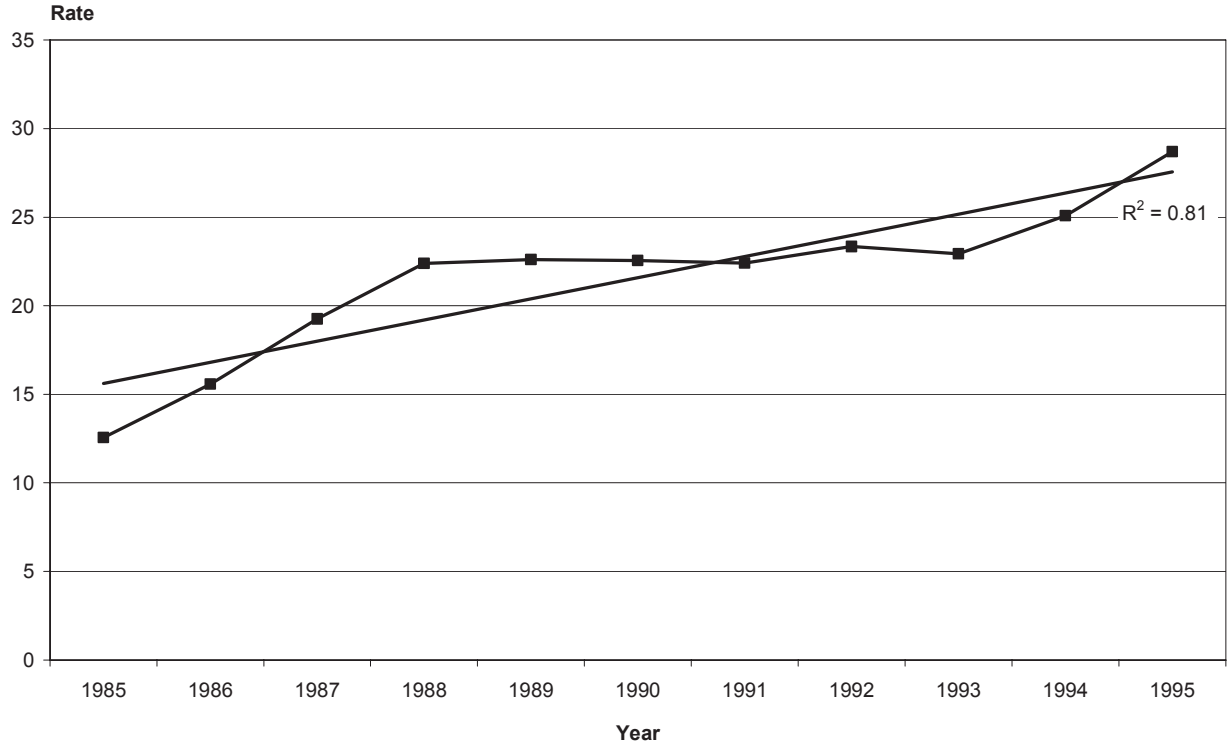


Source: New Zealand Mortality Collection

Note: The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

Analysing two sets of data, 1985–1995 and 1996–2008, with the use of trend lines indicates there was a clear upward trend with an R^2 value of 0.81 for the first set, followed by a decreasing trend with an R^2 value of 0.65 for the second data set (see Figures 11 and 12). There has clearly been a marked change in youth suicide rates that is not due to chance.

Figure 11: Age-specific youth suicide death rates, 1985–1995

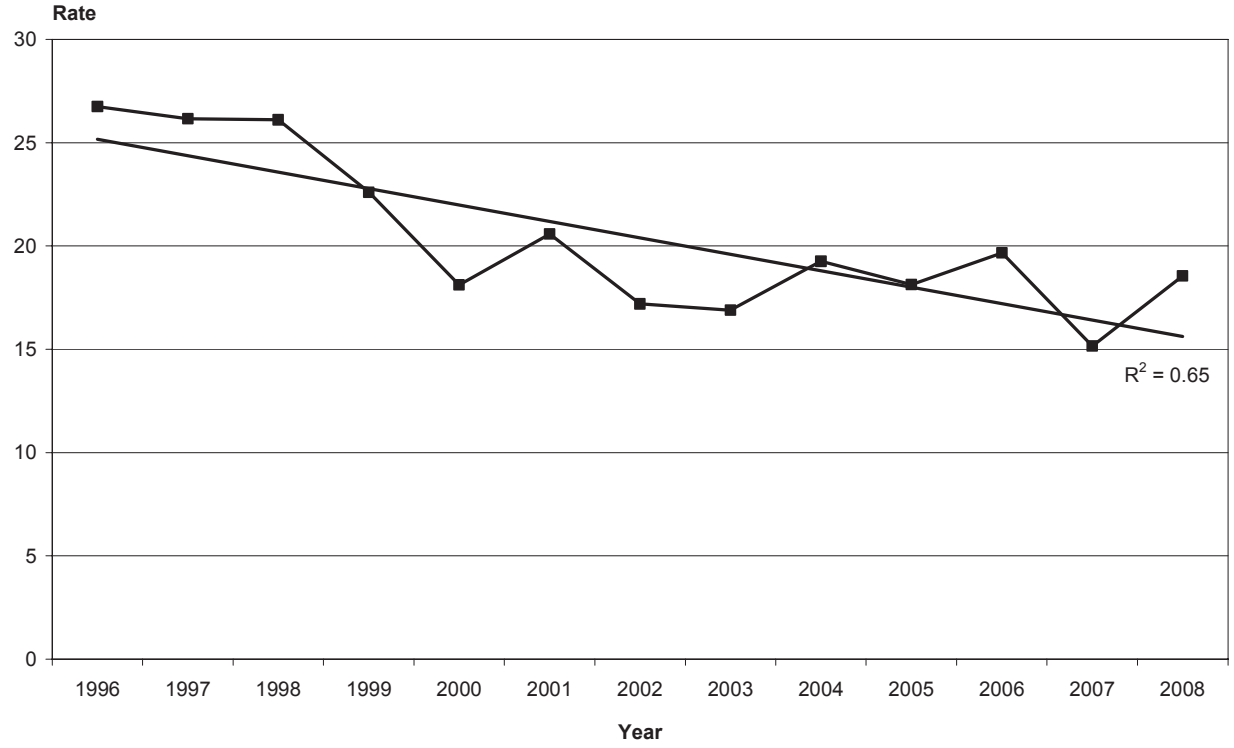


Source: New Zealand Mortality Collection

Notes:

1. R^2 is a measure of how well the data fit the trend line. An R^2 value of 0.81 indicates that 81 percent of the variation in youth suicide deaths over time is explained by the upward trend over time. See the 'Definitions' section of this publication for further information.
2. The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

Figure 12: Age-specific youth suicide death rates, 1996–2008



Source: New Zealand Mortality Collection

Notes:

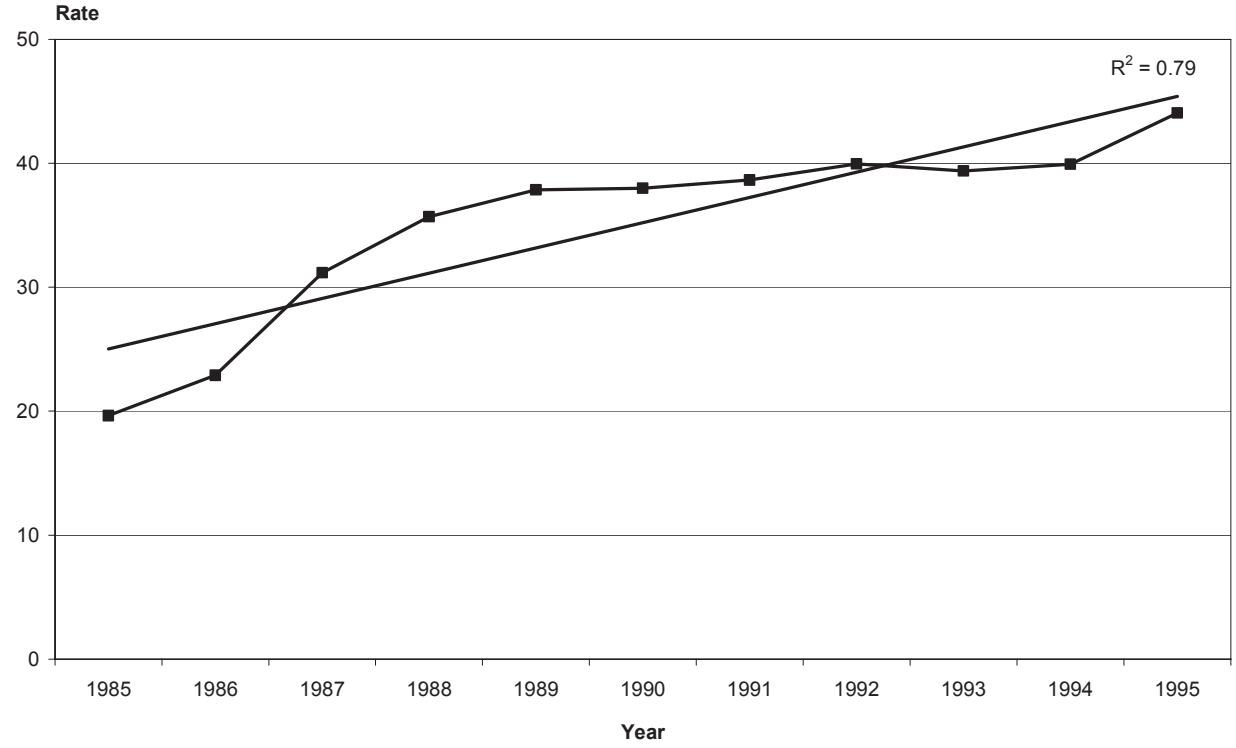
1. R^2 is a measure of how well the data fit the trend line. An R^2 value of 0.65 indicates that 65 percent of the variation in youth suicide deaths over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.
2. The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

The male youth (15–24 years) age-specific suicide rate in 2008 was 25.7 per 100,000 male youth population, compared to the female youth rate of 11.1 per 100,000 female youth population (Table 4). The male:female ratio of 2.3:1 was lower than the all-age ratio of 2.9:1, indicating that the sex difference in suicide rates is less marked among youth. Suicide deaths accounted for 28.4 percent of all male youth deaths and 27.0 percent of all female youth deaths in 2008.[4]

Again, testing the two sets of data (before and after the peak rate) separately produces evidence of an upward trend for male youth suicide rates from 1985 to 1995 (with an R^2 value of 0.79: Figure 13) and some evidence of a downward trend from 1996 to 2008 (with an R^2 value of 0.59: Figure 14). The male youth rate declined by 41.7 percent between the peak year, 1995, and 2008.

[4] These percentages have been calculated from New Zealand Mortality Collection data.

Figure 13: Age-specific youth suicide death rates, males, 1985–1995

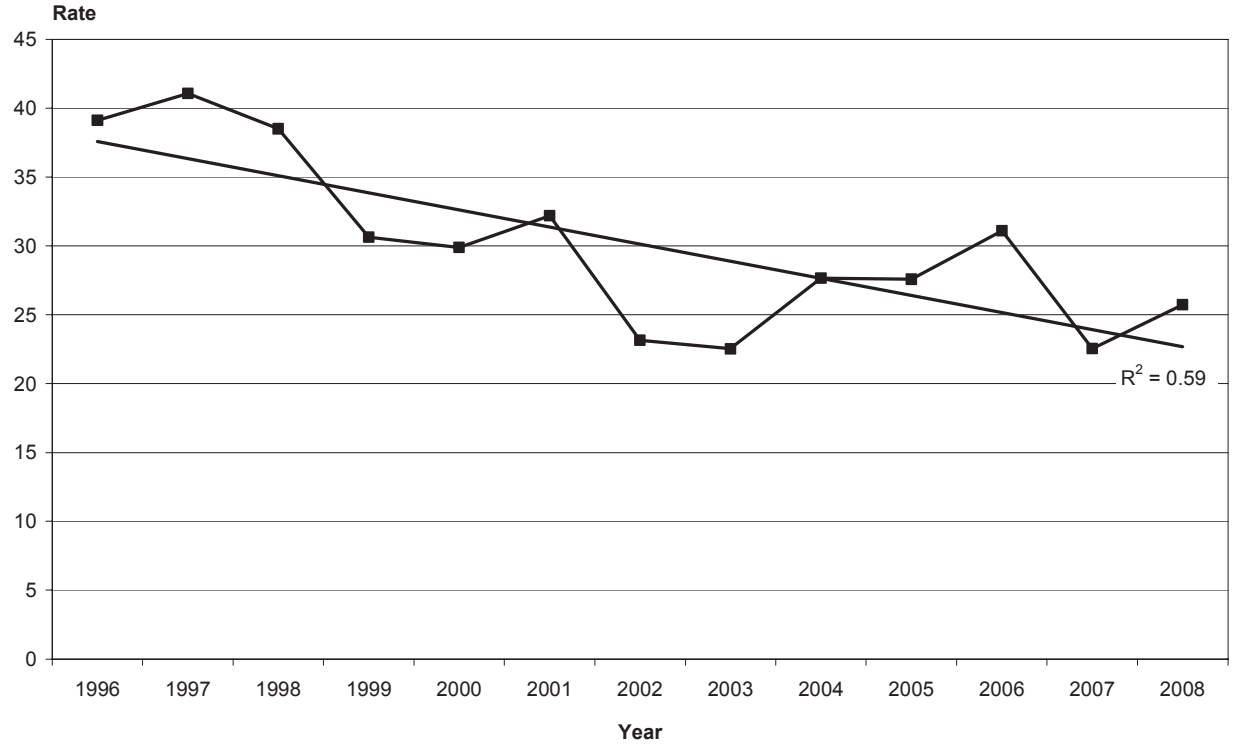


Source: New Zealand Mortality Collection

Notes:

1. R^2 is a measure of how well the data fit the trend line. An R^2 value of 0.79 indicates that 79 percent of the variation in male youth suicide deaths over time is explained by the upward trend over time. See the 'Definitions' section of this publication for further information.
2. The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

Figure 14: Age-specific youth suicide death rates, males, 1996–2008



Source: New Zealand Mortality Collection

Notes:

1. R^2 is a measure of how well the data fit the trend line. An R^2 value of 0.59 indicates that 59 percent of the variation in male youth suicide deaths over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.
2. The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

Figure 10 suggests no distinct pattern in female youth suicide rates between 1985 and 2008. However, there is some indication that female youth rates were higher between 1994 (average annual rate 10.5 per 100,000 female youth population) and 2008 than they had been between 1985 and 1993 (average annual rate 6.7 per 100,000 female youth population).

Ethnicity[5]

Table 5 shows suicide deaths by ethnicity, age and sex for 2008. Note that small numbers of suicide deaths for Pacific and Asian peoples mean that suicide rates for these groups tend to be highly variable and may be misleading, and so have not been calculated for this publication.

Māori

Eighty-two Māori died by suicide in 2008. The age-standardised rate was 13.3 deaths per 100,000 Māori population (Table 6), the lowest rate for Māori since 2001. The ratio of Māori suicide rates to non-Māori rates was 1.3:1.

Pacific peoples

There were 30 deaths by suicide among the Pacific peoples ethnic group in 2008 (25 males and five females). It is difficult to draw conclusions about changes over time for this group because the number of suicides is consistently small, with considerable variation over time.

Asian peoples

There were 17 suicides among the Asian peoples ethnic group in 2008 (nine males and eight females). Again, it is difficult to draw conclusions about changes over time: not only was the number of suicides in the group small, but the population of Asian peoples has increased markedly since 1996. However, it may be worth noting that over the period 1996–2008 the ratio of male-to-female suicides for Asian peoples was 1.4:1, compared to the national average over the same period of 2.9:1, which may indicate a much higher proportion of female suicides among Asian peoples in New Zealand. (It is also possible that the age structure of the Asian peoples population in New Zealand is different from other populations.)

[5] Note that ethnicity data can only be compared back to 1996 because of changes in the way ethnicity was recorded after that year.

Table 5: Suicide deaths by ethnicity, age and sex, 2008

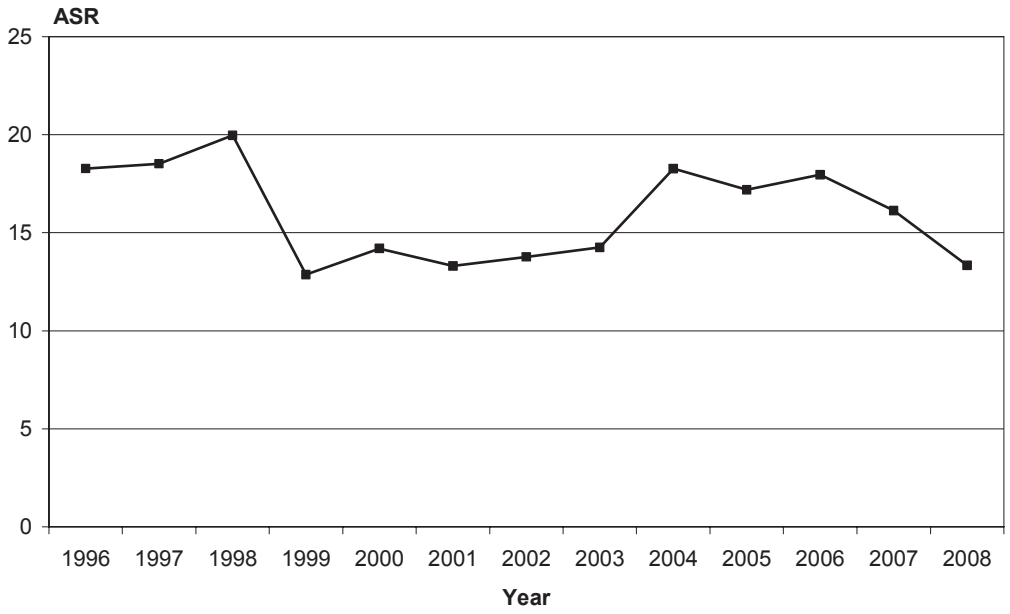
Ethnicity	Sex	Total	Age group (years)															
			10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Māori	Total	82	2	16	17	8	11	9	9	3	3	1	2	0	1	0	0	0
	Males	53	1	4	12	5	11	5	7	2	3	0	2	0	1	0	0	0
	Females	29	1	12	5	3	0	4	2	1	0	1	0	0	0	0	0	0
Pacific	Total	30	0	8	10	5	3	1	2	0	1	0	0	0	0	0	0	0
	Males	25	0	7	9	3	2	1	2	0	1	0	0	0	0	0	0	0
	Females	5	0	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0
Asian	Total	17	0	1	2	2	0	2	2	3	2	0	2	1	0	0	0	0
	Males	9	0	1	0	1	0	0	1	2	2	0	1	1	0	0	0	0
	Females	8	0	0	2	1	0	2	1	1	0	0	1	0	0	0	0	0
Other	Total	368	1	28	33	32	25	35	32	44	32	39	18	14	10	6	12	7
	Males	279	0	19	29	25	21	24	22	34	24	31	16	10	6	5	7	6
	Females	89	1	9	4	7	4	11	10	10	8	8	2	4	4	1	5	1
Total	Total	497	3	53	62	47	39	47	45	50	38	40	22	15	11	6	12	7
	Males	366	1	31	50	34	34	30	32	38	30	31	19	11	7	5	7	6
	Females	131	2	22	12	13	5	17	13	12	8	9	3	4	4	1	5	1

Source: New Zealand Mortality Collection

Māori and non-Māori comparisons

In 2008 the age-standardised suicide death rate for Māori (13.3 deaths per 100,000 Māori population) was higher than that for non-Māori (10.6 deaths per 100,000 non-Māori population), although this difference is not statistically significant. Māori rates (Figure 15) showed no obvious trend in the period 1996–2008, although lower numbers of Māori suicide deaths mean it is harder to ascertain trends. Figure 16 indicates that non-Māori suicide death rates, however, trended downwards over time, with a high R^2 value of 0.81.

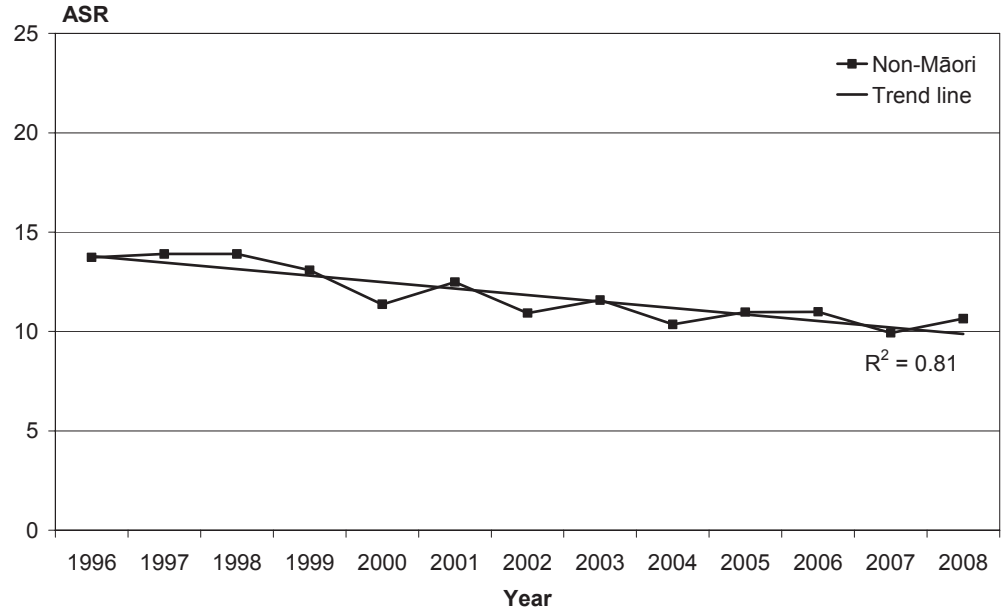
Figure 15: Māori suicide rates, 1996–2008



Source: New Zealand Mortality Collection

Note: The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

Figure 16: Non-Māori suicide rates, 1996–2008



Source: New Zealand Mortality Collection

Notes:

1. R^2 is a measure of how well the data fit the trend line. An R^2 value of 0.81 indicates that 81 percent of the variation in non-Māori suicide deaths over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.
2. The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

Table 6 shows suicide death numbers and age-standardised rates for Māori and non-Māori for the period 1996–2008, for males and females.

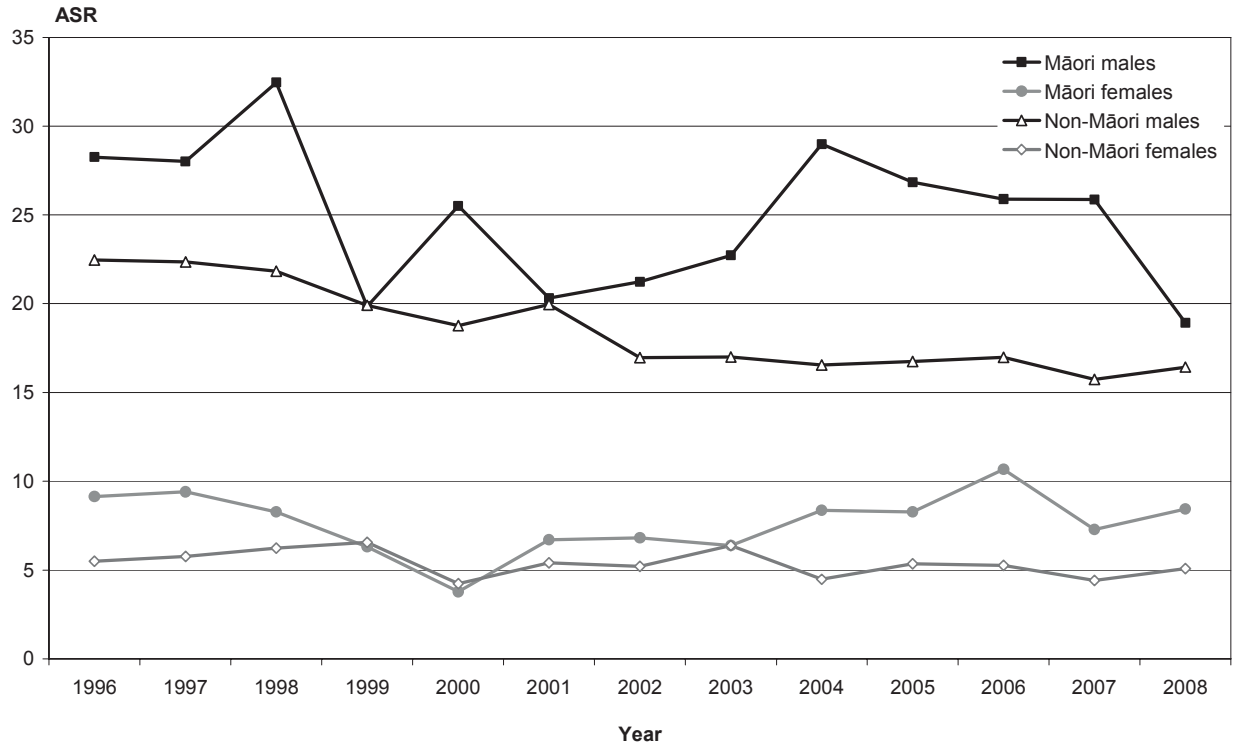
Table 6: Suicide deaths and age-standardised rates for Māori and non-Māori, by sex, 1996–2008

Year	Number of deaths						Age-standardised rate						Rate ratio		
	Māori			Non-Māori			Māori			Non-Māori			Māori:non-Māori		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
1996	71	24	95	357	88	445	28.3	9.1	18.3	22.5	5.5	13.7	1.3	1.7	1.3
1997	77	26	103	363	95	458	28.0	9.4	18.5	22.4	5.8	13.9	1.3	1.6	1.3
1998	87	25	112	358	107	465	32.5	8.3	20.0	21.8	6.2	13.9	1.5	1.3	1.4
1999	58	20	78	327	111	438	19.9	6.3	12.9	19.9	6.6	13.1	1.0	1.0	1.0
2000	69	11	80	306	72	378	25.5	3.8	14.2	18.8	4.2	11.4	1.4	0.9	1.2
2001	57	22	79	331	97	428	20.3	6.7	13.3	20.0	5.4	12.5	1.0	1.2	1.1
2002	59	21	80	294	92	386	21.2	6.8	13.8	17.0	5.2	10.9	1.3	1.3	1.3
2003	67	20	87	309	121	430	22.7	6.4	14.2	17.0	6.4	11.6	1.3	1.0	1.2
2004	82	27	109	297	82	379	29.0	8.4	18.3	16.5	4.5	10.4	1.8	1.9	1.8
2005	78	26	104	302	105	407	26.9	8.3	17.2	16.8	5.4	11.0	1.6	1.5	1.6
2006	75	33	108	313	105	418	25.9	10.7	18.0	17.0	5.3	11.0	1.5	2.0	1.6
2007	74	23	97	297	93	390	25.9	7.3	16.1	15.7	4.4	9.9	1.6	1.6	1.6
2008	53	29	82	313	102	415	18.9	8.4	13.3	16.4	5.1	10.6	1.2	1.7	1.3

Source: New Zealand Mortality Collection

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

Figure 17: Māori and non-Māori suicide death rates, by sex, 1996–2008



Source: New Zealand Mortality Collection

Note: The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

The age-standardised rate of suicide for Māori males was 18.9 deaths per 100,000 population in 2008, compared with the rate for non-Māori males of 16.4 per 100,000 population. This was the lowest rate for Māori males since 1996. The age-standardised rate of suicide for Māori females was 8.4 deaths per 100,000 population in 2008: a higher rate than that for non-Māori females (5.1 per 100,000 population) but not statistically different.

Figure 17 suggests that the declining rate of male suicides between 1996 and 2008 is largely explained by the decrease in the larger non-Māori male group. In contrast, the Māori male rate is volatile, although clearly lower than the peak rate of 32.5 per 100,000 Māori male population in 1998.

Although Māori female rates in this period were usually higher than non-Māori female rates, over time this difference was not statistically significant.

As discussed in the previous section, youth suicide rates remained at high levels between the mid-1990s and 2008. Table 7 shows rates for Māori and non-Māori youth, by sex.

Table 7: Youth suicides and age-specific rates for Māori and non-Māori, by sex, 1996–2008

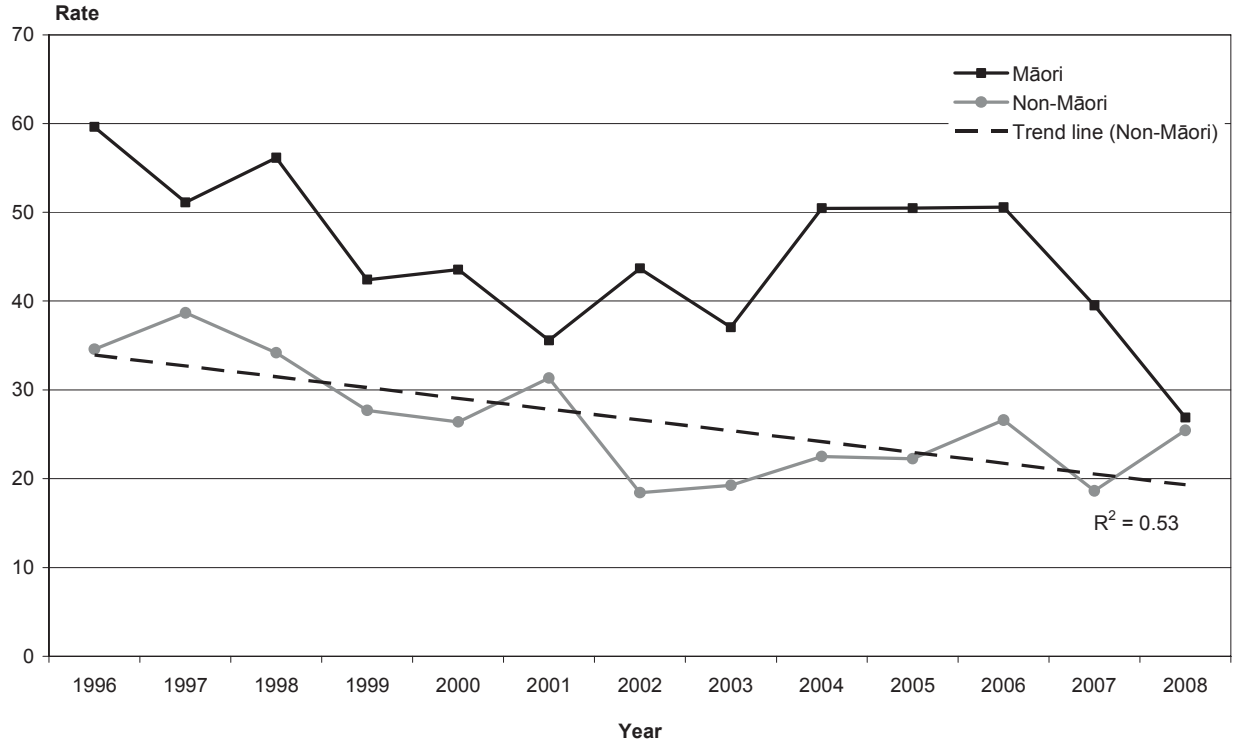
Year	Māori						Non-Māori						Rate ratio		
	Males		Females		Total		Males		Females		Total		Māori:non-Māori		
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	Males	Females	Total
1996	29	59.6	9	17.8	38	38.4	76	34.6	29	13.4	105	24.1	1.7	1.3	1.6
1997	27	51.1	9	16.9	36	33.9	86	38.7	20	9.3	106	24.3	1.3	1.8	1.4
1998	30	56.1	13	24.4	43	40.3	75	34.2	22	10.5	97	22.6	1.6	2.3	1.8
1999	23	42.4	10	18.7	33	30.6	60	27.7	27	13.1	87	20.5	1.5	1.4	1.5
2000	24	43.5	4	7.4	28	25.7	57	26.4	11	5.4	68	16.2	1.6	1.4	1.6
2001	20	35.6	9	16.4	29	26.1	67	31.3	14	6.7	81	19.1	1.1	2.5	1.4
2002	23	43.7	10	18.8	33	31.2	42	18.4	20	9.1	62	13.9	2.4	2.1	2.2
2003	20	37.1	11	20.2	31	28.6	46	19.3	20	8.8	66	14.2	1.9	2.3	2.0
2004	28	50.5	13	23.3	41	36.9	55	22.5	17	7.3	72	15.1	2.2	3.2	2.4
2005	29	50.5	10	17.4	39	34.0	55	22.2	14	6.0	69	14.3	2.3	2.9	2.4
2006	29	50.6	8	13.5	37	31.8	66	26.6	16	6.6	82	16.8	1.9	2.0	1.9
2007	23	39.5	10	16.8	33	28.1	47	18.6	13	5.3	60	12.1	2.1	3.2	2.3
2008	16	26.9	17	28.3	33	27.6	65	25.5	17	6.9	82	16.4	1.1	4.1	1.7

Source: New Zealand Mortality Collection

Note: The rate shown is the age-specific rate: the frequency of suicides relative to particular population age groups.

Māori youth suicide rates in 2008 (27.6 per 100,000 Māori youth population) were about 70 percent higher than those for non-Māori youth (16.4 per 100,000 non-Māori youth population). Although Māori male youth suicide rates were higher than non-Māori rates over the period 1996–2007, in 2008 they were almost identical (Figure 18). While there is some indication of a reduction over time in the non-Māori male youth suicide rate (the R^2 value is 0.53), the Māori male rate is more variable, and does not show the same statistical evidence for a decreasing trend.

Figure 18: Male youth suicide rates, by ethnicity, 1996–2008



Source: New Zealand Mortality Collection

Notes:

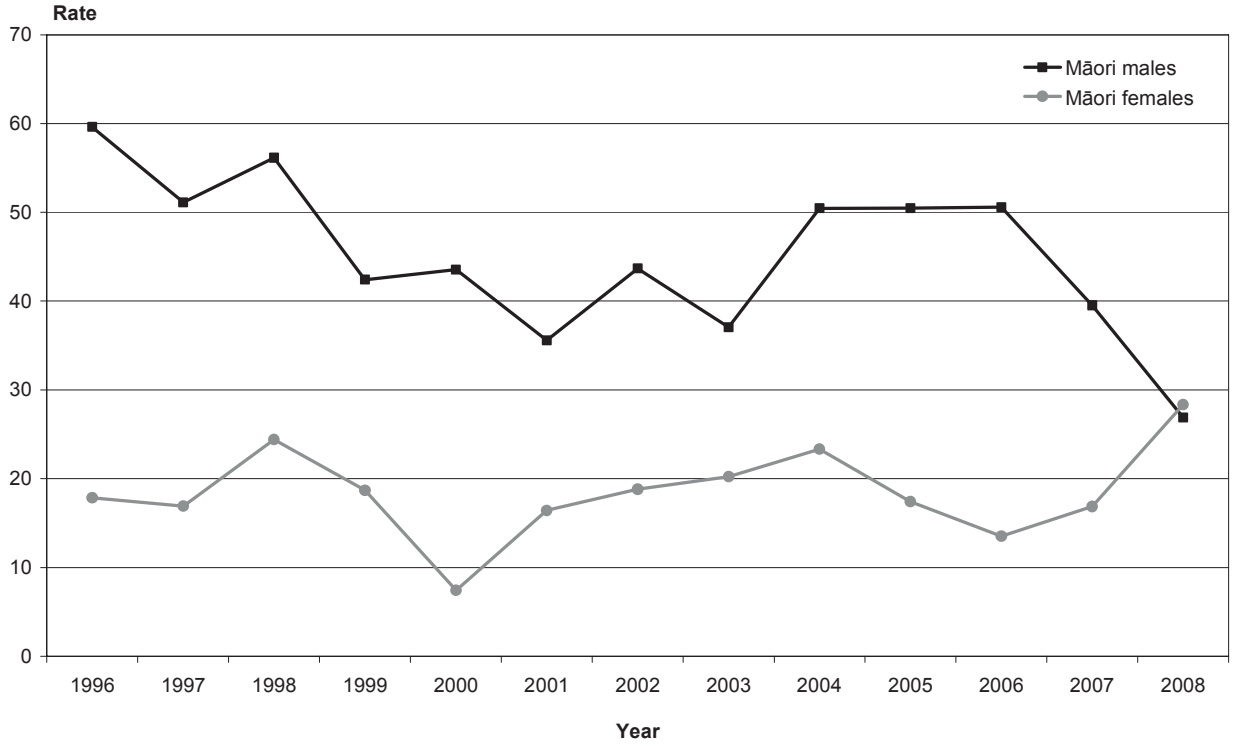
1. R2 is a measure of how well the data fit the trend line. An R2 value of 0.53 indicates that 53 percent of the variation in non-Māori suicide deaths over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.

2. The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

In 2008 the number of female youth suicides (17) was the same for both Māori and non-Māori. However, because of the population disparities, the rate for Māori female youth was more than four times that of non-Māori. This ratio grew over time, from just 1.3 Māori deaths to each non-Māori death in 1996 to the 2008 ratio of 4.1:1.

The small number of Māori female youth deaths over the period means it is not possible to carry out the same analysis as for males. However, as Figure 19 illustrates, the rate of female Māori youth suicides was higher than the male rate in 2008.

Figure 19: Māori youth suicide rates, by sex, 1996–2008



Source: New Zealand Mortality Collection

Note: The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

Deprivation

Deprivation has been associated with various health outcomes. From the social inequalities literature it is evident that those who are most deprived generally experience poorer health (White et al 2008, Benzeval et al 2001). Consequently, suicide mortality and hospitalisation rates for intentional self-harm are presented in this publication by deprivation quintile according to the New Zealand Deprivation Index 2001 (NZDep2001) (Salmond and Crampton 2002). (See the 'Definitions' section of this document for more information on NZDep2001.)

In 2008 the least deprived areas had an age-standardised suicide rate of 8.8 per 100,000 population, compared with 14.1 per 100,000 population in the most deprived areas (Table 8).

Table 8: Suicide numbers and age-standardised rates, by NZDep2001 quintile and sex, 2008

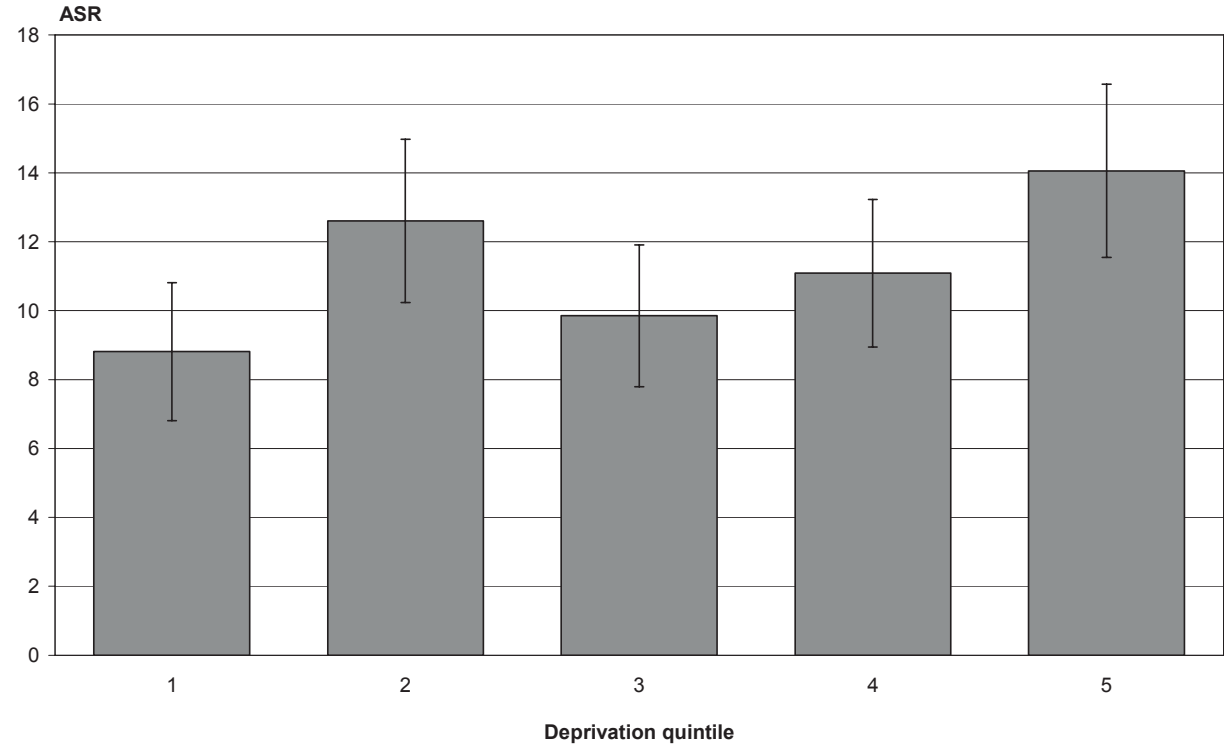
Deprivation quintile		Number of deaths	ASR
1 (least deprived)	Total	74	8.8
	Males	53	12.7
	Females	21	4.8
2	Total	109	12.6
	Males	85	19.8
	Females	24	5.7
3	Total	88	9.9
	Males	57	12.9
	Females	31	6.8
4	Total	103	11.1
	Males	80	17.9
	Females	23	4.6
5 (most deprived)	Total	120	14.1
	Males	89	21.4
	Females	31	7.3

Source: New Zealand Mortality Collection

Note: ASR is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

In previous years, there was a clear pattern of increasing suicide rates from the least deprived quintile to the most deprived. As Figure 20 shows, in 2008 that pattern was disrupted by a high rate in quintile 2. However, it is still clear that the rates for the most deprived quintile were significantly higher than for the least deprived.

Figure 20: Suicide death rates, by NZDep2001 quintile, 2008



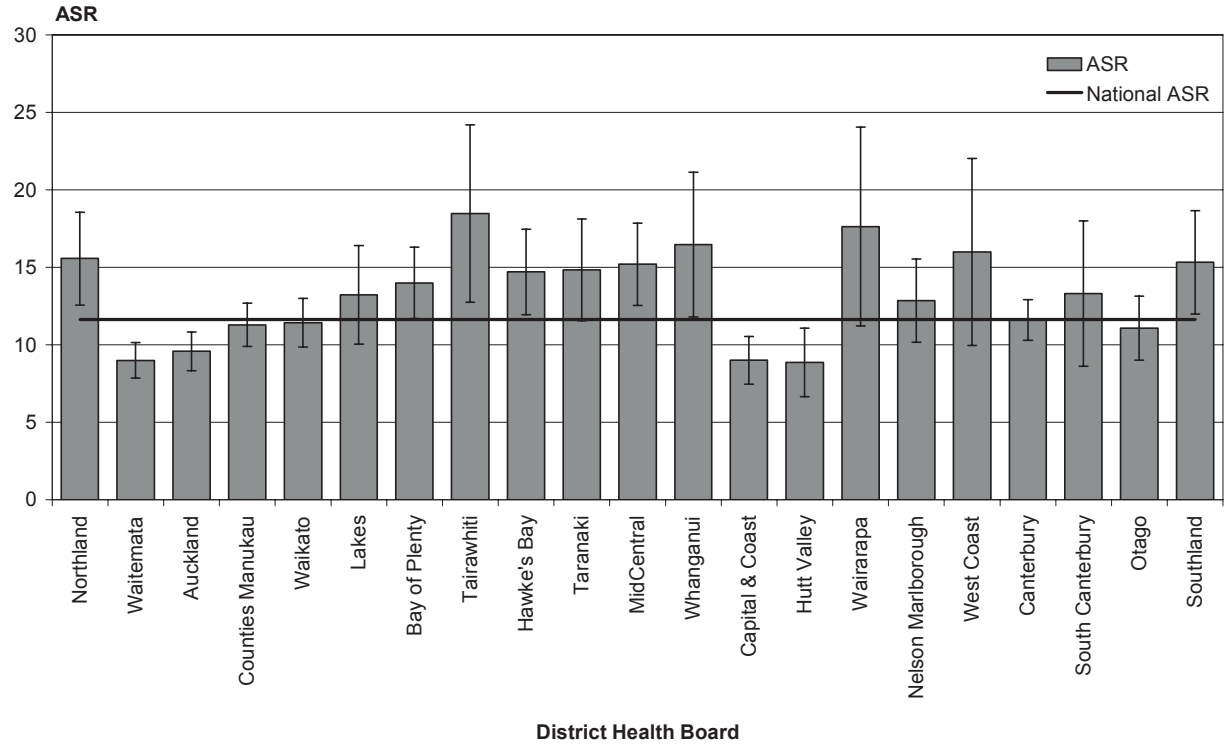
Source: New Zealand Mortality Collection

Note: ASR is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

District Health Boards

In this section, data for DHBs have been aggregated over five years (2004–2008) because the small number of suicides annually in most areas makes analysis using rates uncertain. The New Zealand age-standardised rate for this five-year period has been calculated based on the New Zealand estimated resident populations as at 30 June 2006 (the mid-point) and standardised to the WHO standard world population. The national figure was 11.6 suicides per 100,000 population over the five years, as shown by the horizontal line in Figure 21. Confidence intervals are also provided to aid interpretation.

Figure 21: Suicide death rates, by DHB, 2004–2008



Source: New Zealand Mortality Collection

Notes:

1. ASR is the age-standardised rate per 100,000 population, standardised to WHO standard world population.
2. This graph is based on information presented in Appendix 1, Table A5.

Seven DHB areas (Northland, Bay of Plenty, Tairawhiti, Hawke's Bay, MidCentral, Whanganui and Southland) had significantly higher average suicide rates than the total New Zealand rate for the five years 2004–2008.

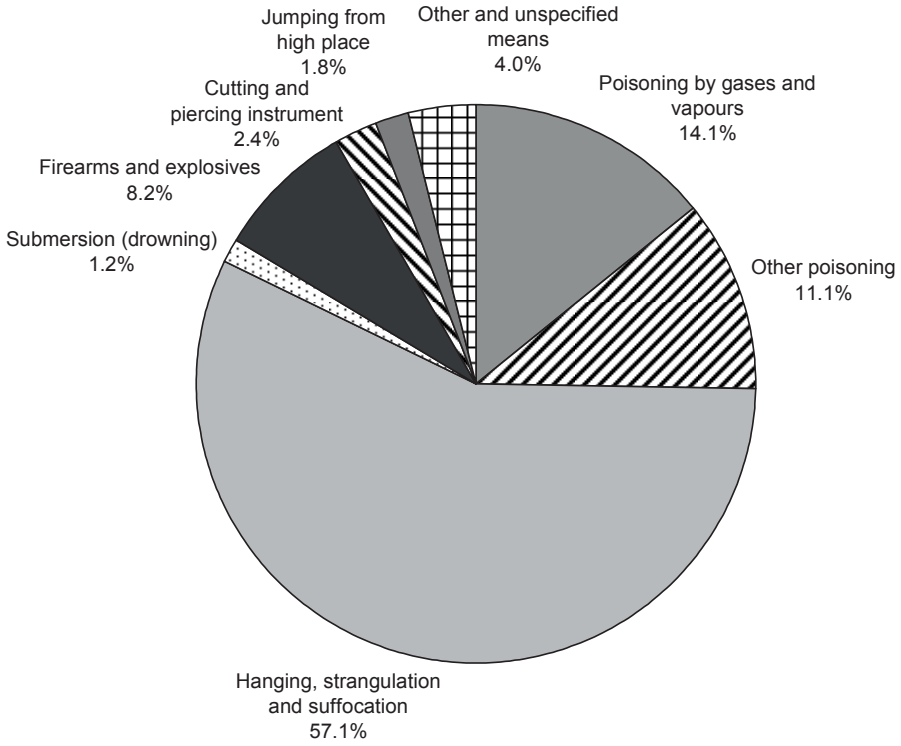
The Waitemata, Auckland, Capital & Coast and Hutt Valley DHB areas had significantly lower average suicide death rates than the country as a whole over the period 2004–2008.

Methods

In 2008 the most common suicide method was hanging, strangulation and suffocation. Figure 22 shows that this method was used in more than half (57.1 percent) of all suicide deaths. Poisoning by gases or vapours was the method used in 14.1 percent of suicides, other poisons were used in 11.1 percent of cases, and firearms and explosives in 8.2 percent of cases.

There was little difference by sex in the use of hanging, strangulation or suffocation as a method (this method accounted for 59.5 percent of female and 56.3 percent of male deaths). After this method, the next most common methods used by males were poisoning by gases or vapours (16.7 percent), and firearms and explosives (10.7 percent). For females, the next most common methods were 'other' poisoning (that is, poisoning by solids and liquids: 24.4 percent) and poisoning by gases and vapours (6.9 percent).

Figure 22: Methods used for suicide deaths, 2008



Source: New Zealand Mortality Collection

As Table 9 shows, between 1997 and 2008 there was a significant increase in the proportion of suicide deaths by hanging, strangulation and suffocation (from 41.4 percent in 1997 to 57.1 percent in 2008). Over the same period suicides from poisoning by gases and vapours significantly decreased, from 28.0 percent of suicide deaths in 1997 to 14.1 percent in 2008.

Table 9: Methods used for suicide deaths, 1997–2008

Year	Poisoning – solids and liquids		Poisoning – gases and vapours		Hanging, strangulation and suffocation		Submersion (drowning)		Firearms and explosives		Other means		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1997	58	10.3	157	28.0	232	41.4	17	3.0	56	10.0	41	7.3	561	100.0
1998	64	11.1	133	23.1	249	43.2	10	1.7	72	12.5	49	8.5	577	100.0
1999	52	10.1	116	22.5	241	46.7	16	3.1	47	9.1	44	8.5	516	100.0
2000	37	8.1	112	24.5	215	46.9	15	3.3	36	7.9	43	9.4	458	100.0
2001	54	10.7	110	21.7	234	46.2	7	1.4	51	10.1	51	10.1	507	100.0
2002	47	10.1	99	21.2	221	47.4	12	2.6	49	10.5	38	8.2	466	100.0
2003	58	11.2	104	20.1	247	47.8	14	2.7	41	7.9	53	10.3	517	100.0
2004	47	9.6	93	19.1	268	54.9	12	2.5	38	7.8	30	6.1	488	100.0
2005	50	9.8	110	21.5	255	49.9	13	2.5	44	8.6	39	7.6	511	100.0
2006	49	9.3	87	16.5	286	54.4	9	1.7	50	9.5	45	8.6	526	100.0
2007	44	9.0	67	13.8	282	57.9	11	2.3	47	9.7	36	7.4	487	100.0
2008	55	11.1	70	14.1	284	57.1	6	1.2	41	8.2	41	8.2	497	100.0

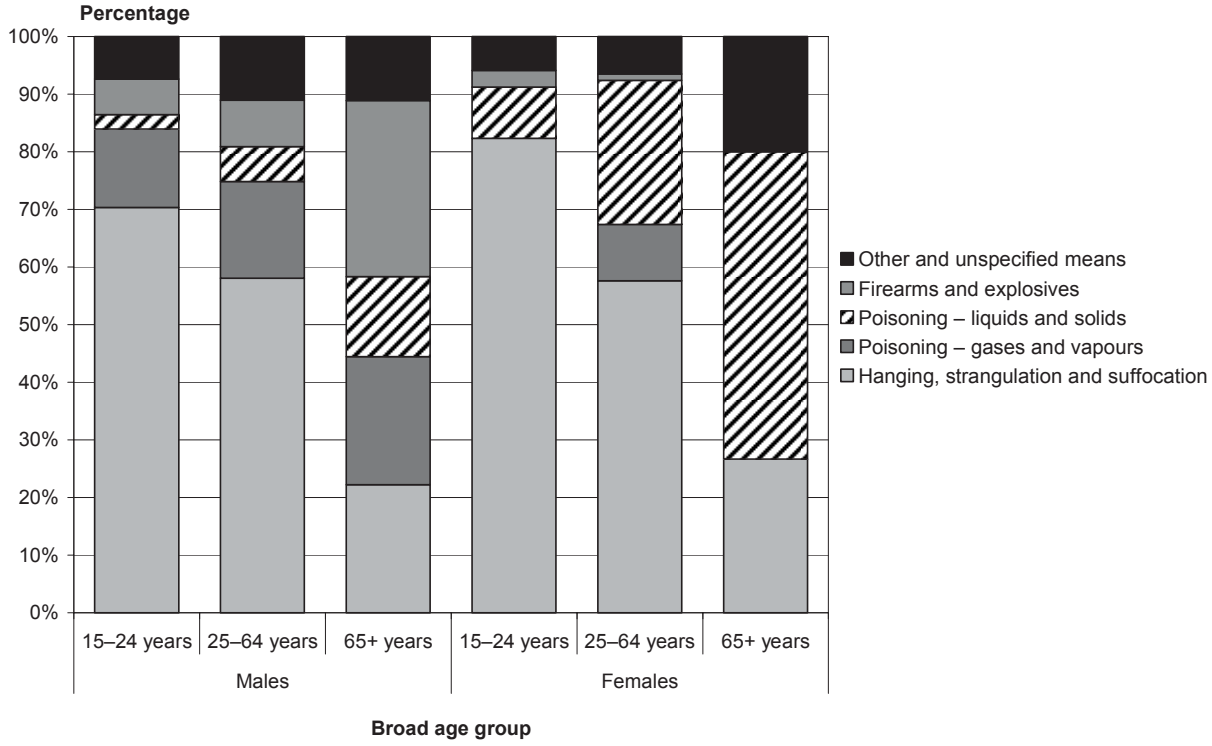
Source: New Zealand Mortality Collection

As Figure 23 illustrates, methods of suicide vary by age and sex. Hanging, strangulation and suffocation were predominantly used by both male (70.4 percent) and female (82.4 percent) youth in 2008, compared to the all-age percentage of 56.3 percent for males and 59.5 percent for females. Poisoning by gases and vapours was the next most common method used by male youth (13.6 percent), whereas no female youth used that method.

For adults aged 25–64 years hanging, strangulation or suffocation was also the preferred method for both sexes (58.1 percent of males and 57.6 percent of females). However, while the second most common method for adult females in this age range was poisoning by liquids and solids (25.0 percent), males tended to use a variety of methods, including poisoning and the use of firearms and explosives.

In the oldest age groups (65 years and older), males most commonly used firearms and explosives (30.6 percent), while more than half (53.3 percent) of females in this age group used poisoning by liquids and solids.

Figure 23: Most common methods of suicide, by sex and broad age group, 2008



Source: New Zealand Mortality Collection

International Comparisons

This section compares New Zealand suicide rates with those from other countries in the Organisation for Economic Co-operation and Development (OECD). A few OECD countries (Portugal, Turkey and Israel) have been omitted from this analysis because no data is available for the most recent years. In general, OECD countries are considered to have reliable data collections, which are often used for comparison with New Zealand health statistics.

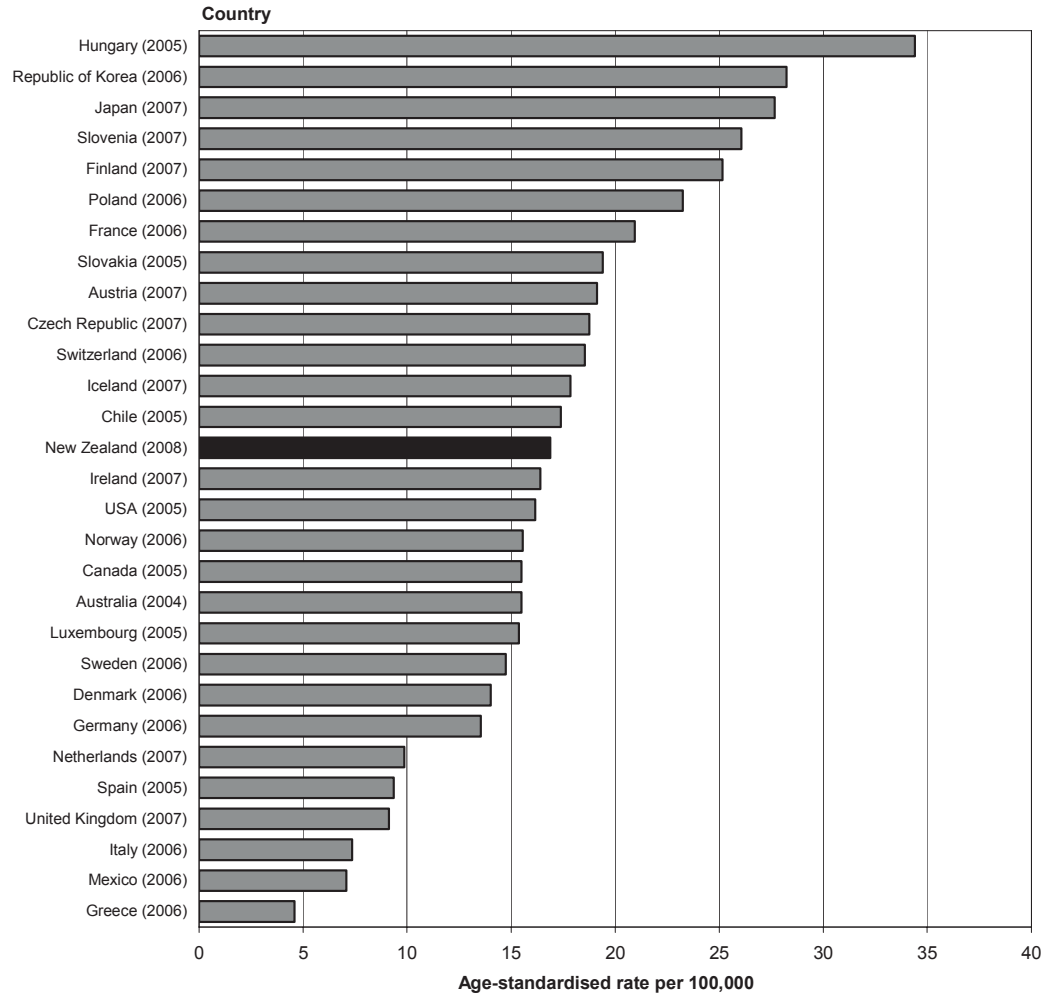
A cautious approach is recommended when comparing international suicide statistics, because many factors affect the recording and classification of suicide in different countries, which may result in undercounts. Potential factors include the level of proof required for a verdict; stigma associated with suicide within a particular society; the religion, social class or occupation of the victim; and confidentiality (Andriessen 2006). As a result, deaths that may be classified as suicide in some countries may be classified as accidental or of undetermined cause in others.

In addition, while the international figures cited here are the latest available from WHO (http://www.who.int/mental_health/prevention/suicide/country_reports/en/), the years they cover are different to those covered by this publication. In particular, note that 2008 data is not yet available for any of the OECD countries, and hence New Zealand rates are being compared with earlier years, in which different social and/or economic conditions may have applied.

All ages

When ranked alongside rates for other OECD countries (Figures 24 and 25) the New Zealand 2008 suicide rate for males is towards the middle of the group. The suicide rate for females is in the upper third of the group. Note that all the OECD countries have higher male than female suicide rates, as New Zealand does.

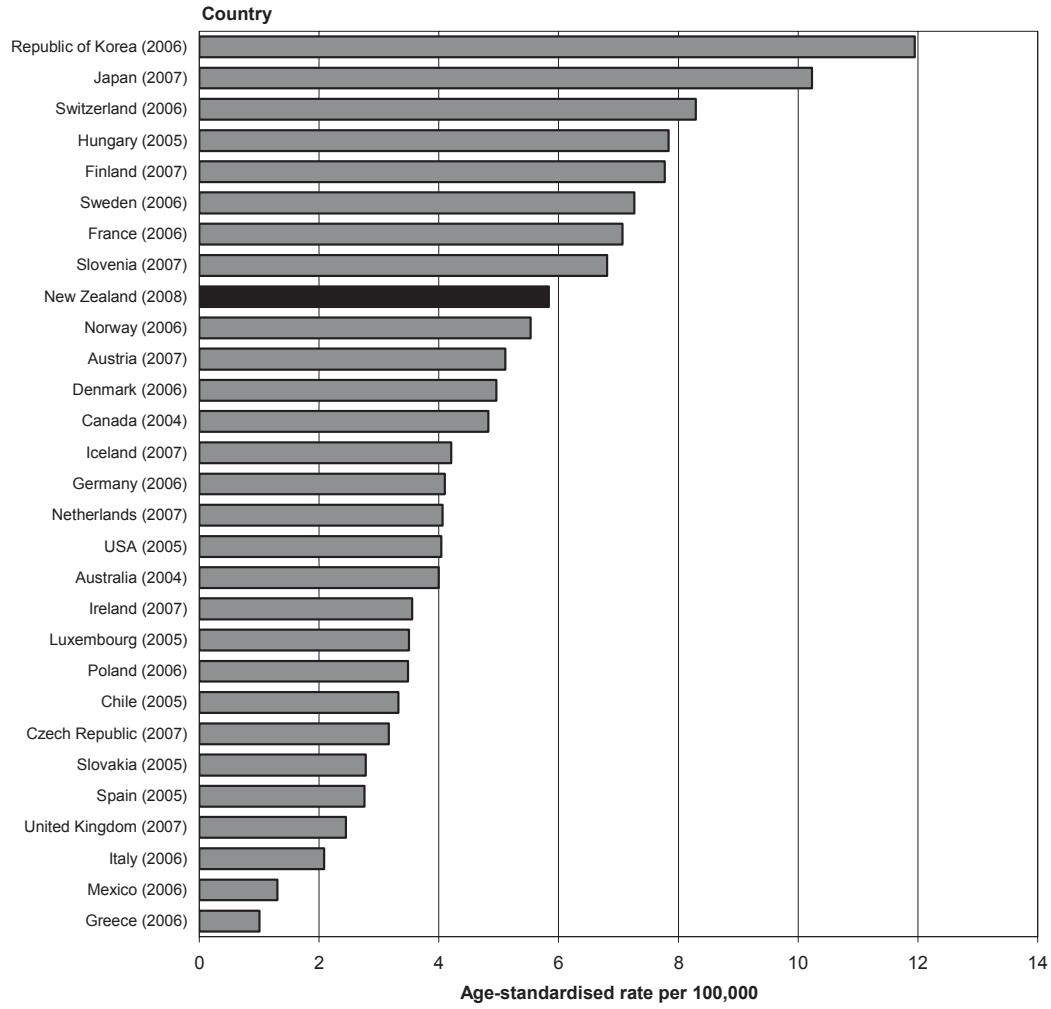
Figure 24: Age-standardised suicide rates for OECD countries, males



Source: WHO: http://www.who.int/mental_health/prevention/suicide/country_reports/en/ (accessed 12 January 2010).

Note: Rates are age-standardised to the WHO standard world population.

Figure 25: Age-standardised suicide rates for OECD countries, females



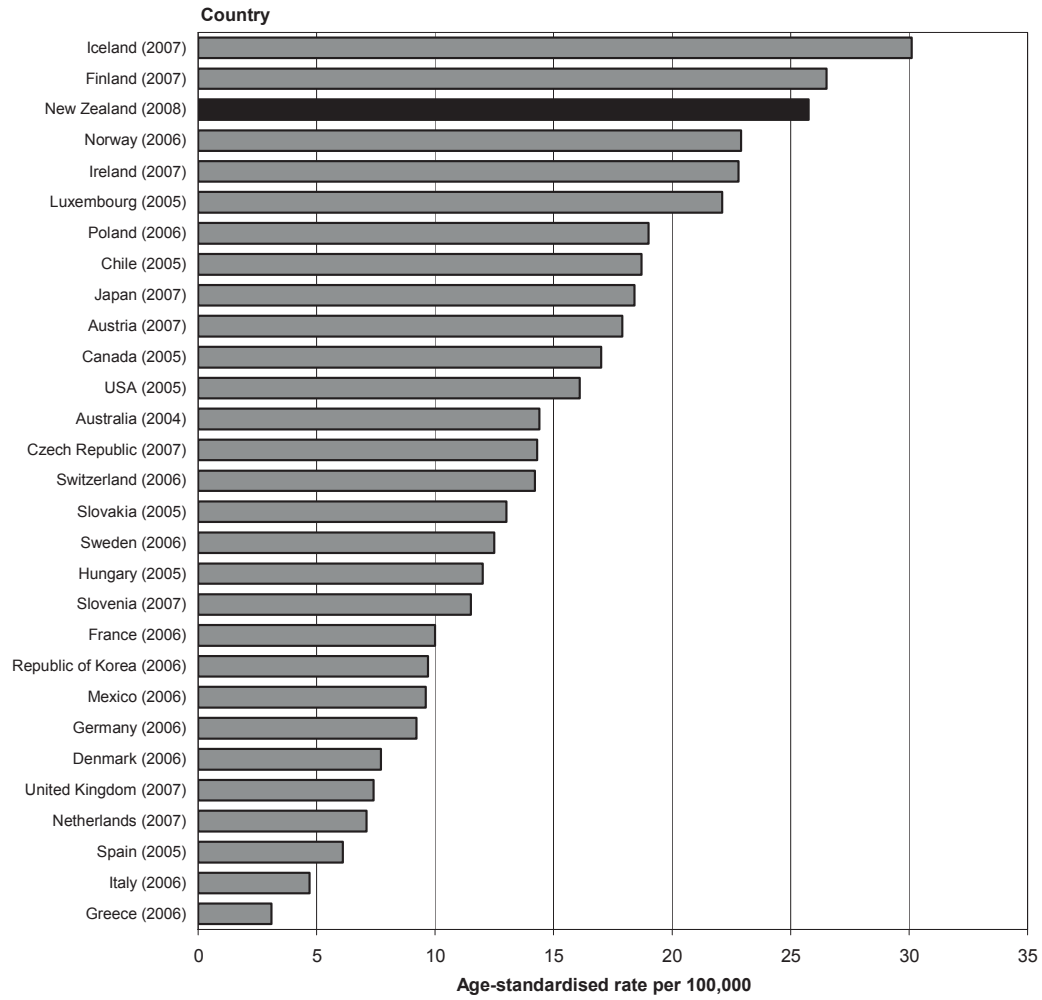
Source: WHO: http://www.who.int/mental_health/prevention/suicide/country_reports/en/ (accessed 12 January 2010).

Note: Rates are age-standardised to the WHO standard world population.

Youth (15–24-year-olds)

When ranked alongside those of other OECD countries, the New Zealand suicide rate for males aged 15–24 years in 2008 was higher than that in any other country except Iceland (2007) and Finland (2007), as Figure 26 shows.

Figure 26: Age-specific suicide rates for OECD countries, males, 15–24 years

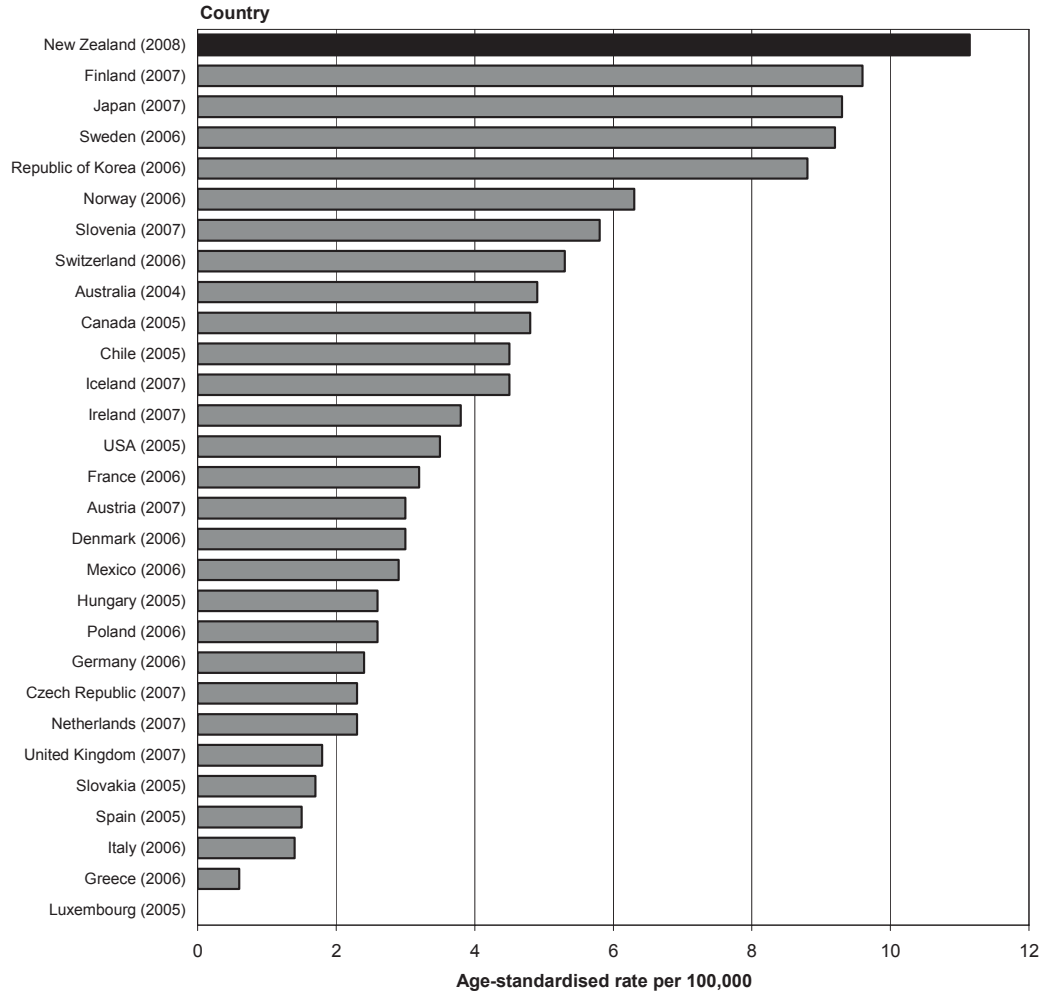


Source: WHO: http://www.who.int/mental_health/prevention/suicide/country_reports/en/ (accessed 12 January 2010).

Note: The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

As Figure 27 shows, when ranked alongside those of other OECD countries, the New Zealand female youth suicide rate in 2008 was higher than that of any other country, including Finland (2007), Japan (2007), Sweden (2006) and the Republic of Korea (2006).

Figure 27: Age-specific suicide rates for OECD countries, females, 15–24 years



Source: WHO: http://www.who.int/mental_health/prevention/suicide/country_reports/en/ (accessed 12 January 2010).

Note: The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

Adults

For completeness, Table 10 provides a brief overview of New Zealand's suicide rates for adult age groups in comparison to other OECD countries. As stated before, this data should be approached with caution, because of the variety of factors affecting the recording and classification of suicide in different countries. In addition, rates for the 65+ age group are generally considered to be unreliable due to small numbers in either the numerator (number of deaths) or the denominator (population in that age group).

Because of limitations in the data available from WHO, the rates in Table 10 are calculated in a slightly different way to those in the rest of this report. They are age-standardised, according to the WHO standard world populations for the appropriate age group.

Table 10: Age-standardised suicide rates for OECD countries, by age-group and sex

Country	Age-specific rate per 100,000 population					
	25–44		45–64		65+	
	Males	Females	Males	Females	Males	Females
Australia (2004)	26.1	6.0	18.2	5.3	21.7	4.5
Austria (2007)	20.2	5.4	31.2	9.0	48.7	15.1
Canada (2005)	22.3	6.4	23.1	8.4	17.6	4.8
Chile (2005)	22.9	4.3	24.7	4.9	29.1	2.0
Czech Republic (2007)	23.0	3.2	32.6	6.2	38.4	7.7
Denmark (2006)	16.3	5.3	22.5	9.2	42.4	12.8
Finland (2007)	33.2	8.9	39.9	14.2	42.4	9.4
France (2006)	27.8	8.6	35.9	14.5	48.3	13.9
Germany (2006)	15.0	4.2	23.2	7.9	36.1	10.8
Greece (2006)	5.9	1.3	7.8	2.2	10.0	1.0
Hungary (2005)	40.4	8.1	70.0	16.7	80.7	21.2
Iceland (2007)	27.1	7.0	15.6	5.6	22.1	3.6
Ireland (2007)	24.0	4.1	21.2	7.4	14.9	2.5
Italy (2006)	8.7	2.5	12.0	3.9	20.3	4.2
Japan (2007)	34.6	13.4	54.0	15.5	45.4	20.0
Luxembourg (2005)	14.6	5.4	17.5	9.0	48.1	1.9
Mexico (2006)	9.5	1.4	8.2	1.2	11.1	0.9
Netherlands (2007)	13.2	4.9	17.7	8.5	11.1	6.1
New Zealand (2008)	23.4	7.7	22.9	6.0	14.6	5.1
Norway (2006)	20.4	6.2	19.9	11.7	21.6	4.3
Poland (2006)	29.0	3.5	43.8	6.9	33.4	6.8
Republic of Korea (2006)	22.8	12.3	51.8	14.8	117.8	46.5
Slovakia (2005)	23.2	2.9	39.6	5.8	32.1	5.4
Slovenia (2007)	28.5	4.2	48.6	16.2	75.8	17.3
Spain (2005)	11.9	3.2	13.1	4.7	27.3	7.4
Sweden (2006)	16.9	8.9	25.5	11.5	31.9	9.5
Switzerland (2006)	19.9	7.7	31.7	14.9	49.0	25.3
United Kingdom (2007)	15.2	3.4	13.2	4.5	9.6	3.1
USA (2005)	21.4	5.7	23.9	7.2	28.3	4.0
MEDIAN	22.3	5.4	23.2	7.9	31.9	6.1
MAXIMUM	40.4	13.4	70.0	16.7	117.8	46.5
MINIMUM	5.9	1.3	7.8	1.2	9.6	0.9

Source: WHO: http://www.who.int/mental_health/prevention/suicide/country_reports/en/ (accessed 12 January 2010).

Note: The rates in this figure are standardised to the WHO standard world population for the relevant age group.

When ranked alongside that of other OECD countries, the New Zealand suicide rate for males aged 25–44 years in 2008 was slightly higher (23.4 per 100,000 population) than the median value (22.3 per 100,000 population). However, for females in this age group, New Zealand ranks in the highest quartile (7.7 suicide deaths per 100,000 population, compared to the median 5.4 per 100,000 population).

For males aged 45–64 years, the New Zealand suicide rate in 2008 was again in a central grouping, but was slightly lower (22.9 per 100,000 population) than the median value (23.2 per 100,000 population). For females in this age group, New Zealand ranks in the bottom third (6.0 deaths per 100,000 population, compared to the median 7.9 per 100,000 population).

For the group aged over 65 years, the New Zealand suicide rate for males was one of the lowest in the OECD countries (14.6 per 100,000 population) compared to the median value (31.9 per 100,000 population). For females in this age group, New Zealand ranks in the bottom half (5.1 deaths per 100,000 population, compared to the median 6.1 per 100,000 population).

Intentional Self-harm Hospitalisations in 2008

The data

This section presents data on hospital admissions involving intentional self-harm, focusing on 2008. Data has also been extracted from 1996 onwards for comparison of trends (hospitalisation data can only be compared back to this year because of changes in recording and reporting of data in July 1995). Please note that the data used in this publication has been filtered in a different way to those in Ministry of Health publications prior to *Suicide Facts: Deaths and intentional self-harm hospitalisations 2006*, and therefore direct comparisons cannot be drawn between them. However, 2007 and 2008 filtering methods were the same as those used in 2006, and hence comparisons across these three years are possible.

When considering all the information in this section, it is extremely important to note that a large subset of the data has been removed. This is because DHBs had differing admission practices, which resulted in differences in data reported. The excluded data represent patients who were discharged from an emergency department with a length of stay of less than two days. It is evident in Table 11 that these events have been reported very differently within single DHBs since 1996. After removing the data that is clearly inconsistent, the remaining data can be used to make meaningful comparisons across years and DHBs.

The data in Table 11 below show admissions that have been excluded from the main 1996–2008 data presented in this document.

Table 11: Numbers of short-stay emergency department hospitalisations involving intentional self-harm, 1996–2008 (excluded from this publication)

	District Health Board of domicile	Year of discharge												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
North Island	Northland					8	18	35	38	43	56	73	66	63
	Waitemata		9	7	104	206	313	452	380	320	310	370	422	468
	Auckland	151	126	92	62	248	387	396	383	444	419	489	462	518
	Counties Manukau	120	94	133	173	250	311	372	376	373	451	436	468	505
	Waikato	8	9	20	23	56	128	166	185	203	224	245	71	148
	Lakes		2	1	2	4	13	35	39	56	59	53	53	75
	Bay of Plenty				1	12	1		13	12	5	22	70	91
	Tairawhiti				3	2								
	Taranaki	3	3	2	1	4	4	11	24	7	1			25
	Hawke's Bay		2			1						43	67	88
	MidCentral									19	114	131	181	177
	Whanganui				2	1	3	20	12	13	11	16	18	44
	Capital & Coast	6	5	4	4		2	1	1	3	2	7	1	20
	Wairarapa	4	2											
	North Island 'Other'	1				1								
South Island	Nelson Marlborough	6	10	3	2	5	2							18
	West Coast	15	10	7	8	9	14	20	14	9	23	3	4	
	Canterbury	13	117	246	309	342	433	460	508	408	443	519	427	514
	South Canterbury		1							1				
	Otago	3	10	15	12	64	84	82	104	154	136	122	134	105
	Southland	2	4	9	3	8	1		1	1	1	18	18	26
	South Island 'Other'				4	6	11	4	8	15	12	4	2	10
Total New Zealand		**332**	**404**	**539**	**713**	**1227**	**1725**	**2054**	**2086**	**2081**	**2267**	**2551**	**2464**	**2895**

Source: New Zealand National Minimum Dataset

Notes:

1. A 'short stay' is a stay of one day or less; see the 'Technical notes' section of this publication for more detail.
2. There were no events excluded from the dataset for Hutt Valley DHB.

Further, the data presented here also exclude any readmissions for an intentional self-harm incident within two days of a previous discharge involving intentional self-harm (see Table 12). It is not unusual for patients to be transferred between hospitals after an intentional self-harm event, and in many cases such transfers were being counted as an additional admission. These admissions usually occurred within two days of the previous discharge, and artificially inflated the numbers of recorded admissions. Therefore, for the sake of consistency, and to give a more accurate picture of changes within the population, all readmissions involving intentional self-harm within two days of a previous admission for intentional self-harm have been removed from the dataset.

Table 12: Numbers of hospitalisations involving intentional self-harm within two days of a previous intentional self-harm hospitalisation, 1996–2008 (excluded from this publication)

	District Health Board of domicile	Year of discharge												
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
North Island	Northland	8	3	11	11	17	15	11	16	20	15	8	13	11
	Waitemata	16	16	14	20	42	36	28	44	58	34	44	45	43
	Auckland	6	17	37	31	28	20	35	32	27	19	16	16	23
	Counties Manukau	2	7	12	21	22	19	16	9	11	9	10	15	13
	Waikato	21	9	22	31	44	77	58	34	42	52	29	31	27
	Lakes	6	11	7	4	12	14	16	10	6	3	6	11	7
	Bay of Plenty	3	7	8	18	31	15	9	14	23	20	11	21	21
	Tairawhiti	1	4	7	1	1	8	5	4	3	5	2	7	3
	Taranaki	12	4	9	18	24	18	10	14	17	20	25	19	18
	Hawke's Bay	3	9	5	1	9	9	3	5	2	1	7	1	4
	MidCentral	8	11	21	21	23	11	21	19	21	11	15	11	9
	Whanganui	2	3	5	6	2	2	2	1		1		5	1
	Capital & Coast	27	18	14	13	20	16	5	14	14	7	8	12	10
	Hutt Valley	5	8	15	32	15	23	40	32	12	9	10	16	5
	Wairarapa	5	4	4	2	4	4	6	7	2		2	1	8
South Island	Nelson Marlborough	2	8	3		2	2	2	5	5	5	8	7	3
	West Coast	7	5	3	8	13	12	12	19	10	14	9	10	8
	Canterbury	10	9	25	79	70	94	57	82	81	57	50	29	14
	South Canterbury	1	3	1	4	11	11	10	12	6	3	6	3	1
	Otago	9	16	6	2	7	8	10	6	11	8	8	12	7
	Southland	2	5	2	4	11	12	9	7	4	7	7	10	5
	Other	1	2	3	3	2		2	2		2	1	1	
Total New Zealand		**157**	**179**	**234**	**330**	**410**	**426**	**367**	**388**	**375**	**302**	**282**	**296**	**241**

Source: New Zealand National Minimum Dataset

After removing inconsistent data (that is, that data shown in Tables 11 and 12), any trends found within the remaining data are more likely to be due to changes in population behaviour, rather than changes in administrative procedures within or across DHBs.

The Ministry of Health is addressing inconsistencies of data collection, and in 2009 put a system in place to enable all DHBs to manage and report emergency department cases in a consistent manner.

The hospitalisations for intentional self-harm data recorded in this publication do not therefore present total numbers of people receiving hospital treatment for intentional self-harm. Even once consistency issues between DHBs are addressed, the total extent of intentional self-harm will still be difficult to capture, because many people who intentionally self-harm do not seek hospital treatment. *Te Rau Hinengaro: The New Zealand Mental Health Survey* estimated that in the 12 months prior to that survey (conducted in late 2003/early 2004), 0.4 percent of the population (400 per 100,000 population) had reported an attempted suicide (Oakley Browne et al 2006, p 99). An estimate based on these figures would result in a much higher number than the 2465 intentional self-harm events reported in this document for 2008.

In summary, the data used within this section of the report have been filtered to allow the best possible chance of identifying real trends in intentional self-harm behaviour within the New Zealand population and to allow regional comparison. They are not intended to represent a total count of people who have received hospital treatment for an intentional self-harm event.

Overview

Taking into account that a subset of the data has been removed (as explained above), the total number of hospitalisations involving intentional self-harm showed a steady decrease between 1996 and 2008.

Table 13 shows a decline from 3030 hospitalisations in 1996 to 2465 hospitalisations in 2008. When expressed as age-standardised rates per 100,000 population, this decline represents a significant downward trend, from 85.8 per 100,000 population in 1996 to 58.2 per 100,000 population in 2008: a drop of 32.2 percent (see Figure 28).

Table 13: Numbers and rates of hospitalisations involving intentional self-harm, 1996–2008

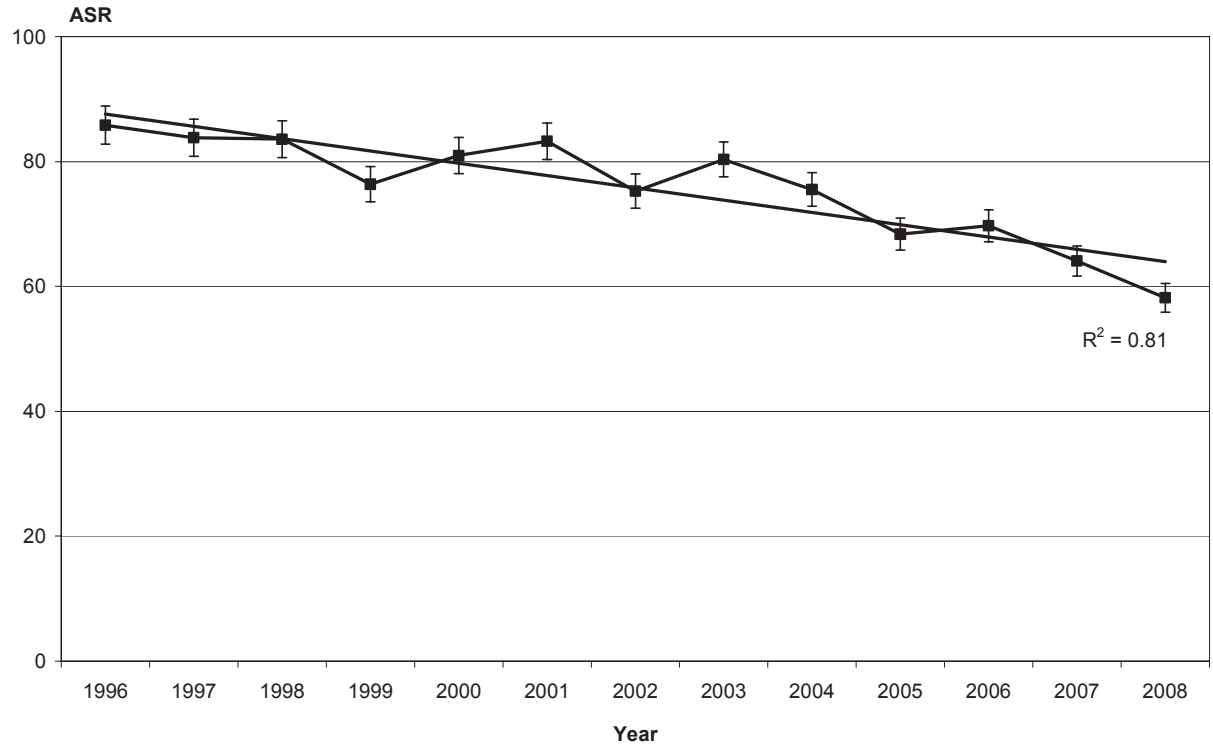
Year	Total	
	Number	Rate
1996	3030	85.8
1997	3074	83.8
1998	3103	83.6
1999	2838	76.4
2000	3017	81.0
2001	3136	83.3
2002	2902	75.3
2003	3142	80.3
2004	3000	75.5
2005	2743	68.4
2006	2869	69.7
2007	2686	64.1
2008	2465	58.2

Source: New Zealand National Minimum Dataset

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

This significant difference may in part be due to a real change in behaviour within the population, but it is also very likely to be due to changes in medical practice and medical administration over the last decade. For example, the move towards community-based mental health care will almost certainly be reducing the numbers of people who may previously have been admitted to inpatient mental health services following an intentional self-harm event. In addition, the increased use of stomach pumps in emergency departments may have resulted in fewer admissions.

Figure 28: Hospitalisation rates involving intentional self-harm, 1996–2008



Source: New Zealand National Minimum Dataset

Notes:

1 The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

2 R^2 is a measure of how well the data fit the trend line. An R^2 value of 0.81 indicates that 81 percent of the variation in hospitalisations over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.

Sex

It is well documented that females are more likely to be hospitalised for intentional self-harm than males (Berry and Harrison 2006). In 2008 there were 1589 intentional self-harm hospitalisations recorded for females, compared to 876 for males. Expressed as an age-standardised rate, this represents 74.4 hospitalisations per 100,000 females and 41.9 hospitalisations per 100,000 males (Table 14).

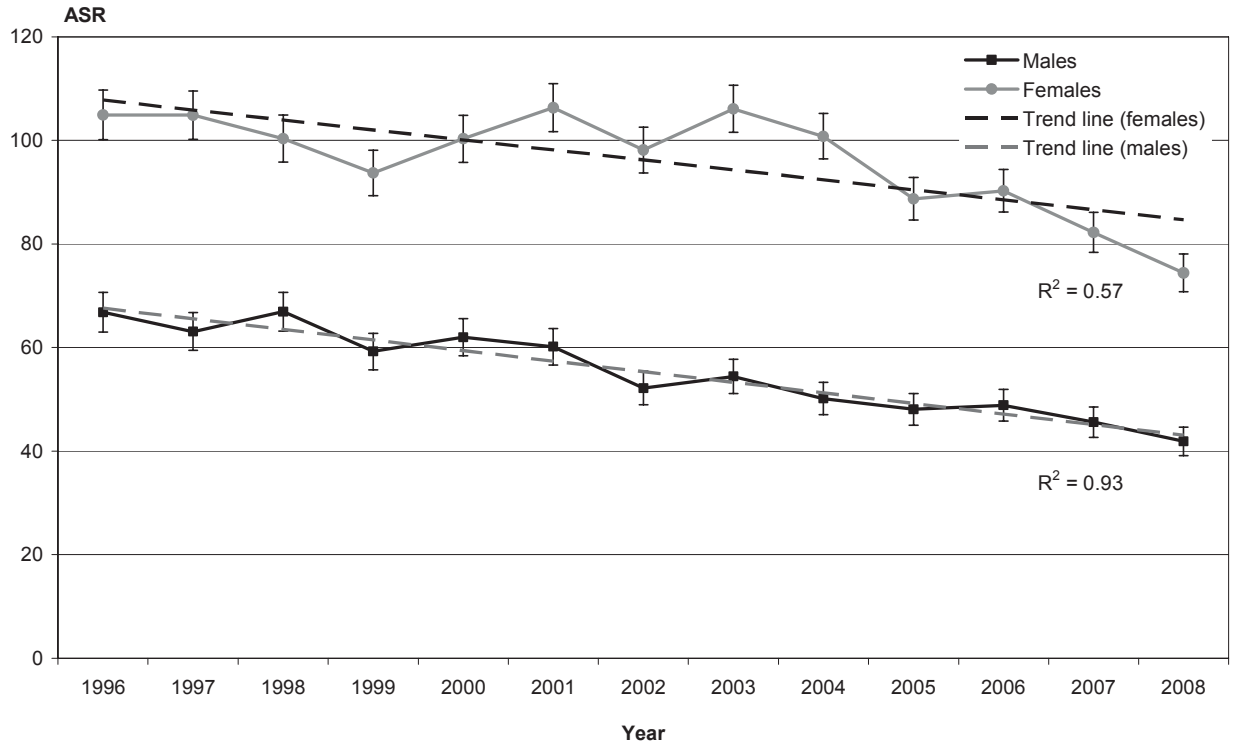
Table 14: Male and female hospitalisations involving intentional self-harm: numbers, rates and female-to-male ratio, 1996–2008

Year	Male		Female		Rate ratio (F:M)
	Number	Rate	Number	Rate	
1996	1173	66.8	1857	104.9	1.6
1997	1156	63.1	1918	104.9	1.7
1998	1229	66.9	1874	100.3	1.5
1999	1089	59.2	1749	93.7	1.6
2000	1148	62.0	1869	100.3	1.6
2001	1114	60.1	2022	106.3	1.8
2002	994	52.2	1908	98.2	1.9
2003	1049	54.4	2093	106.1	2.0
2004	982	50.1	2018	100.8	2.0
2005	953	48.1	1790	88.7	1.8
2006	991	48.9	1878	90.3	1.8
2007	940	45.6	1746	82.2	1.8
2008	876	41.9	1589	74.4	1.8

Source: New Zealand National Minimum Dataset

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

Figure 29: Male and female hospitalisation rates involving intentional self-harm, 1996–2008



Source: New Zealand National Minimum Dataset

Notes:

1 The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

2 R^2 is a measure of how well the data fit the trend line. For example, an R^2 value of 0.93 indicates that 93 percent of the variation in hospitalisations over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.

There was a decrease of 29.1 percent in the rate of female hospitalisations for intentional self-harm between 1996 and 2008. Fitting a linear trend line yields an R^2 value of 0.57, which indicates that more than half the variation over time can be attributed to a downward trend. Between 1996 and 2008 the male rate of intentional self-harm hospitalisations reduced from 66.8 to 41.9 per 100,000 male population: a decrease of 37.3 percent. The high R^2 value of 0.93 (see Figure 29) confirms that this reduction is highly significant.

As well as numbers and rates, Table 14 shows the female-to-male ratio for intentional self-harm hospitalisations. This ratio remained steady at 1.8:1 between 2005 and 2008.

In summary, numbers and rates of both males and females being hospitalised for intentional self-harm events fell between 1996 and 2008. The decrease in male hospitalisation rates in particular appears to be significant rather than due to chance.

Age

In 2008 the age group with the highest number of hospitalisations for intentional self-harm and the highest age-specific rate was that of 15–19-year-olds (see Table 15).

Table 15: Numbers and rates of male and female hospitalisations involving intentional self-harm, by five-year age group, 2008

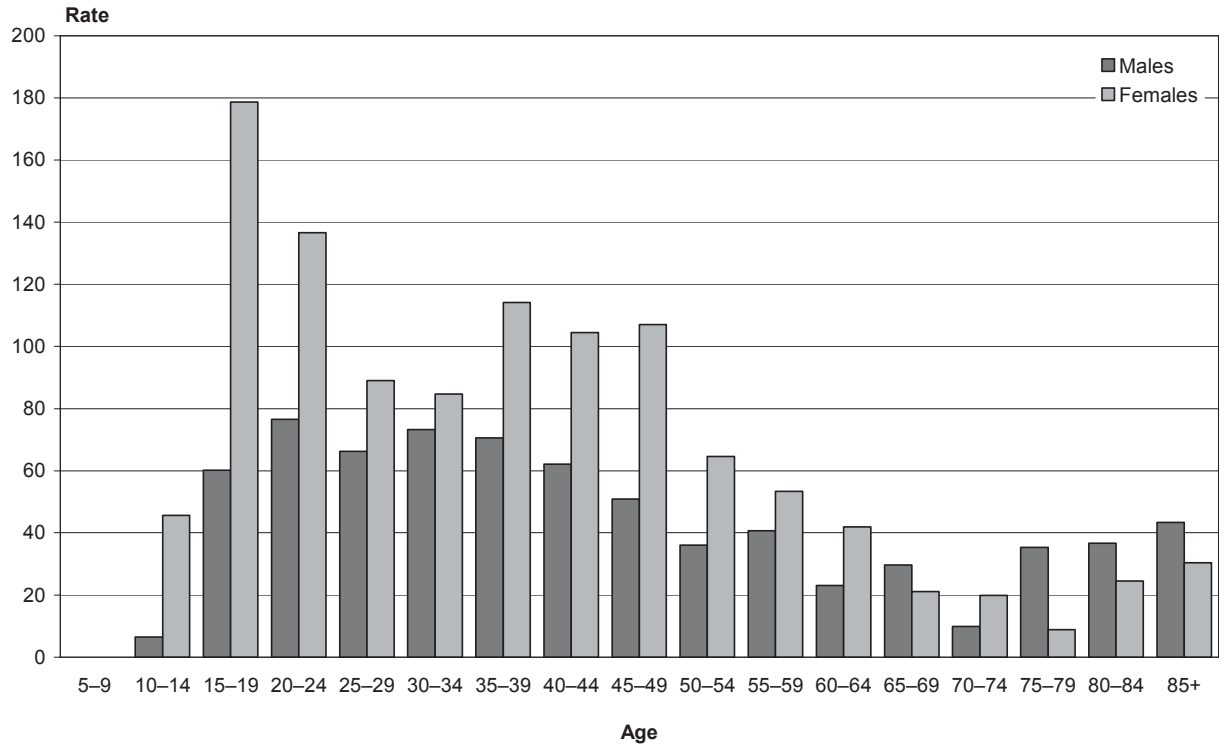
Age group (years)	Males		Females		Total	
	Number	Rate	Number	Rate	Number	Rate
5–9	0	–	0	–	0	–
10–14	10	6.5	67	45.6	77	25.5
15–19	99	60.1	282	178.7	381	118.1
20–24	115	76.6	201	136.6	316	106.3
25–29	89	66.2	124	89.0	213	77.8
30–34	95	73.2	120	84.7	215	79.2
35–39	105	70.6	187	114.1	292	93.4
40–44	94	62.0	170	104.5	264	84.0
45–49	79	50.9	176	107.1	255	79.8
50–54	49	36.1	91	64.6	140	50.6
55–59	49	40.7	66	53.3	115	47.1
60–64	24	23.1	45	41.9	69	32.7
65–69	24	29.6	18	21.1	42	25.2
70–74	6	9.9	13	19.8	19	15.1
75–79	17	35.3	5	8.9	22	21.0
80–84	12	36.7	11	24.5	23	29.6
85+	9	43.4	13	30.4	22	34.6
	876	**41.9**	**1589**	**74.4**	**2465**	**58.2**

Source: New Zealand National Minimum Dataset

Note: A dash (–) indicates that the rate has been suppressed because there were fewer than four hospitalisations in the category.

For females, the 15–19-year age group had the greatest number and highest rate of intentional self-harm hospitalisations, the second highest being that of the 20–24 year age group. For males, the highest number and rate occurred in the of 20–24 year age group. However, rates were also high in the 30–34 year and 35–39 year age groups. These age-specific rates are shown in Figure 30.

Figure 30: Hospitalisation rates involving intentional self-harm, by age group and sex, 2008

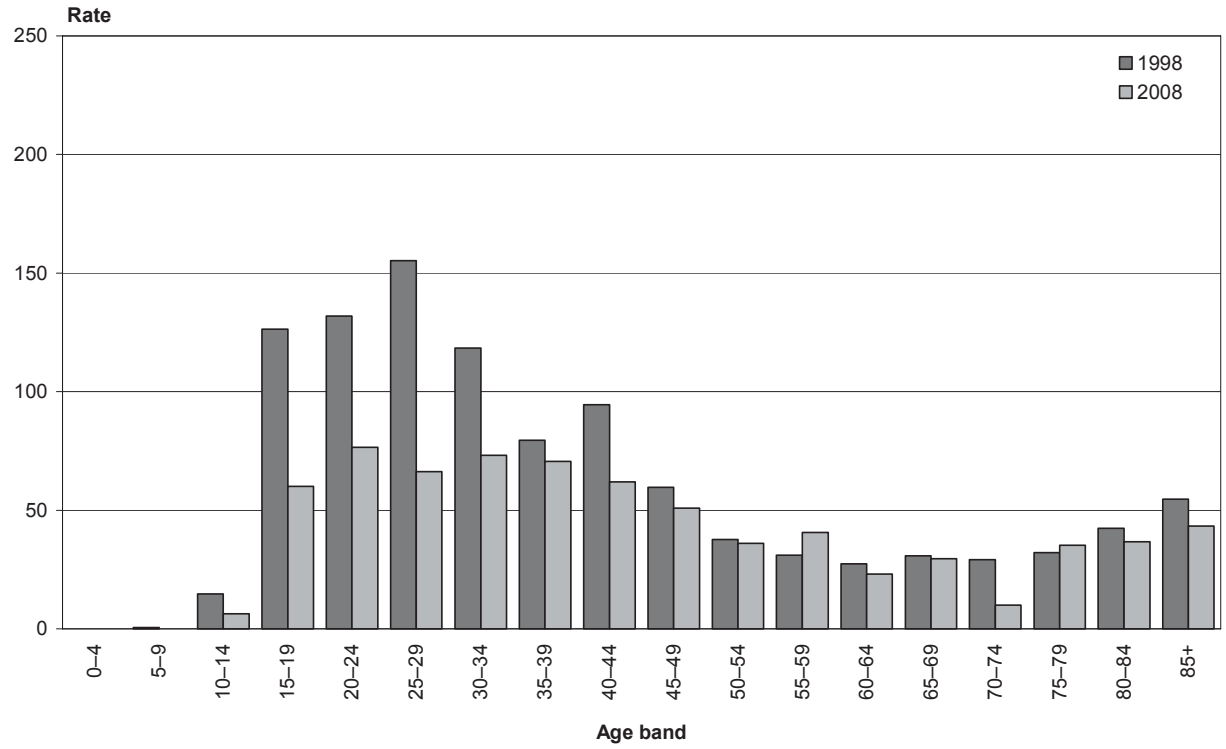


Source: New Zealand National Minimum Dataset

Note: The rate in this figure is the age-specific rate: the frequency of hospitalisations relative to particular population age groups.

Figures 31 and 32 show a 'snapshot' age-group comparison between 1998 and 2008 male and female intentional self-harm hospitalisation rates. Figure 30 indicates that the downward trend in male rates referred to earlier was most marked through the ages 15–34.

Figure 31: Male hospitalisation rates involving intentional self-harm, by age group, 1998 and 2008

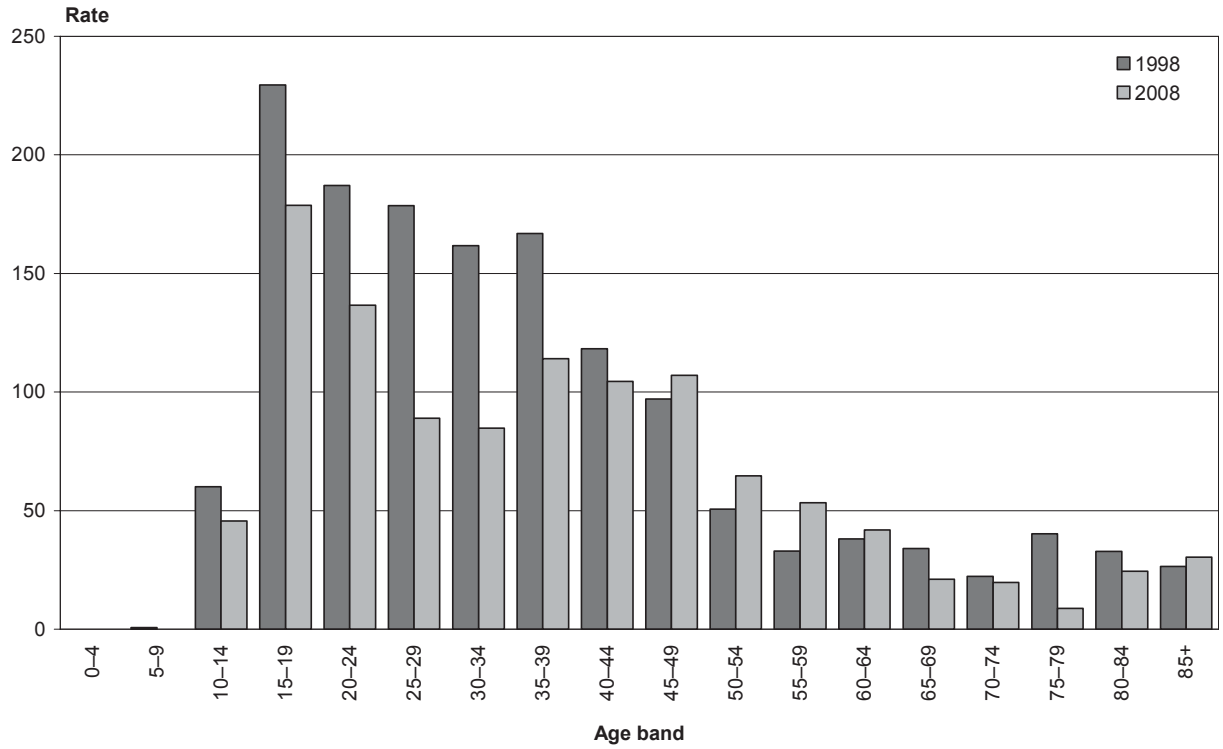


Source: New Zealand National Minimum Dataset

Note: The rate in this figure is the age-specific rate: the frequency of hospitalisations relative to particular population age groups.

The female rates show a similar pattern, although there is some indication of an increase in hospitalisations in the 45–59-year age groups.

Figure 32: Female hospitalisation rates involving intentional self-harm, by age group, 1998 and 2008



Source: New Zealand National Minimum Dataset

Note: The rate in this figure is the age-specific rate: the frequency of hospitalisations relative to particular population age groups.

Youth

In the 13 years between 1996 and 2008 age-specific rates of hospitalisations involving intentional self-harm for youths aged 15–24 decreased by 44.0 percent (Table 16).

Table 16: Males and females aged 15–24: hospitalisations involving intentional self-harm, numbers and age-specific rates per 100,000 population, 1996–2008

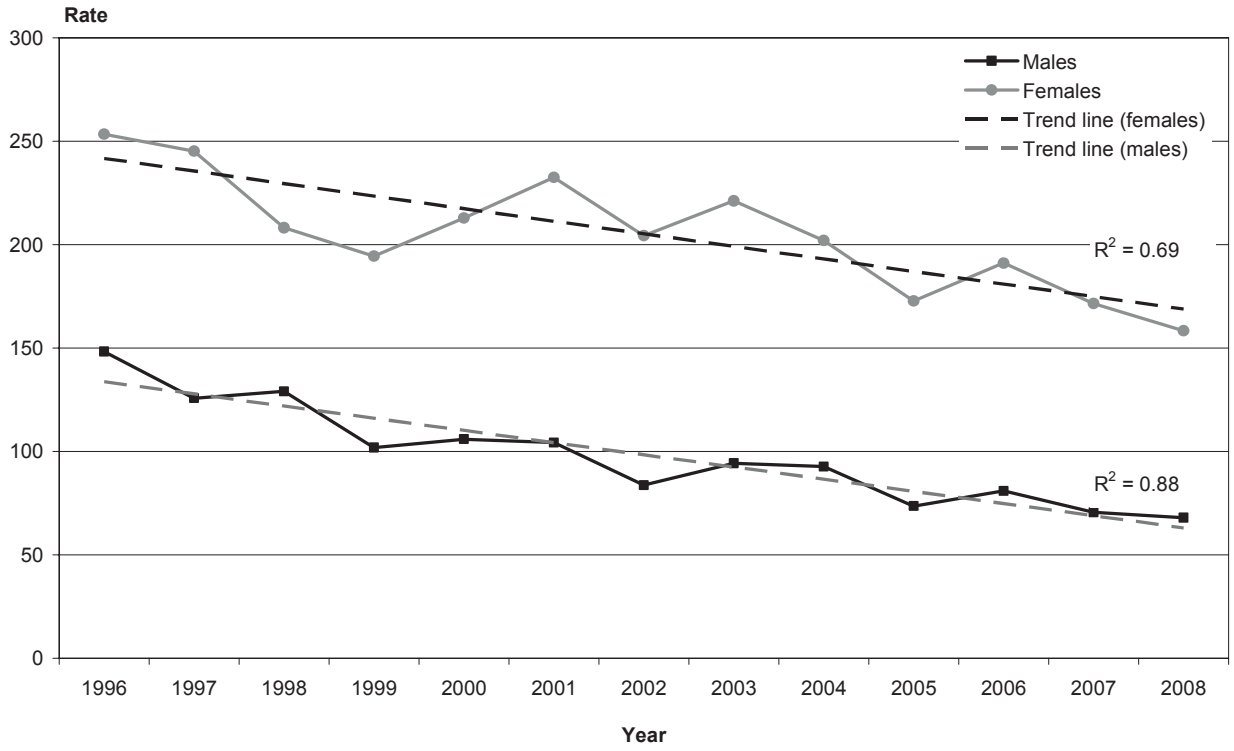
Year	Males		Females		Total	
	Number	Rate	Number	Rate	Number	Rate
1996	398	148.3	675	253.4	1073	200.7
1997	346	125.7	657	245.3	1003	184.7
1998	352	129.1	549	208.2	901	168.0
1999	276	101.9	506	194.5	782	147.3
2000	287	105.9	551	213.0	838	158.2
2001	282	104.4	615	232.6	897	167.8
2002	235	83.7	556	204.5	791	143.1
2003	276	94.2	622	221.2	898	156.4
2004	278	92.7	580	202.1	858	146.2
2005	224	73.5	503	172.8	727	122.0
2006	247	80.9	573	191.1	820	135.5
2007	219	70.5	520	171.6	739	120.4
2008	214	68.0	483	158.4	697	112.5

Source: New Zealand National Minimum Dataset

Note: The rate shown is the age-specific rate: the frequency of suicides relative to particular population age groups.

Figure 33 shows a significant reduction in intentional self-harm hospitalisation rates of 15–24-year-olds for both males and females. Trend lines plotted from the data between 1996 and 2008 (Figure 33) show an R^2 value of the male trend line of 0.88, which signifies a strong downward trend. The female youth R^2 value of 0.69 indicates more variation. Male youth rates declined by 54.2 percent and female youth rates by 37.5 percent over the period.

Figure 33: Males and females aged 15–24: hospitalisations involving intentional self-harm, age-specific rates per 100,000 population, 1996–2008



Source: New Zealand National Minimum Dataset

Note: R^2 is a measure of how well the data fit the trend line. For example, an R^2 value of 0.88 indicates that 88 percent of the variation in hospitalisations over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.

Ethnicity

Māori

In 2008 there were 414 intentional self-harm hospitalisations of Māori (16.8 percent of the total) (Table 17). The most common age group for Māori males to be hospitalised was 20–24 years (38 hospitalisations; 151.0 per 100,000 Māori male population of that age group). Māori females were most commonly hospitalised between the ages of 15 and 19 (54 hospitalisations; 161.7 deaths per 100,000 Māori female population of that age group).

Pacific peoples

Eighty-three intentional self-harm hospitalisations in 2008 were for Pacific people (3.4 percent of the total). The age-standardised rate was 30.6 per 100,000 Pacific population. Pacific females accounted for 43.4 percent of Pacific hospitalisations involving intentional self-harm: a noticeably smaller proportion than in other ethnic groups.

Asian peoples

In 2008 there were 83 intentional self-harm hospitalisations of Asian people (3.4 percent of the total). Age-standardised rates have not been calculated, because 2008 population data was not available for Asian peoples at the time of analysis. Females accounted for 60.2 percent of all Asian intentional self-harm hospitalisations.

Other groups

There were 1885 intentional self-harm hospitalisations involving ethnic groups classified as 'Other' in 2008 (76.5 percent of the total). The most common age for males in the 'Other' group to be hospitalised was between 35 and 39, while females were more commonly hospitalised between the ages of 15 and 19. Females accounted for 65.8 percent of intentional self-harm hospitalisations in this group.

Table 17: Hospitalisations involving intentional self-harm, by ethnicity, age group and sex, 2008

Ethnicity	Sex	Total	Age group (years)																	
			0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Māori	Total	414	0	0	18	81	78	44	48	56	39	28	11	5	3	2	0	0	0	1
	Males	152	0	0	5	27	38	23	18	19	8	6	3	1	1	2	0	0	0	1
	Females	262	0	0	13	54	40	21	30	37	31	22	8	4	2	0	0	0	0	0
Pacific	Total	83	0	0	4	17	17	12	8	4	12	2	4	1	2	0	0	0	0	0
	Males	47	0	0	1	10	9	8	4	4	7	1	1	1	1	0	0	0	0	0
	Females	36	0	0	3	7	8	4	4	0	5	1	3	0	1	0	0	0	0	0
Asian	Total	83	0	0	2	10	21	7	14	6	6	1	6	2	0	3	1	1	3	0
	Males	33	0	0	0	3	7	1	8	1	4	1	2	1	0	2	1	1	1	0
	Females	50	0	0	2	7	14	6	6	5	2	0	4	1	0	1	0	0	2	0
Other	Total	1885	0	0	53	273	200	150	145	226	207	224	119	107	64	37	18	21	20	21
	Males	644	0	0	4	59	61	57	65	81	75	71	43	46	22	20	5	16	11	8
	Females	1241	0	0	49	214	139	93	80	145	132	153	76	61	42	17	13	5	9	13
Total	Total	2465	0	0	77	381	316	213	215	292	264	255	140	115	69	42	19	22	23	22
	Males	876	0	0	10	99	115	89	95	105	94	79	49	49	24	24	6	17	12	9
	Females	1589	0	0	67	282	201	124	120	187	170	176	91	66	45	18	13	5	11	13

Source: New Zealand National Minimum Dataset

Rates have been calculated using groupings of Māori, Pacific and non-Māori/non-Pacific populations only, because comparable population data for Asian peoples is not available.

Table 18: Numbers and rates of intentional self-harm hospitalisations by ethnicity and sex, 1996–2008

Year	Number									Rate								
	Māori self-harm hospitalisations			Pacific peoples self-harm hospitalisations			Non-Māori/non-Pacific self-harm hospitalisations			Māori self-harm hospitalisations			Pacific peoples self-harm hospitalisations			Non-Māori/non-Pacific self-harm hospitalisations		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1996	147	249	396	32	32	64	994	1576	2570	56.3	89.8	73.5	32.8	31.3	31.8	69.9	113.5	91.5
1997	178	262	440	23	51	74	955	1605	2560	64.1	87.9	76.2	26.1	50.0	38.2	64.7	112.0	88.0
1998	217	268	485	29	34	63	983	1572	2555	76.7	91.9	84.6	29.4	35.0	32.2	66.6	107.2	86.7
1999	194	260	454	28	48	76	867	1441	2308	67.4	85.1	76.3	29.6	47.0	38.4	58.9	98.5	78.5
2000	191	293	484	38	41	79	919	1535	2454	66.7	96.2	81.6	35.7	38.1	37.0	62.0	105.8	83.6
2001	211	302	513	30	42	72	873	1678	2551	71.7	96.7	84.2	26.6	35.3	30.8	59.2	113.9	86.5
2002	152	268	420	46	59	105	796	1581	2377	53.0	88.0	70.9	40.7	50.3	45.5	51.4	103.6	77.5
2003	193	305	498	29	52	81	827	1736	2563	66.1	97.2	82.0	25.1	46.1	36.2	53.3	112.0	82.6
2004	178	259	437	27	41	68	777	1718	2495	60.8	82.0	71.5	22.2	35.8	29.3	49.5	110.2	79.7
2005	187	275	462	40	42	82	726	1473	2199	64.0	85.2	74.7	33.3	33.3	33.2	45.8	93.8	69.7
2006	174	299	473	36	34	70	781	1545	2326	60.2	93.6	77.3	28.5	25.9	27.2	47.5	95.5	71.5
2007	194	269	463	36	40	76	710	1437	2147	68.0	83.0	75.3	29.6	30.4	29.9	42.4	86.7	64.5
2008	152	262	414	47	36	83	677	1291	1968	52.3	79.9	66.4	35.2	26.3	30.6	39.4	77.4	58.3

Source: New Zealand National Minimum Dataset

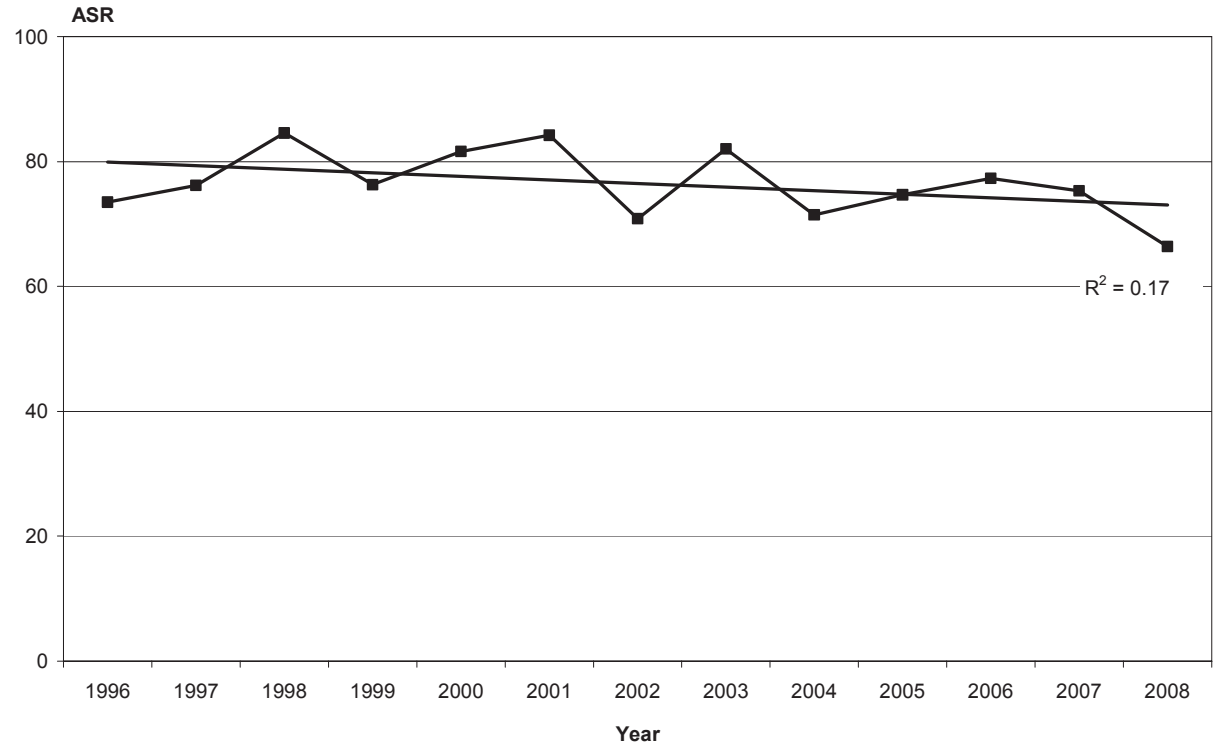
Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

There were 66.4 Māori intentional self-harm hospitalisations per 100,000 Māori population in 2008, compared to 30.6 per 100,000 Pacific population and 58.3 per 100,000 non-Māori/ non-Pacific population.

The trend line in Figure 34 shows that since 1996 rates of intentional self-harm hospitalisations for Māori have generally remained stable. The low R^2 value (0.17) indicates that most of the variation in rates is due to chance. In comparison, intentional self-harm hospitalisation rates for non-Māori dropped markedly between 1996 and 2008, by 35.8 percent (Figure 35).

Rates of hospitalisations involving intentional self-harm for Pacific people also remained stable over the period 1996–2008, at a rate much lower than that of Māori (Table 18). Over this period, Pacific rates were on average about 43 percent lower than Māori rates. In contrast to the lack of a trend in these two ethnic groups, rates for non-Māori/ non-Pacific hospitalisations fell by 36.3 percent over the same period.

Figure 34: Age-standardised intentional self-harm hospitalisation rates for Māori, 1996–2008



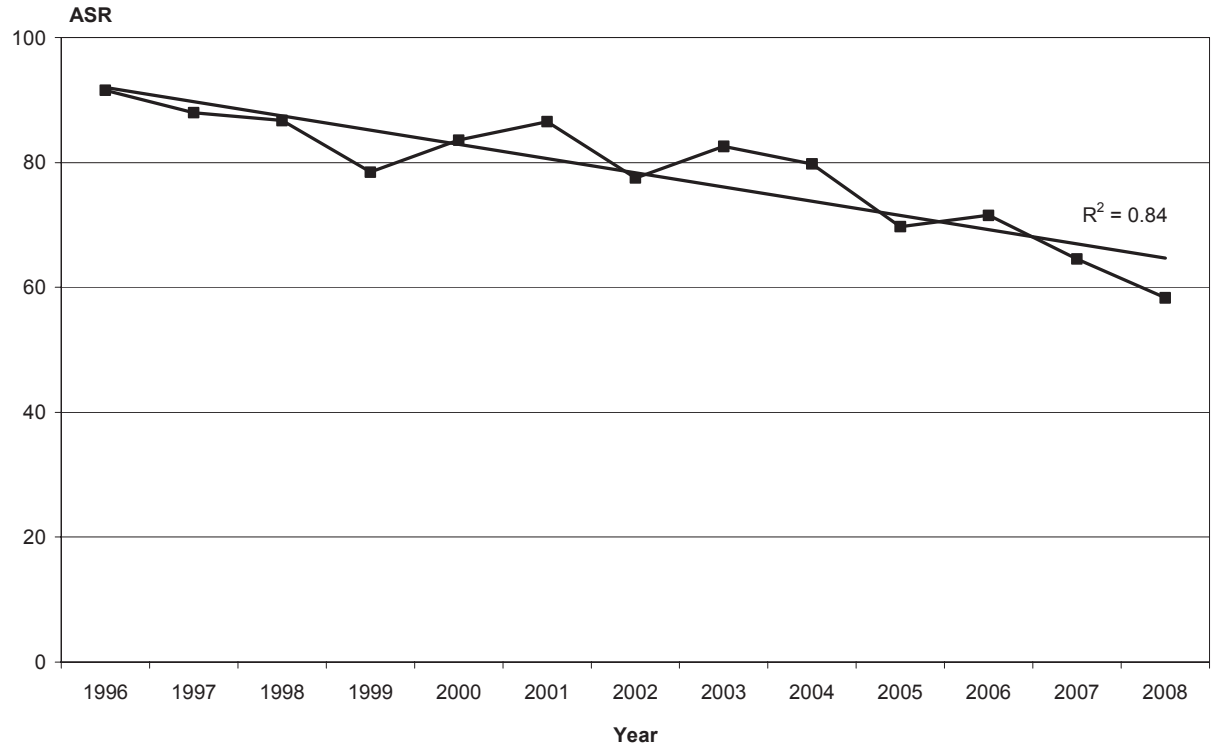
Source: New Zealand National Minimum Dataset

Note:

1 The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

2 R^2 is a measure of how well the data fit the trend line. An R^2 value of 0.17 indicates that only 17 percent of the variation in hospitalisations over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.

Figure 35: Age-standardised intentional self-harm hospitalisation rates for non-Māori, 1996–2008



Source: New Zealand National Minimum Dataset

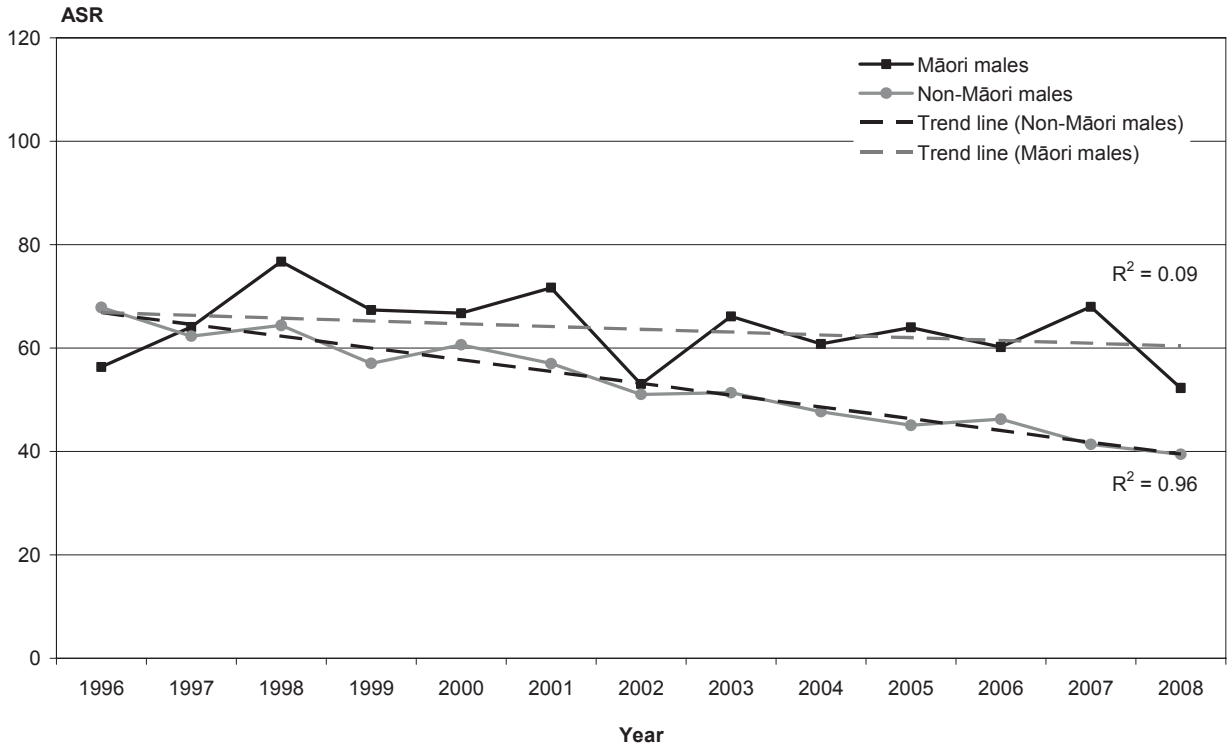
Notes:

1 The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

2 R^2 is a measure of how well the data fit the trend line. An R^2 value of 0.84 indicates that 84 percent of the variation in hospitalisations over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.

In breaking down the Māori and non-Māori groups by sex, it is possible to see that rates for neither Māori males nor Māori females showed any real change between 1996 and 2008 (Figures 36 and 37). Rates for non-Māori males showed a very strong downward trend (R^2 =0.96) over this period. Rates for non-Māori females showed a slight downward trend, with about 60 percent of the variation in rates explained by change over time.

Figure 36: Intentional self-harm hospitalisation rates for Māori and non-Māori males, 1996–2008



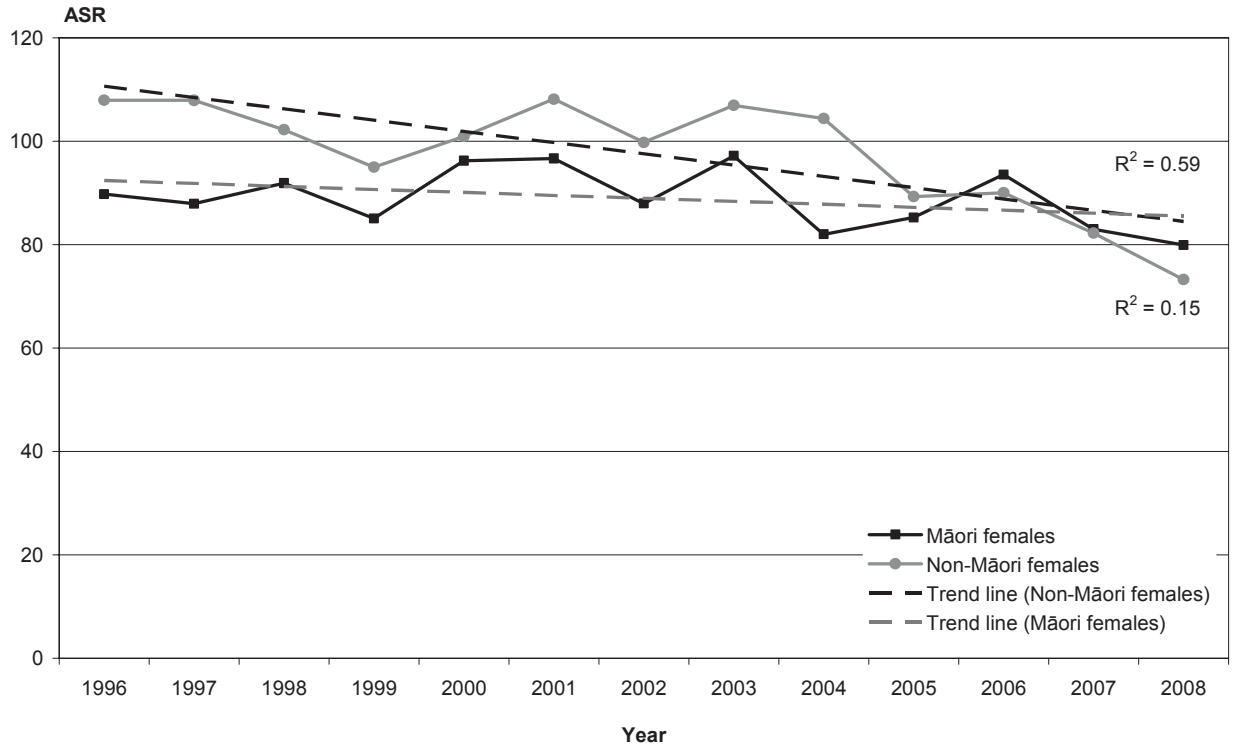
Source: New Zealand National Minimum Dataset.

Notes:

1 The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

2 R^2 is a measure of how well the data fit the trend line. For example, an R^2 value of 0.96 indicates that 96 percent of the variation in hospitalisations over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.

Figure 37: Intentional self-harm hospitalisation rates for Māori and non-Māori females, 1996–2008



Source: New Zealand National Minimum Dataset

Notes:

1 The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

2 R^2 is a measure of how well the data fit the trend line. For example, an R^2 value of 0.59 indicates that 59 percent of the variation in hospitalisations over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.

Among Māori and non-Māori youth (aged 15–24 years), intentional self-harm hospitalisation rates were of similar magnitude over the period 1996–2008 (Table 19 and Figure 38). Rates for both ethnic groups show a downward trend, with R^2 values of 0.60 and 0.83 respectively.

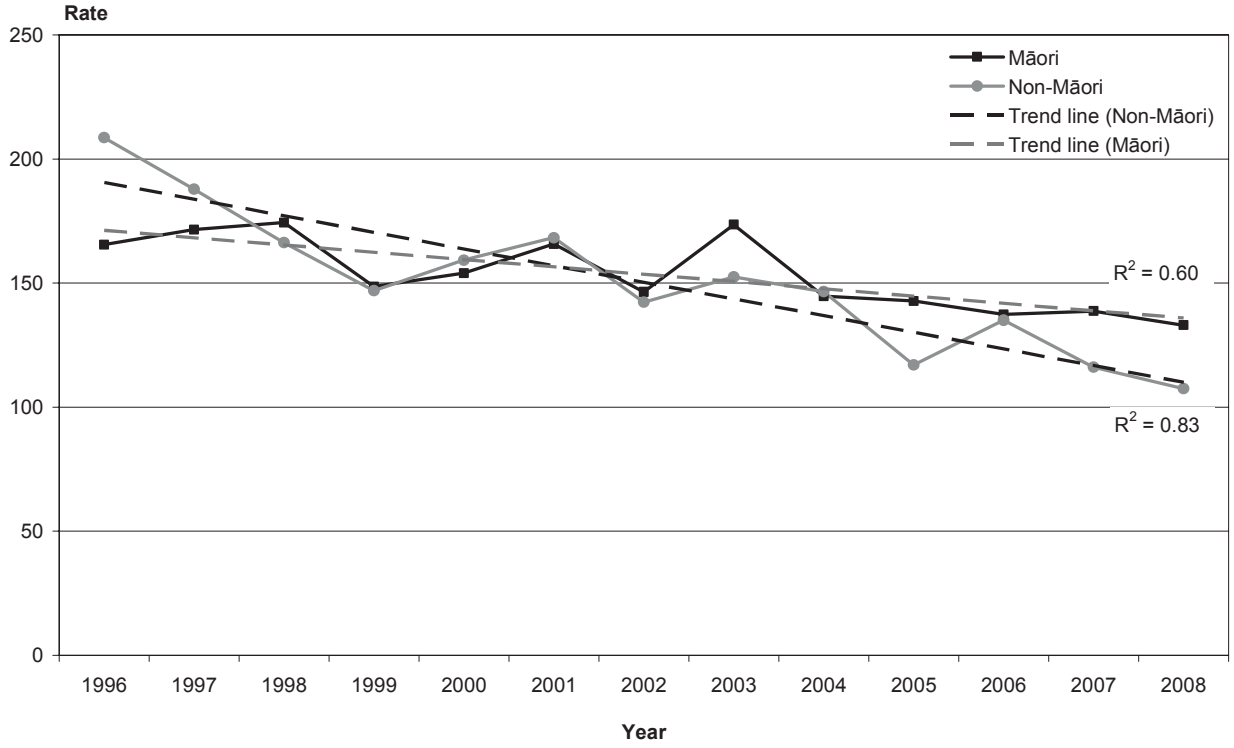
Table 19: Numbers and rates of intentional self-harm hospitalisations for Māori and non-Māori youth, by sex, 1996–2008

Year	Māori						Non-Māori					
	Males		Females		Total		Males		Females		Total	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1996	66	135.7	98	194.4	164	165.6	332	151.1	577	267.2	909	208.6
1997	77	145.8	105	197.3	182	171.6	269	121.0	552	257.2	821	187.9
1998	90	168.4	96	180.3	186	174.4	262	119.5	453	215.3	715	166.4
1999	71	131.0	89	166.4	160	148.6	205	94.6	417	201.7	622	146.9
2000	65	117.9	103	191.0	168	154.0	222	102.8	448	218.8	670	159.2
2001	78	138.8	106	193.5	184	165.8	204	95.3	509	242.8	713	168.3
2002	55	104.4	100	188.1	155	146.5	180	78.9	456	208.4	636	142.3
2003	77	142.7	111	204.2	188	173.6	199	83.3	511	225.2	710	152.4
2004	69	124.3	92	165.1	161	144.8	209	85.5	488	211.0	697	146.5
2005	62	107.9	102	177.6	164	142.8	162	65.5	401	171.6	563	117.1
2006	59	102.9	101	170.8	160	137.4	188	75.7	472	196.1	660	135.0
2007	64	110.0	99	166.8	163	138.7	155	61.4	421	172.7	576	116.1
2008	65	109.2	94	156.7	159	133.0	149	58.4	389	158.8	538	107.5

Source: New Zealand National Minimum Dataset

Note: The rate shown is the age-specific rate: the frequency of suicides relative to particular population age groups.

Figure 38: Intentional self-harm hospitalisation rates for youth, by ethnicity, 1996–2008



Source: New Zealand National Minimum Dataset

Notes:

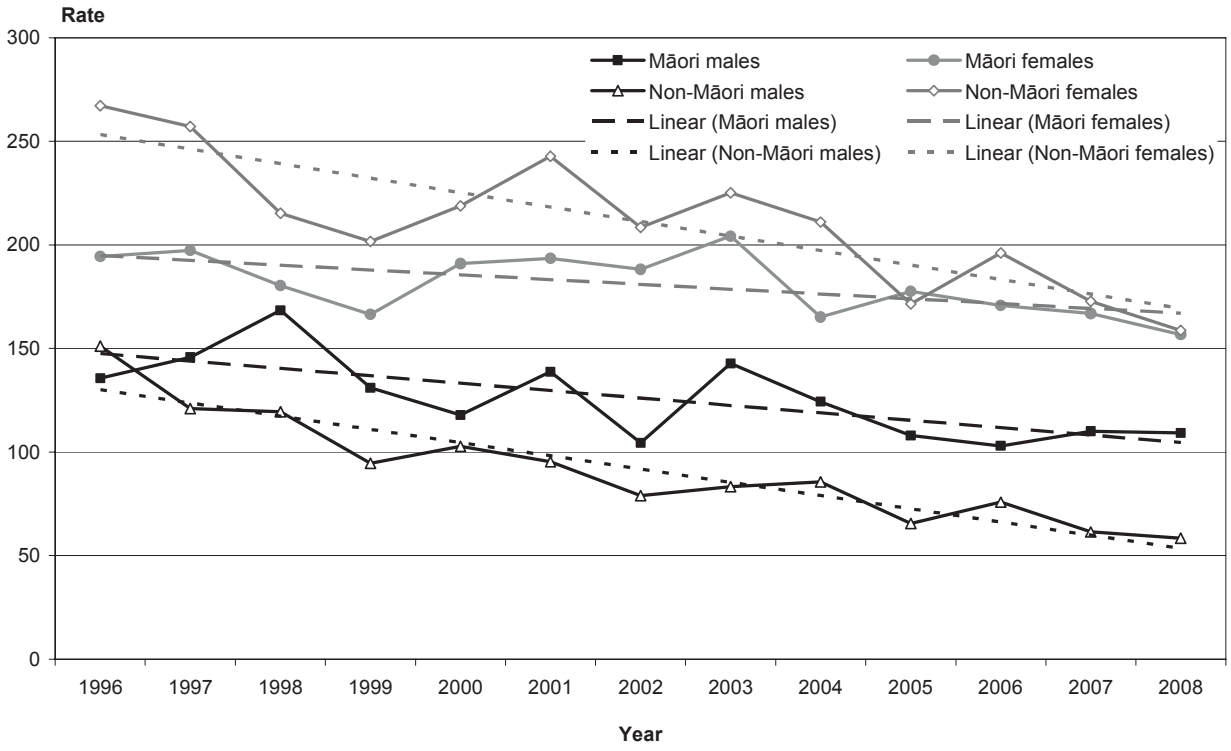
1 R^2 is a measure of how well the data fit the trend line. For example, an R^2 value of 0.60 indicates that 60 percent of the variation in Māori hospitalisations over time is explained by the downward trend over time. See the 'Definitions' section of this publication for further information.

2 The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

Māori male youth tend to have higher rates of intentional self-harm hospitalisations than non-Māori males. However, Māori female youth generally have lower rates of intentional self-harm hospitalisations than non-Māori female youth, although those rates tended to converge between 2004 and 2008. Over time these ethnic differences were not significant. Figure 39 shows the pattern. (To reduce complexity, error bars are not shown; if they were, the width of the confidence intervals would mean that they would overlap across categories.)

Trend lines have been fitted to the series in Figure 39. They indicate stronger downward trends for rates among non-Māori males and non-Māori females, than for Māori.

Figure 39: Intentional self-harm hospitalisation rates for youth, by ethnicity and sex, 1996–2008



Source: New Zealand National Minimum Dataset

Note: The rate in this figure is the age-specific rate: the frequency of suicides relative to particular population age groups.

Deprivation

As discussed in the 'Suicides' section of this publication, deprivation has been associated with various health outcomes. From the social inequalities literature it is evident that those who are most deprived generally experience poorer health (White et al 2008, Benzeval et al 2001).

Analysis of intentional self-harm hospitalisations by deprivation quintile shows that in 2008 there was a significant difference between rates for the least deprived quintile (quintile 1) and the most deprived quintiles (quintiles 4 and 5) (Table 20). Males and females living in the most deprived areas had significantly higher rates of intentional self-harm hospitalisation than those living in the least deprived areas.

Table 20: Numbers and age-standardised rates of intentional self-harm hospitalisation, by NZDep2001 quintile, 2008

Deprivation quintile		Number	Rate
1 least deprived	Total	288	36.4
	Males	95	24.3
	Females	193	48.7
2	Total	368	46.0
	Males	129	31.4
	Females	239	60.9
3	Total	435	51.2
	Males	151	35.2
	Females	284	67.7
4	Total	720	81.3
	Males	247	56.0
	Females	473	106.5
5 most deprived	Total	639	75.3
	Males	247	60.1
	Females	392	90.2

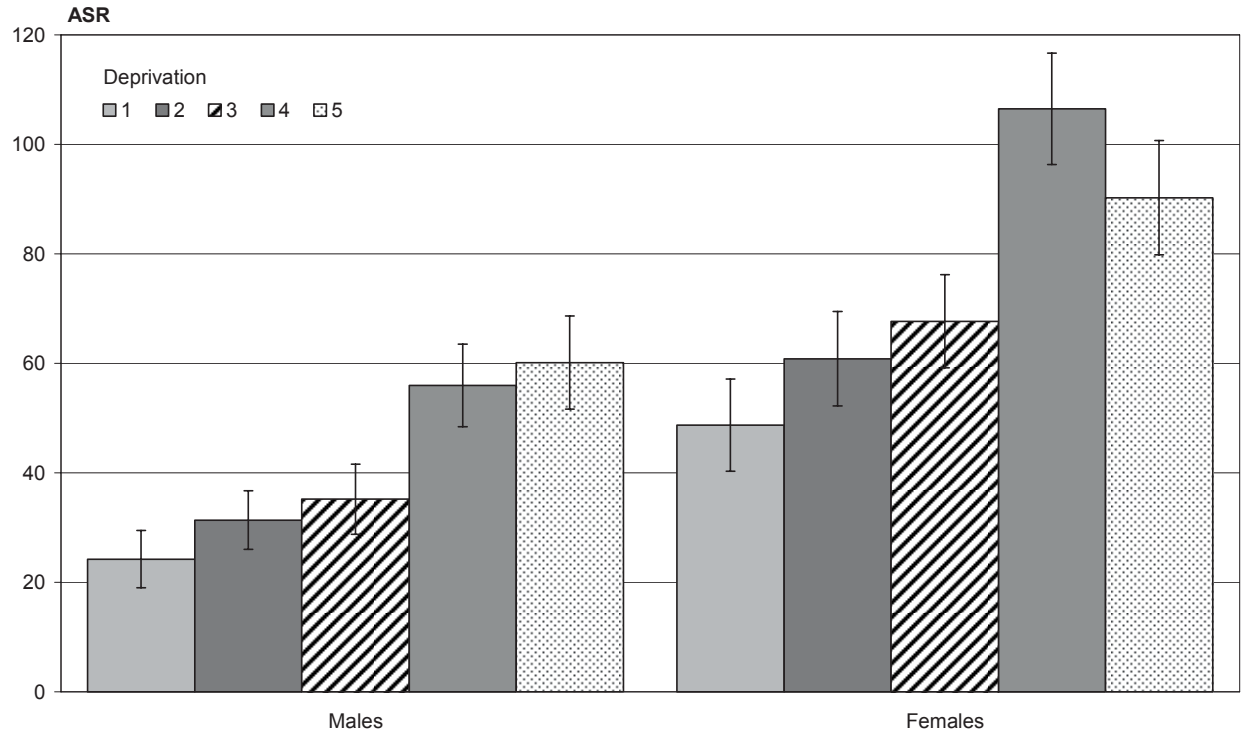
Source: New Zealand National Minimum Dataset

Note: ASR (age-standardised rate) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

Figure 40 shows the rates and confidence intervals relating to each quintile. For males there was a significant difference between rates in the least and most deprived quintiles. The rate in the most deprived quintile was almost two-and-a-half times higher than the rate in the least deprived quintile. Rates in quintiles 1, 2 and 3 were significantly lower than rates in quintiles 4 and 5. However, there was no significant difference between rates in quintiles 1, 2 and 3, or those in quintiles 4 and 5.

Similarly, for females there was no significant difference between rates in the three least deprived quintiles. However, the rates for quintiles 1, 2 and 3 were significantly lower than the rates for quintiles 4 and 5. In 2008 the female rate was highest in quintile 4; this rate was more than twice as high as the rate in the least deprived quintile.

Figure 40: Age-standardised intentional self-harm hospitalisation rates, by deprivation quintile and sex, 2008



Source: New Zealand National Minimum Dataset

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

District Health Boards

Hospitalisation data have been filtered in such a way as to allow as much consistency as possible over time and between DHBs (see pages 37–40). However, filtering cannot completely eliminate differences caused by different DHBs' methods of managing patients and keeping records.

Table 21 shows that the DHB with the highest age-standardised rate of intentional self-harm hospitalisations in 2008 was Wairarapa, and that Auckland and Counties Manukau DHBs had the lowest rates. Unlike the rest of the country, in the Auckland DHB area the rate of male intentional self-harm hospitalisations exceeded that of females. Other DHBs with low female-to-male rate ratios were West Coast (1.0 females hospitalised for each male), South Canterbury (1.1:1) and Bay of Plenty (1.2:1). Nelson-Marlborough DHB had the highest rate ratio in this respect, with 4.5 females hospitalised for every male.

Table 21: Numbers and rates of intentional self-harm hospitalisations, by DHB of domicile and sex, 2008

	DHB	Males		Females		Total		Female:Male rate ratio
		Number	Rate	Number	Rate	Number	Rate	
North Island	Northland	27	41.9	86	130.7	113	86.3	3.1
	Waitemata	125	47.1	204	76.9	329	62.0	1.6
	Auckland	93	39.6	76	33.0	169	36.0	0.8
	Counties Manukau	67	30.5	101	41.5	168	35.8	1.4
	Waikato	88	53.1	154	87.9	242	70.9	1.7
	Lakes	27	58.2	40	80.9	67	69.0	1.4
	Bay of Plenty	61	63.0	74	77.1	135	70.0	1.2
	Tairawhiti	6	30.2	16	77.2	22	54.9	2.6
	Hawke's Bay	23	35.7	37	48.2	60	41.9	1.4
	Taranaki	25	47.6	56	107.7	81	77.3	2.3
	MidCentral	28	34.2	44	49.8	72	41.9	1.5
	Whanganui	13	47.4	27	100.7	40	73.4	2.1
	Capital & Coast	42	28.5	103	70.3	145	49.9	2.5
	Hutt Valley	29	44.7	83	113.4	112	79.5	2.5
	Wairarapa	23	135.4	47	292.4	70	213.6	2.2
South Island	Nelson Marlborough	24	35.9	88	161.7	112	96.2	4.5
	West Coast	11	87.0	15	89.2	26	87.1	1.0
	Canterbury	82	32.6	209	86.0	291	59.3	2.6
	South Canterbury	14	64.1	15	71.5	29	68.5	1.1
	Otago	41	42.4	79	81.5	120	62.1	1.9
	Southland	22	42.5	32	61.2	54	51.8	1.4
	Overseas and undefined	5	..	3	..	8	..	

Source: New Zealand National Minimum Dataset

Notes:

1 The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

2 .. = not available.

Since these rates vary considerably from year to year, it is useful to consider age-standardised rates of hospitalisation based on three years' accumulated data (2006–2008). Table 22 and Figure 41 show these accumulated rates for each DHB by sex. The New Zealand age-standardised rate for this three-year period has been calculated based on the New Zealand estimated resident populations as at 30 June 2007 and standardised to the WHO standard world population. The national figure is 64.2 intentional self-harm hospitalisations per 100,000 population over the three years: this is represented by the horizontal line in Figure 41. Confidence intervals are also provided to aid interpretation.

Table 22: Numbers, rates and female-to-male rate ratios of intentional self-harm hospitalisations, by DHB of domicile, 2006, 2007 and 2008 accumulated data

	DHB	Males		Females		Total		Female:Male rate ratio
		Number	Rate	Number	Rate	Number	Rate	
North Island	Northland	118	60.6	228	113.9	346	87.1	1.9
	Waitemata	354	46.6	590	74.5	944	60.6	1.6
	Auckland	224	32.0	218	31.7	442	31.7	1.0
	Counties Manukau	214	32.4	332	47.0	546	39.6	1.4
	Waikato	277	56.0	504	97.4	781	77.1	1.7
	Lakes	72	53.9	156	108.0	228	80.6	2.0
	Bay of Plenty	161	58.8	221	78.8	382	68.7	1.3
	Tairawhiti	27	43.7	58	94.7	85	70.0	2.2
	Hawke's Bay	87	44.6	139	64.7	226	54.7	1.5
	Taranaki	82	56.7	178	114.6	260	85.8	2.0
	MidCentral	116	50.4	228	91.7	344	71.2	1.8
	Whanganui	46	56.4	80	92.6	126	74.3	1.6
	Capital & Coast	169	38.2	380	84.3	549	62.1	2.2
	Hutt Valley	108	54.8	266	123.8	374	89.5	2.3
	Wairarapa	53	113.3	131	274.6	184	192.5	2.4
South Island	Nelson Marlborough	98	51.6	263	163.5	361	105.6	3.2
	West Coast	29	65.0	55	116.9	84	90.0	1.8
	Canterbury	312	42.0	703	98.5	1015	70.1	2.3
	South Canterbury	47	72.1	79	117.9	126	94.3	1.6
	Otago	132	49.1	280	99.9	412	74.8	2.0
	Southland	69	44.1	111	69.2	180	56.6	1.6
	Overseas and undefined	12	..	13	..	25	..	

Source: New Zealand National Minimum Dataset

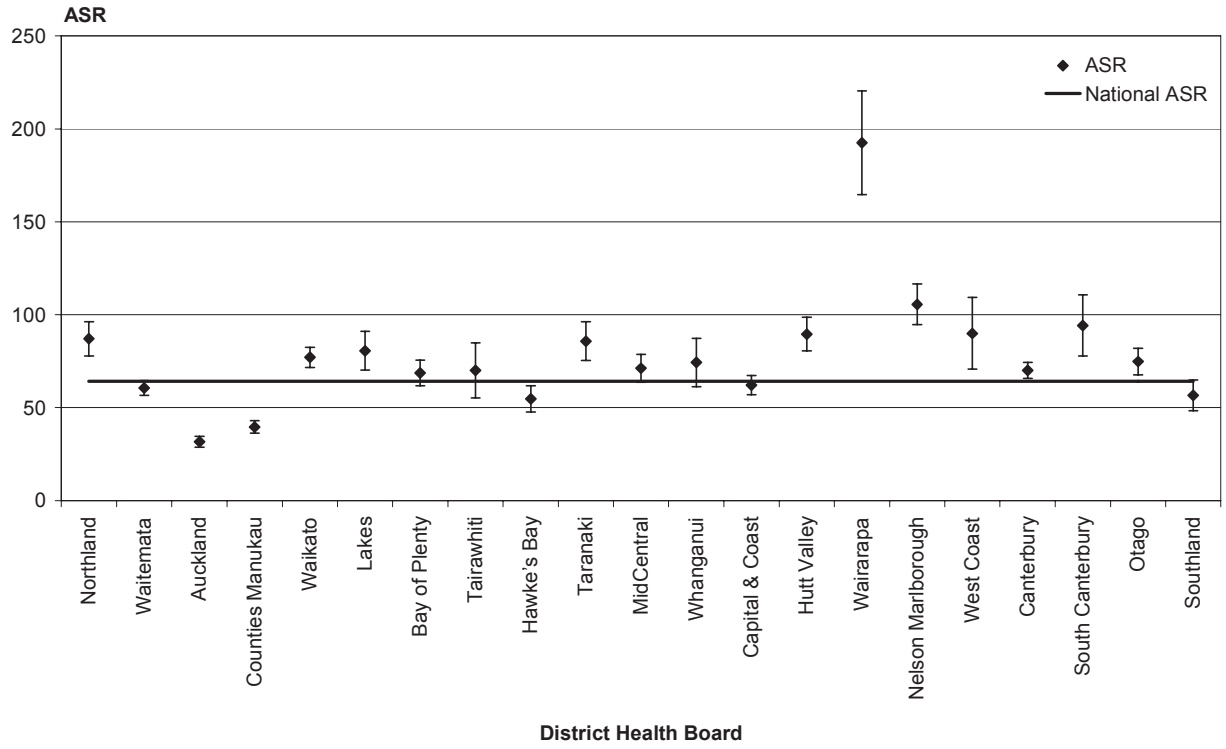
Notes:

1 The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

2 .. = not available.

Figure 41 shows clearly that Northland, Waikato, Lakes, Taranaki, Hutt Valley, Wairarapa, Nelson Marlborough, West Coast, Canterbury, South Canterbury and Otago DHBs had a significantly higher rate for intentional self-harm hospitalisations than the national average over 2006–2008. Auckland, Counties Manukau, Hawke's Bay and Southland DHBs had significantly lower rates than the national rate.

Figure 41: Total age-standardised hospitalisation rates for intentional self-harm, by DHB of domicile, 2006, 2007 and 2008 (accumulated data)



Source: New Zealand National Minimum Dataset

Note: The rate shown (ASR) is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

Table 23 indicates considerable variation between DHB areas for Māori and non-Māori rates of intentional self-harm hospitalisations over the period 2006–2008. For example, in Northland, Lakes, Bay of Plenty, Capital & Coast and Southland DHBs, males and females had similar Māori:non-Māori ratios. In MidCentral DHB the Māori rates were about 80 percent of the non-Māori rates for both sexes. However, in Auckland DHB the Māori:non-Māori ratio was 2.4:1 for males and just 1.5:1 for females. For all New Zealand, the Māori:non-Māori ratio for male hospitalisations averaged 1.4:1 over 2006–2008, while the ratio for females was close to 1:1.

Table 23: Numbers, rates and Māori:non-Māori rate ratios of intentional self-harm hospitalisations, by DHB of domicile, by sex, 2006, 2007 and 2008 accumulated data

	DHB	Māori				Non-Māori				Māori:Non-Māori	
		Males		Females		Males		Females		Rate ratio	
		No.	Rate	No.	Rate	No.	Rate	No.	Rate	Males	Females
North Island	Northland	41	67.7	80	115.6	77	59.4	148	118.3	1.1	1.0
	Waitemata	50	68.6	75	98.1	304	43.1	515	71.2	1.6	1.4
	Auckland	37	68.5	27	46.2	187	28.7	191	30.2	2.4	1.5
	Counties Manukau	56	55.4	86	70.6	158	27.8	246	41.6	2.0	1.7
	Waikato	72	70.7	95	82.6	205	50.8	409	101.1	1.4	0.8
	Lakes	26	60.0	58	112.9	46	50.2	98	113.2	1.2	1.0
	Bay of Plenty	37	62.4	51	70.1	124	59.8	170	80.7	1.0	0.9
	Tairawhiti	14	50.7	35	108.2	13	35.6	23	81.7	1.4	1.3
	Hawke's Bay	22	47.6	26	45.6	65	42.1	113	72.3	1.1	0.6
	Taranaki	17	67.6	26	103.5	65	51.8	152	119.5	1.3	0.9
	MidCentral	18	42.6	34	73.4	98	51.1	194	96.4	0.8	0.8
	Whanganui	10	54.1	14	57.9	36	57.4	66	109.6	0.9	0.5
	Capital & Coast	19	41.5	48	95.9	150	37.4	332	83.0	1.1	1.2
	Hutt Valley	27	80.9	42	111.9	81	47.7	224	125.0	1.7	0.9
	Wairarapa	8	90.4	30	319.5	45	112.7	101	256.3	0.8	1.2
South Island	Nelson Marlborough	10	48.3	16	89.6	88	50.8	247	175.6	1.0	0.5
	West Coast	1	24.9	4	79.3	28	69.2	51	118.8	0.4	0.7
	Canterbury	24	44.2	31	56.0	288	41.7	672	102.7	1.1	0.5
	South Canterbury	5	103.8	4	78.8	42	67.7	75	125.7	1.5	0.6
	Otago	12	56.7	31	160.0	120	47.8	249	95.4	1.2	1.7
	Southland	11	50.5	15	78.3	58	40.9	96	67.4	1.2	1.2
	Overseas and undefined	3	..	2	..	9	..	11	..		

Source: New Zealand National Minimum Dataset

Notes:

1 The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

2 .. = not available.

Technical Notes

Data

Population denominator

The suicide and self-harm hospitalisation rates presented in this report and the last two years' publications will differ from those editions of *Suicide Facts* prior to *Suicide Facts: Deaths and intentional self-harm hospitalisations 2006* (for example, Ministry of Health 2007). In 2006, 2007 and 2008 data, any population analysis is based on New Zealand population estimates as calculated by Statistics New Zealand. In *Suicide Facts* publications using data for 2005 or earlier different population denominators were used (note that the only exception to this is the deprivation data, for which population projections have been used).

Suicide deaths

All suicide mortality data in this publication was obtained from the New Zealand Mortality Collection, except for that used in international comparisons, which were obtained from WHO.

Classification of a death as suicide is subject to a coroner's inquiry, and only on completion of an inquest can a death be officially classified as suicide. In some cases the inquest may be heard several years after the death, particularly if there are factors relating to the death that need to be investigated first. Consequently, a provisional suicide classification may be made before a coroner's verdict. The suicide mortality data used in this report are provisional 2008 data. Sixteen of the deaths that were registered in 2008 are still subject to coroners' findings, and neither a final nor a provisional cause of death had been assigned to them at the time of data extraction.

The number of provisionally classified deaths from suicide in 2008 presented in this report may differ slightly from the number for the same year presented in future reports, when data has been finalised. The Ministry of Health will release the final data in the publication *Mortality and Demographic Data*.

The suicide data in this report is based on dates deaths are registered, which is usually soon after the death. However, this system may mean that a few deaths (approximately 2 percent) are registered in later years.

Hospitalisation for intentional self-harm

The motivation for intentional self-harm varies, and therefore data on hospitalisation for intentional self-harm is not a measure of suicide attempts. Only hospitalisation data from 1996 onwards has been used in this publication, because earlier years' data would not be able to be analysed consistently due to coding and reporting changes in 1995. Please also note that data from July 2007 onwards is provisional, as not all publicly funded hospital data has been processed and coded by the Ministry of Health.

The hospitalisation data used in this report has been filtered to remove information on patients who were discharged from the emergency department and stayed less than two days in hospital. There are huge variations between the numbers of short-stay emergency department admissions recorded by DHBs because admission practices vary, and so this filtering was necessary to allow better comparisons between DHBs and over time. The removal of this data is explained more fully at the beginning of the section on intentional self-harm hospitalisation.

It is important to note that readmissions to hospital for a self-harm event within two days of a previous intentional self-harm discharge have also been removed. This was to ensure that admissions relating to transfers between DHBs were excluded, because different DHBs have different procedures for transfers. It is also important to note that hospitalisations for intentional self-harm represent individual events of self-harm, rather than individual people: a single person can contribute numerous unique intentional self-harm events to the dataset.

Between 1996 and 2008 there were two hospitalisations reported for intentional self-harm among children aged under five. For simplicity, these admissions have not been excluded.

The data-filtering methods used in this report mean that data within this publication cannot be compared with that in any previous documents published by the Ministry of Health in this series prior to the 2008 publication *Suicide Facts: Deaths and intentional self-harm hospitalisations 2006*.

Percentage calculations

All percentage calculations comparing numbers or rates between years have been undertaken using the raw data. Due to rounding, this may mean that the resultant information may be slightly different to any calculations based on tabular data supplied in this publication.

International Classification of Diseases (ICD) codes

For the years 2000–2008 the *International Statistical Classification of Diseases and Related Health Problems*, *10th Revision, Australian Modification* (ICD-10-AM) codes used for mortality and hospitalisation data were X60–X84: Intentional self-harm (National Centre for Classification in Health).

The *International Statistical Classification of Diseases and Related Health Problems, 9th Revision, Clinical Modification* (ICD-9-CM) codes E950–E959: Suicide and self-inflicted injury (National Centre for Classification in Health, USA) were used for 1988–1994 data, and *International Statistical Classification of Diseases and Related Health Problems, 9th Revision, Clinical Modification* (ICD-9-CM-A) codes E950–E959: Suicide and self-inflicted injury (National Coding Centre, Australia) were used for 1995–1999 data. Note that code E959 was excluded from hospitalisation data in this publication, since it covers ‘late effects’, and hence is not relevant to current episodes.

Definitions

Age-standardised rates and rate ratios

An age-standardised rate is a rate that has been adjusted to take account of differences in the age distribution of the population over time or between different groups (for example, different ethnic groups).

An age-standardised rate ratio is the ratio of two groups' rates, taking into account differences in the groups' size and age structure.

This publication has used the WHO standard world population in determining age-standardised rates and rate ratios.

Age-specific rates

An age-specific rate refers to the frequency with which an event occurs relative to the number of people in a defined age group. In this document age-specific rates are given in both five-year age groups and life-cycle age groups.

Comparison with international data

A cautious approach is recommended when comparing international suicide statistics, because many factors affect the recording and classification of suicide in different countries, which may result in undercounts. Potential factors include the level of proof required for a verdict; stigma associated with suicide within a particular society; the religion, social class or occupation of the victim; and confidentiality (Andriessen 2006). As a result, deaths that are classified as suicide in some countries may be classified as accidental or of undetermined cause in others.

Furthermore, statistical measures, such as confidence intervals, cannot account for these differences. Providing them may create a false sense of confidence in the recording of differences. Confidence intervals have therefore been excluded from the section on international comparisons in this publication. The data used in this publication to make international comparisons are the most recent available. Please note that 2008 data is not yet available for any of the other countries referred to in this report.

Deprivation

The New Zealand Deprivation Index is a measure of socioeconomic status calculated for small geographic areas. The calculation uses a range of variables from the 2001 Census of Population and Dwellings, which represent nine dimensions of social deprivation. The Deprivation Index is calculated at the level of meshblocks (geographical units containing a median of 90 people), and the Ministry of Health maps these to domicile codes, which are built up to the relevant geographic scale using weighted average census usually resident population counts. The nine variables (proportions in small areas) in the index, by decreasing weight, are:

1. income: people aged 18–59 receiving a means-tested benefit
2. employment: people aged 18–59 who are unemployed
3. income: people living in an equivalised[6] household whose income is below a certain threshold
4. communication: people with no access to a telephone
5. transport: people with no access to a car
6. support: people aged under 60 living in a single-parent family
7. qualifications: people aged 18–59 with no qualifications
8. living space: people living in an equivalised household below a bedroom occupancy threshold
9. home ownership: people not living in their own home.

Note that the 2001 Index has been used for the purposes of this publication, with data coded using 2001 domiciles at DHB level, because the 2006 domicile codes were not introduced until 2008 and the relevant data is not yet available. Further information can be obtained from http://www.moh.govt.nz/moh.nsf/pagesmh/3357?Open

District Health Board rates

Age-standardised rates were calculated for each DHB region. When interpreting regional differences in hospitalisation rates for intentional self-harm among DHBs, it should be noted that DHBs differ in their reporting and patient management practices.

Ethnicity

There are different methods for outputting ethnicity data. This publication uses 'prioritised ethnicity', by which each person represented in the data is allocated to a single ethnic group using the priority system Māori > Pacific peoples > Asian > European/other (Ministry of Health 2004). The aim of prioritisation is to ensure that where it is necessary to assign people to a single ethnic group, ethnic groups that are small or important in terms of policy are not swamped by the European ethnic group (Ministry of Health 2004). This method is also a more robust method of dealing with the low rate of multiple ethnicities in health sector data.

This publication uses two ethnic classifications for analysing suicides and intentional self-harm hospitalisations: the first comprises Māori, Pacific peoples, Asian peoples and European/other; and the second divides the population into Māori and non-Māori.

[6] Equivalisation is a method used to control for household composition.

Prior to 1996, the concept of ethnicity was based on biological race (that is, percentage of blood), as recorded on death registration forms, and on a sociocultural concept (that is, cultural affiliation) as defined in the Census. Since September 1995 death certificates have included a question comparable with the self-identified ethnicity question in the 1996 Census, which allows for multiple ethnic identities. *New Zealand Census – Mortality Study* adjustors can be applied to mortality counts from 1996 to 1999 (Blakely 2002). These adjust data to allow for an undercount of Māori and Pacific peoples. From 2000 onwards comparisons across all ethnic groups are possible, because adjustors are not necessary. For further discussion on inconsistencies in ethnicity collection, refer to *Decades of Disparity: Ethnic mortality trends in New Zealand 1980–1999* (Ajwani et al 2003).

Median

The median is the middle score in a range of scores, so that one half of the values will lie above it and one half below it. It is a more appropriate measure of centrality than the mean or average score when an extremely high or low value would give a distorted measure.

Numbers, rates and ratios

The number of suicide deaths refers to the actual number of people who have died by suicide. The number of hospitalisations refers to the number of discharges from hospital with an intentional self-harm code on the patient record.

The rate of suicide or intentional self-harm hospitalisation refers to the frequency with which these events occur relative to the number of people in a defined population and a defined time period.

The rate ratio refers to the frequency with which these events are reported in one population group compared with another.

R^2 value: the co-efficient of determination

The R^2 value is a statistical measure used to assess the variability of data in relationship to some other factor. Used in trend analysis in this publication, it explains how much of the variation in a dataset can be explained by a trend over time. It is computed as a value between 0 (0 percent) and 1 (100 percent): the higher the value, the better the evidence for a trend. If the R^2 value is low then it is not possible to assume that the values (for example, age-standardised rates) are decreasing (or increasing) over time: essentially the variation in the data is unexplained.

Statistical significance

Confidence intervals have been calculated for age-standardised rates at the 95 percent level using the methods presented in Keyfitz 1966.

A confidence interval is a range of values used to describe the uncertainty around a single value (such as an age-standardised rate) used to estimate the true values in a population, such as the underlying or true rate. Confidence intervals describe how different the estimate could have been if chance had led to a different set of data. They are calculated with a stated probability: typically 95 percent (which would indicate there is a 95 percent chance that the true value lies within the confidence intervals).

Confidence intervals may assist in comparing rates over time; if two confidence intervals do not overlap, then it is reasonable to assume that the difference is not due to chance (that is, is statistically significant). If two confidence intervals overlap it is not possible to draw any conclusion about the significance of any difference between them.

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Appendix 1: Further Tables

Table A1: Estimated New Zealand resident population for mean year 31 December 2008, five-year age groups

	Total	Five–year age group																	
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Total																			
Total	4,271,100	300,020	287,910	301,520	322,500	297,310	273,640	271,370	312,540	314,250	319,460	276,740	244,310	211,210	166,440	126,070	104,600	77,660	63,550
Males	2,093,300	153,750	147,350	154,640	164,660	150,190	134,390	129,740	148,660	151,510	155,120	135,830	120,530	103,880	81,000	60,360	48,180	32,720	20,740
Females	2,177,800	146,270	140,560	146,880	157,840	147,130	139,250	141,620	163,880	162,730	164,340	140,900	123,780	107,330	85,440	65,710	56,420	44,940	42,810
Māori																			
Total	642,800	81,230	70,020	69,260	67,760	51,750	43,270	42,020	43,470	39,880	38,180	29,220	22,460	16,040	11,860	8050	4790	2370	1190
Males	315,400	41,790	35,960	35,590	34,360	25,160	20,510	19,670	20,270	18,890	17,910	13,900	10,820	7680	5690	3780	2060	950	400
Females	327,500	39,450	34,070	33,670	33,390	26,590	22,760	22,350	23,210	20,990	20,270	15,320	11,640	8360	6170	4270	2730	1420	780
Non-Māori																			
Total	3,628,300	218,790	217,890	232,260	254,740	245,560	230,370	229,350	269,070	274,370	281,280	247,520	221,850	195,170	154,580	118,020	99,810	75,290	62,360
Males	1,777,900	111,960	111,390	119,050	130,300	125,030	113,880	110,070	128,390	132,620	137,210	121,930	109,710	96,200	75,310	56,580	46,120	31,770	20,340
Females	1,850,300	106,820	106,490	113,210	124,450	120,540	116,490	119,270	140,670	141,740	144,070	125,580	112,140	98,970	79,270	61,440	53,690	43,520	42,030

Source: Statistics New Zealand

Table A2: Estimated New Zealand resident population, by five-year age group and sex, as at 30 June 2007, by DHB

	Total	Five–year age group																	
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Northland																			
Total	153,800	10,860	11,610	12,740	11,350	6,840	6,520	8,100	10,080	11,190	11,740	10,830	10,060	8810	7730	5550	4480	3010	2320
Male	75,500	5450	5910	6550	5930	3550	3050	3790	4730	5330	5600	5310	4970	4330	3930	2770	2200	1360	790
Female	78,300	5420	5700	6190	5420	3290	3470	4300	5350	5860	6140	5510	5090	4480	3790	2780	2280	1650	1530
Waitemata																			
Total	513,300	35,560	35,360	37,390	38,670	34,870	31,770	34,580	41,700	42,120	39,540	32,240	28,680	23,290	18,190	13,330	11,130	8240	6670
Male	251,200	18,400	18,040	19,200	19,770	17,830	15,580	16,310	19,840	20,270	19,170	15,690	14,050	11,340	8740	6280	5110	3440	2130
Female	262,100	17,160	17,320	18,190	18,910	17,040	16,190	18,270	21,870	21,850	20,370	16,550	14,620	11,950	9450	7050	6020	4800	4540
Auckland																			
Total	433,200	28,250	24,770	25,490	30,020	43,420	41,870	36,860	35,340	33,440	30,260	25,390	21,400	16,070	12,720	8880	7360	5940	5750
Male	212,600	14,580	12,760	13,160	15,020	21,150	20,570	17,900	17,120	16,490	14,850	12,480	10,690	7940	6170	4240	3340	2380	1730
Female	220,700	13,660	12,010	12,340	15,000	22,270	21,300	18,950	18,220	16,950	15,410	12,910	10,710	8130	6550	4640	4020	3560	4020
Counties Manukau																			
Total	464,600	39,500	38,350	39,460	39,210	32,670	29,620	30,630	35,660	35,610	32,750	27,010	23,450	18,960	14,600	9940	7880	5310	4030
Male	227,200	20,330	19,470	20,110	20,000	16,160	13,980	14,200	16,810	17,200	15,940	13,300	11,490	9310	7100	4700	3610	2230	1290
Female	237,400	19,180	18,880	19,350	19,210	16,520	15,640	16,430	18,840	18,410	16,800	13,710	11,960	9650	7510	5230	4280	3080	2740
Waikato																			
Total	353,100	25,500	25,770	27,160	27,860	24,560	21,210	21,480	24,590	25,060	25,230	22,440	20,150	16,740	14,100	10,810	9210	6260	4990
Male	173,400	12,800	13,200	14,130	14,090	12,540	10,660	10,300	11,630	12,020	12,180	11,020	9910	8160	6880	5240	4280	2700	1630
Female	179,800	1,290	12,570	13,020	13,770	12,030	10,560	11,180	12,970	13,040	13,040	11,430	10,240	8580	7220	5570	4930	3570	3360
Lakes																			
Total	101,400	7930	7880	8270	7600	5400	5800	6490	7410	7320	7670	6460	5870	4890	4090	2960	2480	1680	1250
Male	49,800	4080	4080	4230	3930	2760	2740	3090	3540	3470	3760	3120	2840	2390	2030	1440	1190	680	400
Female	51,700	3860	3800	4040	3660	2650	3070	3400	3870	3860	3910	3340	3030	2500	2070	1520	1290	990	850
Bay of Plenty																			
Total	203,300	13,970	14,840	15,840	14,370	9450	9980	11,520	13,830	14,560	15,040	13,720	12,320	10,920	10,010	7810	6740	4850	3590
Male	99,000	7240	7710	8050	7420	4730	4830	5450	6380	6910	7240	6560	6060	5230	4770	3750	3240	2120	1250
Female	104,400	6730	7130	7780	6950	4710	5150	6070	7450	7640	7800	7160	6250	5690	5240	4060	3500	2720	2340

	Total	Five–year age group																	
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Tairawhiti																			
Total	45,900	3750	3830	4110	3740	2400	2350	2700	3130	3150	3380	3060	2720	1990	1720	1350	1120	770	630
Male	22,300	1910	1970	2050	1930	1150	1130	1270	1440	1510	1570	1540	1390	980	830	630	500	310	180
Female	23,600	1840	1860	2060	1810	1250	1220	1430	1690	1640	1800	1520	1340	1010	890	720	620	460	450
Hawke's Bay																			
Total	153,000	10,950	11,430	12,210	11,520	7440	7770	9080	10540	11130	11540	10160	9760	7870	6570	5000	4350	3140	2560
Male	74,400	5570	5790	6300	5800	3840	3740	4270	5010	5300	5530	4970	4780	3900	3150	2390	1990	1250	830
Female	78,600	5370	5640	5910	5730	3610	4030	4820	5540	5830	6010	5190	4970	3960	3420	2600	2360	1890	1730
Taranaki																			
Total	107,300	7220	7620	8060	8090	5510	5750	6520	7380	7820	8100	7240	6530	5430	4530	3740	3320	2570	1910
Male	52,900	3750	3940	4100	4190	2890	2870	3110	3530	3820	3940	3590	3280	2680	2210	1790	1550	1010	650
Female	54,400	3470	3680	3960	3900	2620	2880	3410	3850	4000	4160	3650	3250	2760	2330	1950	1770	1560	1260
MidCentral																			
Total	164,200	11,000	11,160	12,030	13,510	12,270	9,480	9,530	10,900	11,450	11,760	10,190	9470	7960	7050	5600	4740	3420	2700
Male	79,900	5600	5610	6120	6770	6250	4630	4570	5170	5470	5770	4900	4610	3890	3410	2670	2200	1420	850
Female	84,300	5400	5550	5910	6750	6020	4850	4960	5730	5980	5990	5280	4850	4070	3630	2930	2540	2010	1840
Whanganui																			
Total	63,500	4190	4470	5090	4950	3240	3030	3440	4120	4550	4780	4380	3850	3250	2900	2400	2140	1520	1210
Male	31,000	2100	2330	2570	2580	1700	1530	1630	1970	2210	2290	2200	1910	1560	1360	1090	1010	620	370
Female	32,500	2080	2140	2510	2370	1540	1500	1810	2150	2340	2490	2180	1940	1690	1540	1310	1130	910	840
Capital & Coast																			
Total	281,500	18,550	17,320	17,440	20,370	25,150	22,820	21,950	23,000	22,130	19,990	16,630	14,760	11,640	9330	6910	5680	4280	3510
Male	136,100	9420	8750	8950	9900	11870	11290	10460	10950	10650	9750	8080	7200	5690	4460	3250	2550	1780	1110
Female	145,400	9130	8570	8490	10470	13280	11530	11490	12050	11480	10240	8550	7560	5950	4860	3670	3140	2510	2400
Hutt Valley																			
Total	141,500	10,290	10,400	10,660	10,940	8,700	8,220	9,580	11,110	10,980	10,910	8970	7990	6340	5120	3750	3290	2390	1900
Male	69,600	5330	5370	5460	5610	4380	3940	4590	5410	5290	5330	4440	4000	3160	2510	1740	1470	990	550
Female	72,000	4960	5030	5190	5320	4320	4280	4990	5690	5690	5580	4530	3980	3180	2600	2010	1820	1400	1350

	Total	Five–year age group																	
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Wairarapa																			
Total	39,500	2590	2660	3010	2720	1530	1690	2040	2590	2710	3080	2970	2880	2390	2040	1550	1380	950	770
Male	19,300	1310	1360	1510	1420	810	790	1000	1200	1310	1460	1480	1430	1200	1000	770	620	390	230
Female	20,200	1290	1300	1500	1300	710	900	1040	1390	1400	1620	1490	1440	1190	1040	780	760	550	530
Nelson Marlborough																			
Total	134,600	8210	8520	9320	9120	5970	6610	7790	9620	10,300	11,070	9940	9640	7890	6320	4770	3990	3030	2450
Male	66,600	4180	4400	4870	4810	3150	3280	3810	4620	4880	5410	4930	4740	4020	3150	2330	1850	1300	850
Female	68,000	4020	4120	4450	4300	2830	3320	3980	5000	5420	5670	5010	4910	3860	3170	2440	2140	1730	1600
West Coast																			
Total	32,200	1930	2030	2390	2130	1430	1650	1870	2340	2570	2790	2470	2190	1820	1540	1100	900	610	490
Male	16,350	1050	1040	1210	1120	770	800	870	1120	1280	1450	1330	1150	930	790	570	460	270	160
Female	15,900	880	990	1180	1010	660	840	1000	1220	1290	1340	1130	1040	890	750	530	440	330	340
Canterbury																			
Total	490,100	31,370	30,660	32,430	35,650	35,820	30,070	32,190	37,200	37,010	36,670	32,050	29,280	23,530	19,250	14,970	13,520	10,230	8180
Male	240,200	16,090	15,550	16,540	18,520	18,520	14,790	15,360	17,920	17,950	18,060	15,750	14,430	11,550	9350	7000	6030	4190	2610
Female	249,900	15,280	15,120	15,890	17,130	17,300	15,280	16,830	19,280	19,050	18,610	16,300	14,860	11,980	9900	7970	7490	6030	5570
South Canterbury																			
Total	55,300	3130	3490	4000	3730	2130	2340	2930	3670	4050	4360	4040	3940	3260	2930	2400	2170	1540	1170
Male	27,200	1590	1810	2080	1950	1150	1140	1420	1780	1910	2130	2060	1990	1620	1410	1130	1040	580	380
Female	28,100	1530	1680	1920	1780	980	1200	1510	1890	2140	2240	1980	1950	1640	1520	1270	1130	950	790
Otago																			
Total	185,800	10,250	10,530	11,360	16,630	17,490	10,030	10,820	12,040	12,810	13,730	12,420	11,500	9240	7940	6130	5540	4100	3240
Male	90,700	5200	5440	5840	8170	8570	4990	5290	5710	6230	6690	6290	5670	4640	3910	2910	2550	1650	980
Female	95,100	5040	5100	5520	8470	8920	5040	5530	6330	6580	7040	6130	5830	4600	4030	3220	2990	2450	2260
Southland																			
Total	110,400	7360	7210	7680	7330	6810	7340	7720	8220	8550	8590	7360	6600	5200	4470	3460	2920	1930	1680
Male	55,300	3820	3710	4000	3800	3490	3670	3880	4000	4190	4300	3800	3430	2660	2230	1670	1360	770	480
Female	55,200	3540	3500	3680	3530	3320	3670	3850	4220	4360	4290	3550	3170	2540	2240	1790	1560	1160	1200

	Total	Five–year age group																
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Other and unspecified																			
Total	420	5	10	10	5	20	25	35	30	30	45	50	45	45	30	15	10	5	0
Male	280	0	5	5	5	15	20	25	20	15	30	35	30	30	25	10	10	5	0
Female	140	0	5	5	5	5	5	10	5	10	15	15	15	15	10	10	0	0	0
Total																			
Total	4,228,300	292,390	289,910	306,140	319,510	293,140	265,940	277,860	314,510	318,530	313,030	270,030	243,100	197,530	163,170	122,410	104,370	75,760	60,990
Male	2,070,800	149,810	148,230	157,040	162,720	147,270	130,010	132,590	149,900	153,710	152,450	132,880	120,070	97,240	79,410	58,370	48,150	31,440	19,470
Female	2,157,600	142,580	141,680	149,100	156,790	145,870	135,930	145,280	164,600	164,830	160,570	137,150	123,030	100,290	83,760	64,040	56,220	44,320	41,530

Source: Statistics New Zealand

Table A3: New Zealand projected deprivation quintile population by sex and five-year age group, 2008

	Total	Age group																	
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Total population																			
Total	4,196,990	266,785	284,250	300,270	328,295	305,090	255,705	261,390	302,905	309,675	317,765	275,345	244,370	208,060	163,680	123,145	105,570	76,910	67,780
Male	2,064,310	136,615	145,570	154,430	168,000	155,345	129,750	127,475	145,310	149,145	154,305	135,205	121,275	102,540	79,775	58,220	48,260	31,750	21,340
Female	2,132,680	130,170	138,680	145,840	160,295	149,745	125,955	133,915	157,595	160,530	163,460	140,140	123,095	105,520	83,905	64,925	57,310	45,160	46,440
Quintile 1																			
Total	778,499.2	44,186.1	51,032.0	56,263.8	58,933.9	47,824.6	40,108.8	45,147.7	59,706.4	66,775.2	70,986.5	61,837.3	52,102.2	40,054.7	27,704.1	18,822.2	15,715.3	11,193.5	10,105.0
Male	387,462.8	22,703.9	26,024.1	28,904.5	30,585.2	25,357.0	20,405.7	21,667.0	28,027.2	31,976.8	34,795.9	30,952.4	26,726.1	20,502.2	14,114.0	9,337.2	7,411.5	4,784.6	3,187.8
Female	391,036.4	21,482.3	25,007.9	27,359.3	28,348.6	22,467.6	19,703.1	23,480.7	31,679.3	34,798.4	36,190.6	30,884.9	25,376.1	19,552.5	13,590.1	9,485.0	8,303.8	6,408.9	6,917.2
Quintile 2																			
Total	818,138.3	46,986.9	52,918.9	57,835.9	60,146.9	51,279.9	46,278.5	49,938.2	62,299.4	64,456.2	66,665.2	57,485.7	50,921.3	42,926.8	32,793.9	24,308.6	20,836.7	15,658.7	14,400.4
Male	403,549.8	23,947.5	27,215.0	29,677.1	31,178.9	26,705.4	23,621.3	24,286.7	29,574.9	31,288.2	32,657.7	28,346.3	25,466.7	21,173.7	16,019.3	11,616.4	9,706.3	6,524.2	4,544.3
Female	414,588.4	23,039.4	25,703.9	28,158.8	28,968.0	24,574.6	22,657.2	25,651.5	32,724.5	33,167.9	34,007.5	29,139.4	25,454.6	21,753.1	16,774.7	12,692.2	11,130.4	9,134.5	9,856.1
Quintile 3																			
Total	852,774.7	51,627.4	54,143.8	56,790.6	62,276.8	61,486.5	55,563.8	55,948.8	62,514.2	62,180.0	62,990.1	55,116.3	50,022.4	44,188.9	35,417.6	26,866.1	23,309.9	16,889.9	15,441.5
Male	419,837.0	26,359.1	27,572.1	29,222.4	32,404.9	31,430.3	28,280.6	27,658.0	30,405.6	30,197.7	30,693.0	26,927.0	24,622.9	21,623.9	17,271.0	12,670.3	10,680.2	6,984.1	4,833.8
Female	432,937.7	25,268.2	26,571.7	27,568.2	29,871.8	30,056.2	27,283.2	28,290.9	32,108.7	31,982.2	32,297.2	28,189.3	25,399.5	22,565.0	18,146.6	14,195.8	12,629.7	9,905.8	10,607.7
Quintile 4																			
Total	899,857.3	57,970.0	59,336.9	61,593.4	69,457.3	68,189.0	57,110.1	56,344.1	62,062.7	61,180.1	62,656.6	54,429.7	49,637.8	45,235.1	38,634.3	30,688.4	27,214.3	20,405.9	17,711.5
Male	437,516.0	29,635.5	30,329.3	31,779.7	35,292.6	34,060.4	28,967.1	27,584.0	30,293.1	29,279.1	30,075.1	26,347.5	23,919.1	21,724.8	18,221.0	14,114.7	12,127.2	8,199.6	5,566.3
Female	462,341.2	28,334.5	29,007.6	29,813.6	34,164.8	34,128.6	28,143.0	28,760.0	31,769.6	31,901.1	32,581.6	28,082.2	25,718.7	23,510.3	20,413.3	16,573.7	15,087.1	12,206.3	12,145.3
Quintile 5																			
Total	845,098.6	65,846.6	66,646.5	67,620.1	77,341.2	76,162.4	56,501.7	53,847.3	56,122.8	54,886.1	54,211.6	46,219.7	41,472.6	35,472.3	29,038.5	22,414.4	18,453.2	12,732.9	10,108.9
Male	414,469.0	33,870.5	34,336.3	34,750.7	38,455.5	37,697.7	28,400.4	26,179.3	26,903.6	26,304.2	25,939.6	22,491.5	20,425.1	17,398.1	14,097.0	10,463.3	8309.5	5244.0	3202.5
Female	430,629.6	31,976.0	32,310.2	32,869.4	38,885.7	38,464.7	28,101.2	27,668.0	29,219.2	28,581.9	28,272.0	23,728.2	21,047.5	18,074.1	14,941.4	11,951.1	10,143.7	7488.9	6906.4
Other and unspecified																			
Total	2621.9	168.0	171.9	166.2	138.9	147.5	142.1	163.9	199.4	197.5	254.9	256.3	213.6	182.4	91.6	45.3	40.6	29.0	12.7
Male	1475.2	98.4	93.3	95.5	82.9	94.2	74.9	100.0	105.8	99.0	143.8	140.3	115.2	117.3	52.7	18.1	25.2	13.4	5.3
Female	1146.7	69.6	78.7	70.7	56.1	53.3	67.2	63.9	93.7	98.5	111.1	115.9	98.5	65.0	38.9	27.3	15.3	15.6	7.4

Source: Ministry of Health

Table A4: Suicides and age-specific rates, by five-year age group and sex, 1998

Age group	Males		Females	
	Number	Rate	Number	Rate
5–9	0	–	0	–
10–14	8	5.6	4	–
15–19	40	28.7	26	19.8
20–24	65	48.7	9	6.8
25–29	66	48.4	14	9.7
30–34	45	31.7	11	7.3
35–39	46	30.5	10	6.3
40–44	37	27.1	19	13.5
45–49	30	23.9	10	8.0
50–54	17	15.6	6	5.5
55–59	24	27.6	4	–
60–64	19	27.4	3	–
65–69	14	21.6	2	–
70–74	14	25.5	8	12.8
75–79	14	37.5	0	–
80–84	4	–	4	–
85+	2	–	2	–
Total	**445**	**17.4**	**132**	**4.9**

Source: New Zealand Mortality Collection

Note: Rates for some age groups have been suppressed because of small numbers of deaths in these categories.

Table A5: Suicide deaths and age-standardised rates, by DHB, 2004–2008

DHB	Number	Rate
Northland	104	15.6
Waitemata	240	9.0
Auckland	228	9.6
Counties Manukau	253	11.3
Waikato	201	11.4
Lakes	66	13.2
Bay of Plenty	142	14.0
Tairawhiti	40	18.5
Hawke's Bay	109	14.7
Taranaki	78	14.8
MidCentral	126	15.2
Whanganui	48	16.5
Capital & Coast	132	9.0
Hutt Valley	62	8.9
Wairarapa	29	17.6
Nelson Marlborough	88	12.8
West Coast	27	16.0
Canterbury	301	11.6
South Canterbury	31	13.3
Otago	110	11.1
Southland	81	15.3

Source: New Zealand Mortality Collection

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the WHO standard world population.

Table A6: Suicide deaths by five-year age group and sex, 1948–2008

	Total	Age groups																				
		0–	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85+
1948																							
Total	187	0	0	0	0	0	0	0	6	12	8	17	17	14	16	24	14	18	19	12	9	1	0
Male	134	0	0	0	0	0	0	0	5	11	6	9	9	10	12	18	8	15	15	7	8	1	0
Female	53	0	0	0	0	0	0	0	1	1	2	8	8	4	4	6	6	3	4	5	1	0	0
1949																							
Total	176	0	0	0	0	0	0	0	5	13	16	19	11	14	19	17	16	16	14	10	2	2	2
Male	119	0	0	0	0	0	0	0	4	9	9	12	10	7	15	11	9	10	8	10	1	2	2
Female	57	0	0	0	0	0	0	0	1	4	7	7	1	7	4	6	7	6	6	0	1	0	0
1950																							
Total	172	0	0	0	0	0	0	0	8	6	4	13	15	13	15	13	22	13	23	17	2	5	3
Male	128	0	0	0	0	0	0	0	8	6	3	9	12	8	8	8	17	6	19	14	2	5	3
Female	44	0	0	0	0	0	0	0	0	0	1	4	3	5	7	5	5	7	4	3	0	0	0
1951																							
Total	188	0	0	0	0	0	0	0	4	8	9	20	15	17	22	22	20	12	16	14	6	2	1
Male	141	0	0	0	0	0	0	0	4	7	6	15	11	12	20	17	12	8	14	9	5	1	0
Female	47	0	0	0	0	0	0	0	0	1	3	5	4	5	2	5	8	4	2	5	1	1	1
1952																							
Total	198	0	0	0	0	0	0	1	6	7	18	13	11	15	14	20	24	21	13	13	13	7	2
Male	148	0	0	0	0	0	0	1	5	7	12	9	8	10	10	12	21	12	11	10	12	7	1
Female	50	0	0	0	0	0	0	0	1	0	6	4	3	5	4	8	3	9	2	3	1	0	1
1953																							
Total	196	0	0	0	0	0	0	1	4	8	7	9	15	23	14	24	24	16	19	17	11	1	3
Male	140	0	0	0	0	0	0	1	4	6	6	8	7	18	10	18	14	11	12	15	7	1	2
Female	56	0	0	0	0	0	0	0	0	2	1	1	8	5	4	6	10	5	7	2	4	0	1
1954																							
Total	177	0	0	0	0	0	0	1	2	3	19	10	13	10	9	20	26	15	20	15	9	3	2
Male	134	0	0	0	0	0	0	1	2	3	13	10	11	7	8	14	18	8	16	12	7	2	2
Female	43	0	0	0	0	0	0	0	0	0	6	0	2	3	1	6	8	7	4	3	2	1	0
1955																							
Total	187	0	0	0	0	0	0	0	3	9	19	11	10	18	19	20	25	17	11	13	7	4	1
Male	136	0	0	0	0	0	0	0	2	5	15	10	9	14	16	13	18	10	3	10	6	4	1
Female	51	0	0	0	0	0	0	0	1	4	4	1	1	4	3	7	7	7	8	3	1	0	0

	Total	Age groups																				
		0–	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85+
1956																							
Total	199	0	0	0	0	0	0	0	2	6	12	10	14	24	22	36	19	17	14	8	10	3	2
Male	132	0	0	0	0	0	0	0	1	5	10	7	10	11	13	25	13	11	11	4	7	2	2
Female	67	0	0	0	0	0	0	0	1	1	2	3	4	13	9	11	6	6	3	4	3	1	0
1957																							
Total	215	0	0	0	0	0	0	1	4	12	13	21	12	15	21	29	19	20	21	14	10	3	0
Male	153	0	0	0	0	0	0	1	4	11	9	16	11	9	15	18	11	11	18	8	8	3	0
Female	62	0	0	0	0	0	0	0	0	1	4	5	1	6	6	11	8	9	3	6	2	0	0
1958																							
Total	220	0	0	0	0	0	0	2	7	9	11	10	17	23	29	34	14	17	17	11	8	4	7
Male	164	0	0	0	0	0	0	2	6	7	8	9	12	16	23	26	9	12	13	6	7	2	6
Female	56	0	0	0	0	0	0	0	1	2	3	1	5	7	6	8	5	5	4	5	1	2	1
1959																							
Total	204	0	0	0	0	0	0	0	6	11	13	15	18	23	23	19	20	11	9	14	11	9	2
Male	157	0	0	0	0	0	0	0	5	9	10	13	16	17	18	15	14	5	5	11	9	8	2
Female	47	0	0	0	0	0	0	0	1	2	3	2	2	6	5	4	6	6	4	3	2	1	0
1960																							
Total	230	0	0	0	0	0	0	0	6	8	16	12	19	32	33	19	27	17	12	16	8	4	1
Male	165	0	0	0	0	0	0	0	3	7	15	9	14	23	26	13	18	9	6	11	7	3	1
Female	65	0	0	0	0	0	0	0	3	1	1	3	5	9	7	6	9	8	6	5	1	1	0
1961																							
Total	204	0	0	0	0	0	0	1	4	13	18	12	22	16	22	19	27	7	18	14	7	3	1
Male	155	0	0	0	0	0	0	1	4	11	16	8	19	13	13	14	20	6	13	8	6	3	0
Female	49	0	0	0	0	0	0	0	0	2	2	4	3	3	9	5	7	1	5	6	1	0	1
1962																							
Total	208	0	0	0	0	0	0	0	5	8	14	19	20	28	20	18	17	23	9	12	9	3	3
Male	142	0	0	0	0	0	0	0	4	4	10	17	12	18	11	13	9	18	6	8	8	2	2
Female	66	0	0	0	0	0	0	0	1	4	4	2	8	10	9	5	8	5	3	4	1	1	1
1963																							
Total	244	0	0	0	0	0	0	0	5	18	9	14	15	27	35	28	28	20	12	20	7	5	1
Male	157	0	0	0	0	0	0	0	5	14	7	11	12	19	21	14	14	12	8	13	3	3	1
Female	87	0	0	0	0	0	0	0	0	4	2	3	3	8	14	14	14	8	4	7	4	2	0

	Total	Age groups																				
		0–	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85+
1964																							
Total	207	0	0	0	0	0	0	0	2	11	13	12	11	18	27	25	30	30	10	11	5	2	0
Male	127	0	0	0	0	0	0	0	1	4	8	9	8	15	20	14	16	18	5	3	5	1	0
Female	80	0	0	0	0	0	0	0	1	7	5	3	3	3	7	11	14	12	5	8	0	1	0
1965																							
Total	242	0	0	0	0	0	0	0	6	15	14	15	17	20	29	32	25	24	9	16	13	6	1
Male	161	0	0	0	0	0	0	0	2	11	9	9	11	15	20	25	17	13	6	10	7	5	1
Female	81	0	0	0	0	0	0	0	4	4	5	6	6	5	9	7	8	11	3	6	6	1	0
1966																							
Total	246	0	0	0	0	0	0	3	10	13	4	11	20	23	28	39	26	25	14	18	6	5	1
Male	156	0	0	0	0	0	0	2	4	7	2	8	12	16	21	22	13	18	8	13	5	4	1
Female	90	0	0	0	0	0	0	1	6	6	2	3	8	7	7	17	13	7	6	5	1	1	0
1967																							
Total	274	0	0	0	0	0	0	1	6	21	11	21	27	27	27	26	32	24	18	15	11	5	2
Male	191	0	0	0	0	0	0	1	5	16	8	18	24	19	19	16	20	18	9	6	8	3	1
Female	83	0	0	0	0	0	0	0	1	5	3	3	3	8	8	10	12	6	9	9	3	2	1
1968																							
Total	265	0	0	0	0	0	0	2	8	17	10	18	27	23	34	33	25	29	22	7	5	4	1
Male	179	0	0	0	0	0	0	1	6	14	8	12	21	16	23	18	17	15	17	4	4	2	1
Female	86	0	0	0	0	0	0	1	2	3	2	6	6	7	11	15	8	14	5	3	1	2	0
1969																							
Total	278	0	0	0	0	0	0	2	13	23	21	18	15	25	31	22	31	22	25	14	10	4	2
Male	181	0	0	0	0	0	0	2	6	16	16	11	9	20	20	10	20	14	13	10	8	4	2
Female	97	0	0	0	0	0	0	0	7	7	5	7	6	5	11	12	11	8	12	4	2	0	0
1970																							
Total	271	0	0	0	0	0	1	2	15	24	12	11	17	33	26	28	28	18	24	16	7	9	0
Male	178	0	0	0	0	0	1	2	12	18	8	10	11	26	19	17	13	7	16	8	5	5	0
Female	93	0	0	0	0	0	0	0	3	6	4	1	6	7	7	11	15	11	8	8	2	4	0
1971																							
Total	237	0	0	0	0	0	0	2	15	21	14	10	20	19	28	29	22	22	11	13	7	2	2
Male	149	0	0	0	0	0	0	2	10	14	7	5	15	16	17	16	12	12	6	9	5	1	2
Female	88	0	0	0	0	0	0	0	5	7	7	5	5	3	11	13	10	10	5	4	2	1	0

	Total	Age groups																				
		0–	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85+
1972																							
Total	262	0	0	0	0	0	0	2	12	24	20	25	13	24	22	28	27	19	17	17	7	1	4
Male	173	0	0	0	0	0	0	1	10	13	12	15	9	16	16	20	19	13	8	12	5	1	3
Female	89	0	0	0	0	0	0	1	2	11	8	10	4	8	6	8	8	6	9	5	2	0	1
1973																							
Total	261	0	0	0	0	0	0	3	19	20	18	17	12	14	29	35	21	24	14	16	11	5	3
Male	181	0	0	0	0	0	0	2	14	13	12	15	11	10	22	22	15	12	7	13	7	3	3
Female	80	0	0	0	0	0	0	1	5	7	6	2	1	4	7	13	6	12	7	3	4	2	0
1974																							
Total	273	0	0	0	0	0	0	2	13	23	24	17	20	24	26	19	28	31	19	17	3	4	3
Male	187	0	0	0	0	0	0	1	10	17	13	12	15	14	21	13	15	19	16	12	3	3	3
Female	86	0	0	0	0	0	0	1	3	6	11	5	5	10	5	6	13	12	3	5	0	1	0
1975																							
Total	293	0	0	0	0	0	0	1	20	32	25	16	25	24	30	20	26	28	20	10	5	7	4
Male	195	0	0	0	0	0	0	1	12	25	17	9	19	15	20	13	16	17	12	7	4	5	3
Female	98	0	0	0	0	0	0	0	8	7	8	7	6	9	10	7	10	11	8	3	1	2	1
1976																							
Total	291	0	0	0	0	0	0	1	15	27	28	18	17	24	25	22	31	31	19	18	11	3	1
Male	198	0	0	0	0	0	0	1	11	23	18	13	13	16	15	11	21	22	15	8	9	1	1
Female	93	0	0	0	0	0	0	0	4	4	10	5	4	8	10	11	10	9	4	10	2	2	0
1977																							
Total	365	0	0	0	0	0	0	2	26	44	41	33	34	25	30	29	28	20	20	11	11	8	3
Male	256	0	0	0	0	0	0	1	23	36	29	23	20	18	25	20	13	13	12	6	8	6	3
Female	109	0	0	0	0	0	0	1	3	8	12	10	14	7	5	9	15	7	8	5	3	2	0
1978																							
Total	322	0	0	0	0	0	0	3	18	37	29	22	20	23	29	25	30	32	15	20	13	4	2
Male	208	0	0	0	0	0	0	2	17	30	21	16	12	15	16	15	13	17	9	13	8	3	1
Female	114	0	0	0	0	0	0	1	1	7	8	6	8	8	13	10	17	15	6	7	5	1	1
1979																							
Total	302	0	0	0	0	0	0	0	23	24	31	26	21	19	31	27	23	24	16	17	14	5	1
Male	213	0	0	0	0	0	0	0	17	19	22	21	14	14	24	22	12	17	9	9	8	4	1
Female	89	0	0	0	0	0	0	0	6	5	9	5	7	5	7	5	11	7	7	8	6	1	0

	Total	Age groups																				
		0–	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85+
1980																							
Total	337	0	0	0	0	0	0	2	34	47	34	30	24	19	16	34	20	15	17	19	13	7	6
Male	225	0	0	0	0	0	0	2	20	38	25	17	18	13	11	16	16	13	10	12	6	5	3
Female	112	0	0	0	0	0	0	0	14	9	9	13	6	6	5	18	4	2	7	7	7	2	3
1981																							
Total	320	0	0	0	0	0	0	4	17	43	26	27	30	20	24	19	25	25	15	23	11	8	3
Male	241	0	0	0	0	0	0	4	14	36	16	21	25	17	19	12	19	17	12	17	6	3	3
Female	79	0	0	0	0	0	0	0	3	7	10	6	5	3	5	7	6	8	3	6	5	5	0
1982																							
Total	364	0	0	0	0	0	0	1	18	45	34	35	29	19	18	23	47	26	21	25	10	10	3
Male	257	0	0	0	0	0	0	1	16	36	27	28	21	12	10	14	27	15	17	18	7	6	2
Female	107	0	0	0	0	0	0	0	2	9	7	7	8	7	8	9	20	11	4	7	3	4	1
1983																							
Total	352	0	0	0	0	0	0	4	24	46	37	27	34	29	18	21	27	19	30	15	14	5	2
Male	250	0	0	0	0	0	0	3	20	38	26	22	25	15	12	12	20	11	24	8	9	4	1
Female	102	0	0	0	0	0	0	1	4	8	11	5	9	14	6	9	7	8	6	7	5	1	1
1984																							
Total	389	0	0	0	0	0	0	4	25	47	49	38	30	29	23	22	27	25	18	18	16	14	4
Male	297	0	0	0	0	0	0	2	21	36	41	28	26	22	17	16	18	18	13	14	12	11	2
Female	92	0	0	0	0	0	0	2	4	11	8	10	4	7	6	6	9	7	5	4	4	3	2
1985																							
Total	338	0	0	0	0	0	0	5	30	45	36	28	21	21	23	21	25	16	25	20	14	6	2
Male	255	0	0	0	0	0	0	2	25	35	26	25	15	15	17	17	14	12	20	14	11	5	2
Female	83	0	0	0	0	0	0	3	5	10	10	3	6	6	6	4	11	4	5	6	3	1	0
1986																							
Total	414	0	0	0	0	0	0	4	38	53	43	31	41	37	23	30	23	28	22	14	15	9	3
Male	301	0	0	0	0	0	0	2	29	39	34	19	32	29	19	20	14	22	14	10	9	7	2
Female	113	0	0	0	0	0	0	2	9	14	9	12	9	8	4	10	9	6	8	4	6	2	1
1987																							
Total	463	0	0	0	0	0	0	8	36	77	64	39	30	30	33	27	35	18	18	11	17	16	4
Male	363	0	0	0	0	0	0	7	29	64	51	28	24	26	24	18	26	16	14	8	14	11	3
Female	100	0	0	0	0	0	0	1	7	13	13	11	6	4	9	9	9	2	4	3	3	5	1

	Total	Age groups																				
		0–	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85+
1988																							
Total	484	0	0	0	0	0	0	2	54	77	53	48	28	31	34	23	30	32	17	25	19	10	1
Male	381	0	0	0	0	0	0	2	47	59	40	32	24	28	32	18	27	19	12	21	14	6	0
Female	103	0	0	0	0	0	0	0	7	18	13	16	4	3	2	5	3	13	5	4	5	4	1
1989																							
Total	465	0	0	0	0	0	1	7	58	73	66	35	30	34	31	26	15	24	25	17	7	11	5
Male	372	0	0	0	0	0	1	7	50	61	50	29	26	27	23	20	10	16	21	10	7	10	4
Female	93	0	0	0	0	0	0	0	8	12	16	6	4	7	8	6	5	8	4	7	0	1	1
1990																							
Total	455	0	0	0	0	0	0	2	44	86	53	40	42	34	27	25	25	22	14	14	13	10	4
Male	363	0	0	0	0	0	0	2	37	74	43	29	35	22	23	19	20	19	9	10	8	9	4
Female	92	0	0	0	0	0	0	0	7	12	10	11	7	12	4	6	5	3	5	4	5	1	0
1991																							
Total	474	0	0	0	0	0	0	4	45	80	65	49	42	39	41	28	13	18	18	14	10	7	1
Male	380	0	0	0	0	0	0	4	41	68	53	42	33	27	31	19	11	13	15	6	9	7	1
Female	94	0	0	0	0	0	0	0	4	12	12	7	9	12	10	9	2	5	3	8	1	0	0
1992																							
Total	493	0	0	0	0	0	0	5	44	85	71	42	39	34	33	30	27	34	13	15	8	7	6
Male	397	0	0	0	0	0	0	4	39	73	60	38	34	25	24	18	18	27	9	13	5	6	4
Female	96	0	0	0	0	0	0	1	5	12	11	4	5	9	9	12	9	7	4	2	3	1	2
1993																							
Total	443	0	0	0	0	0	0	3	40	86	50	55	36	33	35	19	17	17	20	13	12	5	2
Male	349	0	0	0	0	0	0	2	34	76	38	40	33	22	29	11	13	9	18	9	10	4	1
Female	94	0	0	0	0	0	0	1	6	10	12	15	3	11	6	8	4	8	2	4	2	1	1
1994																							
Total	512	0	0	0	0	0	0	7	56	81	53	63	32	38	34	25	23	25	20	24	10	14	7
Male	409	0	0	0	0	0	0	5	44	67	44	49	27	32	26	17	19	23	17	17	6	10	6
Female	103	0	0	0	0	0	0	2	12	14	9	14	5	6	8	8	4	2	3	7	4	4	1
1995																							
Total	543	0	0	0	0	0	0	6	59	97	66	50	47	38	44	29	23	14	26	16	15	10	3
Male	427	0	0	0	0	0	0	4	45	77	58	38	38	29	35	20	20	9	21	14	9	8	2
Female	116	0	0	0	0	0	0	2	14	20	8	12	9	9	9	9	3	5	5	2	6	2	1

	Total	Age groups																				
		0–	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85+
1996																							
Total	540	0	0	0	0	0	0	7	59	84	73	69	49	31	38	25	24	15	20	22	8	10	6
Male	428	0	0	0	0	0	0	3	38	67	64	57	42	24	27	19	21	13	18	16	5	8	6
Female	112	0	0	0	0	0	0	4	21	17	9	12	7	7	11	6	3	2	2	6	3	2	0
1997																							
Total	561	0	0	0	0	0	0	8	72	70	83	71	51	50	31	29	24	18	13	17	10	9	5
Male	440	0	0	0	0	0	0	5	53	60	70	54	40	36	22	21	17	16	12	15	7	9	3
Female	121	0	0	0	0	0	0	3	19	10	13	17	11	14	9	8	7	2	1	2	3	0	2
1998																							
Total	577	0	0	0	0	0	0	12	66	74	80	56	56	56	40	23	28	22	16	22	14	8	4
Male	445	0	0	0	0	0	0	8	40	65	66	45	46	37	30	17	24	19	14	14	14	4	2
Female	132	0	0	0	0	0	0	4	26	9	14	11	10	19	10	6	4	3	2	8	0	4	2
1999																							
Total	516	0	0	0	0	0	0	6	48	72	67	59	61	48	33	33	23	15	9	18	13	8	3
Male	385	0	0	0	0	0	0	3	29	54	56	50	45	29	25	26	19	13	4	14	10	6	2
Female	131	0	0	0	0	0	0	3	19	18	11	9	16	19	8	7	4	2	5	4	3	2	1
2000																							
Total	458	0	0	0	0	0	0	4	42	54	71	55	51	31	30	31	26	16	14	13	5	9	6
Male	375	0	0	0	0	0	0	3	31	50	58	47	40	25	23	25	21	11	12	13	5	6	5
Female	83	0	0	0	0	0	0	1	11	4	13	8	11	6	7	6	5	5	2	0	0	3	1
2001																							
Total	507	0	0	0	0	0	0	3	43	67	59	62	57	61	27	23	20	21	17	13	17	13	4
Male	388	0	0	0	0	0	0	1	30	57	42	50	46	50	18	15	16	15	13	10	14	7	4
Female	119	0	0	0	0	0	0	2	13	10	17	12	11	11	9	8	4	6	4	3	3	6	0
2002																							
Total	466	0	0	0	0	0	0	0	40	55	52	56	57	48	35	30	28	18	14	12	6	6	9
Male	353	0	0	0	0	0	0	0	25	40	43	39	43	40	27	21	25	13	11	10	5	4	7
Female	113	0	0	0	0	0	0	0	15	15	9	17	14	8	8	9	3	5	3	2	1	2	2
2003																							
Total	517	0	0	0	0	0	0	5	51	46	46	55	60	51	47	41	25	24	12	17	17	14	6
Male	376	0	0	0	0	0	0	4	35	31	35	44	37	44	34	28	21	18	8	11	14	9	3
Female	141	0	0	0	0	0	0	1	16	15	11	11	23	7	13	13	4	6	4	6	3	5	3

	Total	Age groups																				
		0–	1–	2–	3–	4–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85+
2004																							
Total	488	0	0	0	0	0	0	6	50	63	50	45	57	47	41	24	32	20	11	12	12	9	9
Male	379	0	0	0	0	0	0	4	34	49	44	32	44	40	31	17	23	17	9	8	11	7	9
Female	109	0	0	0	0	0	0	2	16	14	6	13	13	7	10	7	9	3	2	4	1	2	0
2005																							
Total	511	0	0	0	0	0	0	2	45	63	56	54	55	51	41	39	42	15	18	5	12	6	7
Male	380	0	0	0	0	0	0	0	36	48	44	40	42	33	32	31	29	13	13	3	8	2	6
Female	131	0	0	0	0	0	0	2	9	15	12	14	13	18	9	8	13	2	5	2	4	4	1
2006																							
Total	526	0	0	0	0	0	0	6	61	58	54	48	53	54	38	43	46	14	13	16	4	6	12
Male	388	0	0	0	0	0	0	2	49	46	36	37	37	38	30	31	36	13	8	11	1	4	9
Female	138	0	0	0	0	0	0	4	12	12	18	11	16	16	8	12	10	1	5	5	3	2	3
2007																							
Total	487	0	0	0	0	0	0	2	41	52	40	52	60	53	46	42	31	19	10	9	10	13	7
Male	371	0	0	0	0	0	0	1	29	41	34	45	45	35	38	29	20	12	10	9	10	10	3
Female	116	0	0	0	0	0	0	1	12	11	6	7	15	18	8	13	11	7	0	0	0	3	4
2008 (provisional)																							
Total	497	0	0	0	0	0	0	3	53	62	47	39	47	45	50	38	40	22	15	11	6	12	7
Male	366	0	0	0	0	0	0	1	31	50	34	34	30	32	38	30	31	19	11	7	5	7	6
Female	131	0	0	0	0	0	0	2	22	12	13	5	17	13	12	8	9	3	4	4	1	5	1

Appendix 2: Further information

General information about suicide prevention

For general information about suicide and suicide prevention, contact:

Suicide Prevention Information New Zealand (SPINZ)
PO Box 10-051
Dominion Road
Auckland 1446
Ph: (09) 300 7035
Fax: (09) 300 7020
Email: info@spinz.org.nz
Website: http://www.spinz.org.nz

To find out more about the *New Zealand Suicide Prevention Strategy 2006–2016*, see the Ministry of Health's suicide prevention web page (http://www.moh.govt.nz/suicideprevention).

Statistics

For health data, including suicide statistics, contact:

National Collections and Reporting
National Health Board
Ministry of Health
PO Box 5013
Wellington
Ph: (04) 496 2000
Fax: (04) 816 2898
Email: data-enquiries@moh.govt.nz
Website: http://www.moh.govt.nz

More copies of this publication

For more copies of this publication, or *Suicide Facts* for previous years, see the Ministry of Health website (http://www.moh.govt.nz/suicideprevention), contact SPINZ (see above) or contact:

Wickliffe Limited
PO Box 932
Dunedin
Ph: (04) 496 2277
Email: moh@wickliffe.co.nz
Quote: HP 5270