

Suicide Facts: Deaths and self-harm hospitalisations

2006

Released December 2008

newzealand.govt.nz

**Suicide Facts: Deaths
and intentional self-harm
hospitalisations**

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Acknowledgements

Many people have assisted in the production of this publication. In particular, the Information Directorate thanks the peer reviewers for their valuable contribution.

Citation: Ministry of Health. 2008. *Suicide Facts: Deaths and intentional self-harm hospitalisations 2006*. Wellington: Ministry of Health.

Published in December 2008 by the Ministry of Health
PO Box 5013, Wellington, New Zealand

ISBN 978-0-478-31881-4 (print)
ISBN 978-0-478-31882-1 (online)
HP 4735

This document is available on the websites:
<http://www.nzhis.govt.nz> and <http://www.moh.govt.nz>

Preface

Each year approximately 500 New Zealanders die by suicide – more than those who die from motor vehicle accidents. Data suggests that suicide is the sixth-highest cause of avoidable deaths in those aged less than 75 years, accounting for approximately 6 percent of avoidable deaths (Page et al 2006).

There are more than 2500 admissions to hospital every year for intentional self-harm where the admitted person stayed longer than 48 hours and was admitted via the emergency department. It is important to recognise that the motivation for intentional self-harm varies, and therefore hospitalisation data is not a measure of attempts to take one's life by suicide.

While this publication provides the latest suicide and intentional self-harm data for 2006, it does not attempt to explain the causes of suicidal behaviour. Note that because of changes in methodology it is not advisable to compare the hospitalisation data in this publication to previous *Suicide Facts* publications. However, comparing the data *within* this publication across years is appropriate. More details on this are included in the *Technical Notes* section.

In *Suicide Facts 2005–2006 data* (Ministry of Health 2007), the intentional self-harm hospitalisation data for 2006 was published with suicide data for 2005, because these were the latest years available for each data set. However, in this year's publication we have used 2006 data for both suicide deaths and intentional self-harm hospitalisations to establish consistency. The 2007 intentional self-harm hospitalisation figures will be put on our website once they are available.

Suicide prevention in New Zealand is guided by the *New Zealand Suicide Prevention Strategy 2006–2016* (Associate Minister of Health 2006), the *New Zealand Suicide Prevention Action Plan 2008–2012: The summary for action* (Ministry of Health 2008b) and the *New Zealand Suicide Prevention Action Plan 2008–2012: The evidence for action* (Ministry of Health 2008a). *Suicide Facts: Deaths and intentional self-harm hospitalisations 2006* and subsequent annual updates will contribute to monitoring and evaluating the progress of the implementation of this strategy and the Action Plan.

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Key points

Suicide

Overview
<ul style="list-style-type: none">• A total of 524 people died by suicide in New Zealand in 2006.• This equates to 12.2 deaths per 100,000 population (age standardised).• Suicide rates have fallen significantly by 19.1 percent since 1998.
Sex
<ul style="list-style-type: none">• There were 18.5 male deaths per 100,000 population (age standardised) in 2006, down 22.7 percent since 1995.• There were 6.3 female deaths per 100,000 population (age standardised) in 2006, steady since 1986.
Age
<ul style="list-style-type: none">• There were 31.5 male deaths per 100,000 population in the 20–24 years age group in 2006.• There were 14.2 female deaths per 100,000 population in the 25–29 years age group in 2006.• There has been a significant drop (40 percent) in male suicide rates for those aged 20–29 years since 1996.• The peak age group for female suicide rates has changed from 15–19 years to 25–29 years since 1996.
Youth
<ul style="list-style-type: none">• There were 31.1 male deaths per 100,000 population in the 15–24 years age group in 2006.• There were 8.0 female deaths per 100,000 population in the 15–24 years age group in 2006.• The male youth suicide rate was almost four times the female youth rate.
Ethnicity
<ul style="list-style-type: none">• There were 17.8 Māori deaths per 100,000 population (age standardised) in 2006.• There were 11.0 non-Māori deaths per 100,000 population (age standardised) in 2006, which is significantly lower than the Māori rate.• Māori suicide death rates show no trend since 1996, but the current rate is 10.9 percent lower than the peak rate in 1998.• There were 7.2 Pacific peoples deaths per 100,000 population (age standardised) and 3.1 Asian peoples deaths per 100,000 population (age standardised) in 2006.
Deprivation
<ul style="list-style-type: none">• There were 17.4 deaths per 100,000 population (age standardised) from the most deprived areas in 2006.• There were 8.7 deaths per 100,000 population (age standardised) from the least deprived areas in 2006.• This is a significant difference in rates between the least deprived areas and the most deprived areas.
District Health Boards
<ul style="list-style-type: none">• For 2002–2006 Wairarapa had the highest age-standardised suicide rate (19.4 deaths per 100,000 population).• For 2002–2006 Auckland had the lowest age-standardised suicide rate (9.2 deaths per 100,000 population).

Intentional self-harm hospitalisations

Overview
<ul style="list-style-type: none"> • There were 2868 intentional self-harm hospitalisations in New Zealand in 2006. • This equates to 69.7 hospitalisations per 100,000 population (age-standardised rate). • Between 1996 and 2006 there was a significant decrease in rates (per 100,000 population) of 18.8 percent.
Sex
<ul style="list-style-type: none"> • There were 48.8 male hospitalisations per 100,000 male population in 2006 (age-standardised rate), a significant reduction of 26.9 percent since 1996. • There were 90.3 female hospitalisations per 100,000 female population in 2006 (age-standardised rate), a significant reduction of 14.0 percent since 1996.
Age
<ul style="list-style-type: none"> • Males are most commonly hospitalised in the age range 35–39 years. • Females are most commonly hospitalised in the age range 15–19 years. • Since 1996 male rates have dropped markedly in the 15–29 years age range. • Since 1996 female rates have dropped markedly in the 15–29 years range and increased in the 40–54 years range.
Youth
<ul style="list-style-type: none"> • Males aged 15–24 years have shown a significant downward trend in rates since 1996 (down 45.5 percent). • Females aged 15–24 years have shown a significant downward trend since 1996 (down 24.6 percent).
Ethnicity
<ul style="list-style-type: none"> • There were 77.3 Māori hospitalisations in 2006 (age-standardised rate per 100,000). • There were 68.2 non-Māori hospitalisations in 2006 (age-standardised rate per 100,000). • Rates for Māori hospitalisations (age standardised) have remained relatively stable since 1996. • Rates for non-Māori hospitalisations (age standardised) have dropped markedly since 1996 (by 22.3 percent).
Deprivation
<ul style="list-style-type: none"> • In 2006 males from the most deprived areas were almost three times more likely to be hospitalised than those in the least deprived areas. • In 2006 females from the most deprived areas were almost twice as likely to be hospitalised as those in the least deprived areas.
District Health Boards
<p>For self-harm hospitalisation:</p> <ul style="list-style-type: none"> • Wairarapa had the highest age-standardised rate in 2006 (158.0 per 100,000 population) • Auckland had the lowest age-standardised rate in 2006 (29.9 per 100,000 population) • Lakes had the highest female-to-male rate ratio of 3.3 in 2006 • Auckland had the lowest female-to-male rate ratio of 1.0 in 2006.

Suicide Deaths in 2006

Overview

A total of 524 people died by suicide in 2006. Table 1 below shows the number of suicides and age-standardised rates for the period 1986–2006.

Table 1: Suicide deaths and age-standardised rates, 1986–2006

Year	Number	Rate
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	524	12.2

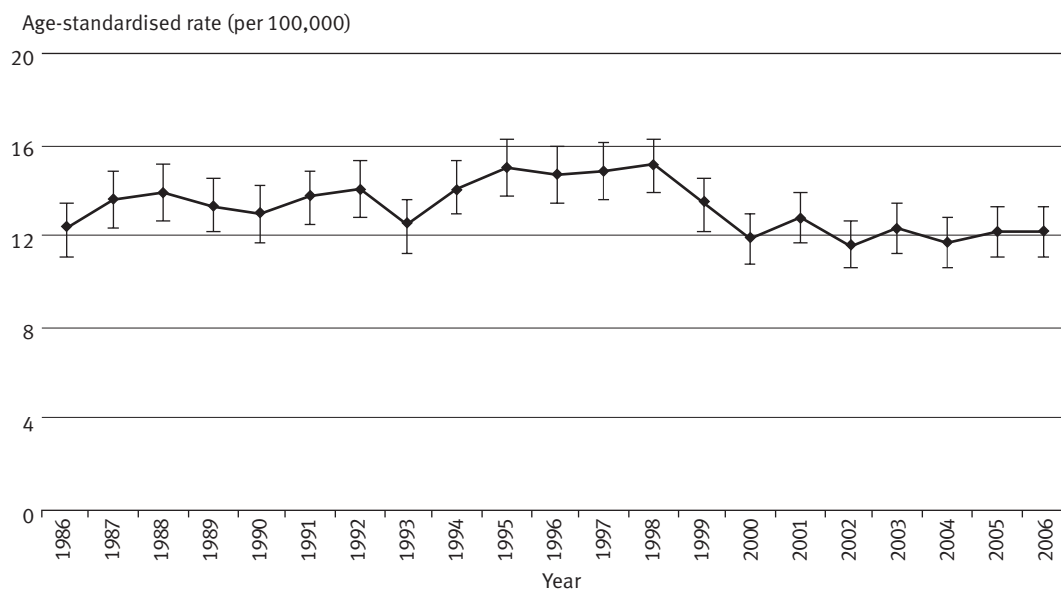
Source: New Zealand Mortality Collection

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

The annual age-standardised rate for New Zealand is presented in Figure 1, with confidence interval bands. The annual age-standardised suicide rate for the total population was 12.2 per 100,000 population in 2006, the same rate as in 2005.

In 1998 the age-standardised rate of suicide for the total population was at its highest since the 1920s at 15.1 deaths per 100,000 population, and it has been generally declining since then. Although the lowest rate since 1985 was 11.7 deaths per 100,000 population in 2004, the current rate still represents a statistically significant decrease of 19.1 percent since 1998. The rates in the years 2004 to 2006 have returned to approximately the levels of 1986 to 1993. (See the *Definitions* section of this publication for information on confidence intervals and statistical significance.)

Figure 1: Suicide age-standardised death rates, 1986–2006



Source: New Zealand Mortality Collection

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

The sub-groups of the New Zealand population with the highest suicide mortality rates in 2006 were males, Māori (as opposed to non-Māori), male youth (age group 15–24 years), and those residing in the most deprived areas (quintile 5). These are described further in later sections of this publication.

Sex

Male and female suicide deaths and age-standardised rates per 100,000 population since 1986 are set out in Table 2.

Table 2: Suicide deaths and age-standardised rates, by sex, 1986–2006

Year	Males		Females		Sex rate ratio (M:F)
	Number	Rate	Number	Rate	
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	5.5	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	3.5
2005	380	18.6	131	6.0	3.1
2006	386	18.5	138	6.3	2.9

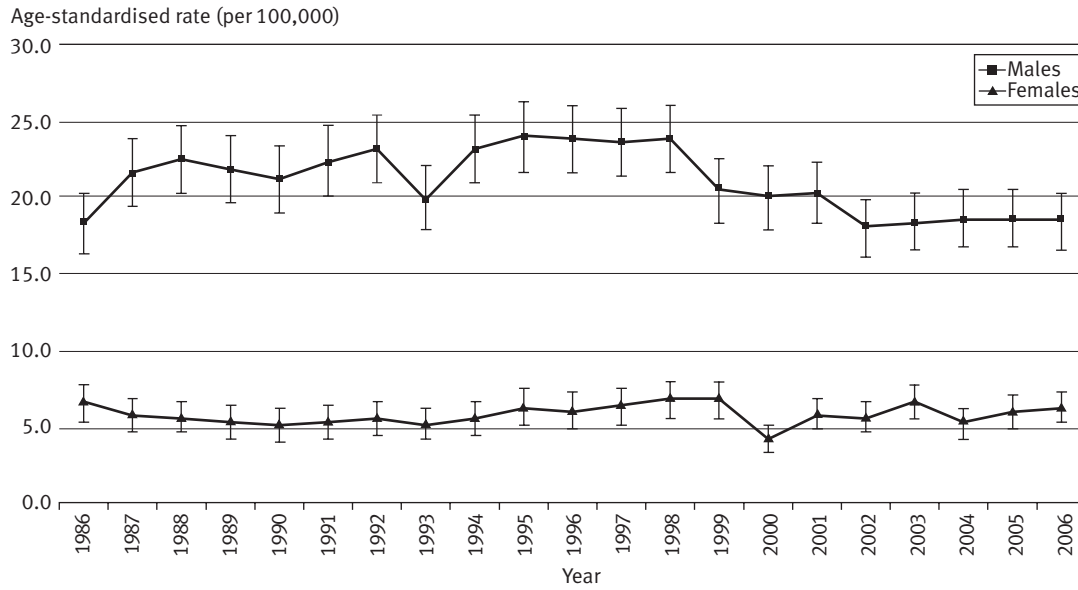
Source: New Zealand Mortality Collection

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

A total of 386 males died by suicide in 2006. That year the age-standardised suicide rate for males was 18.5 per 100,000 population, which was a statistically significant decrease of 22.7 percent from the male peak in 1995 (23.9 per 100,000 population). This is illustrated in Figure 2, with the upper confidence interval bands for the years 2002 to 2006 falling below the lower confidence interval bands for 1994 to 1998. However, these recent rates are not significantly different from the rate in 1986.

For females, there was a small increase in suicide deaths in 2006 to 138, which corresponds to an age-standardised rate of suicide for females of 6.3 per 100,000 population. The rate has remained relatively steady, averaging 5.8 per 100,000 population since 1986. This is shown clearly in Figure 2, with the year 2000 being the only unusual year.

Figure 2: Suicide age-standardised death rates, by sex, 1986–2006

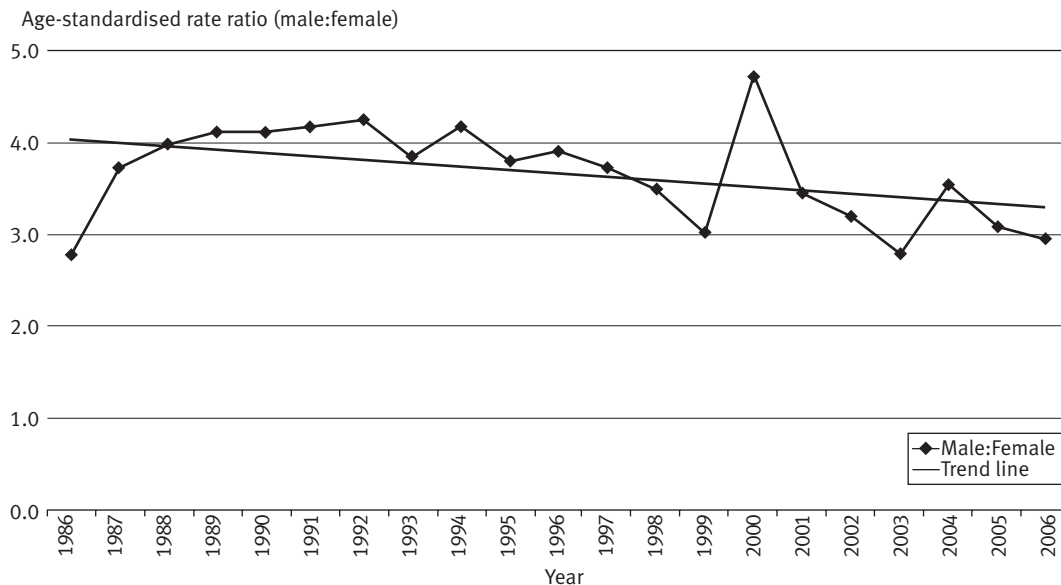


Source: New Zealand Mortality Collection

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

The rate of male suicides is significantly higher than the rate of female suicides, and from 1988 to 1996 the ratio (of age-standardised rates) was approximately 4:1. The current ratio of 2.9:1 is indicative of a downward trend since 1992, as shown in Figure 3.

Figure 3: Sex rate ratio (M:F), 1997–2006



Source: New Zealand Mortality Collection

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

Age

Suicide death numbers and age-specific rates for five-year age groups are shown in Table 3. The highest rate for 2006 occurred in the 25–29 years age group (21.1 suicide deaths per 100,000 population). This was also the age group with the highest rate for females (14.2 suicide deaths per 100,000 population), although for males the highest suicide rates were in the younger groups: 15–19 years (30.7 deaths per 100,000) and 20–24 years (31.5 deaths per 100,000).

Table 3: Suicide deaths and age-specific rates, by five-year age group and sex, 2006

Age group	Males		Females		Total	
	Number	Rate	Number	Rate	Number	Rate
5–9	0	–	0	–	0	–
10–14	2	–	4	–	6	1.9
15–19	49	30.7	12	7.8	61	19.4
20–24	46	31.5	12	8.2	58	19.9
25–29	36	28.3	19	14.2	55	21.1
30–34	36	26.4	11	7.3	47	16.4
35–39	37	24.8	16	9.8	53	17.0
40–44	37	23.7	16	9.6	53	16.4
45–49	30	20.1	8	5.1	38	12.5
50–54	31	23.9	11	8.2	42	15.9
55–59	36	30.0	10	8.1	46	19.0
60–64	13	14.1	1	–	14	7.5
65–69	8	10.6	5	–	13	8.4
70–74	11	19.1	5	–	16	13.3
75–79	1	–	3	–	4	–
80–84	4	–	2	–	6	8.1
85+	9	49.5	3	–	12	20.7
Total	386	18.5	138	6.3	524	12.2

Source: New Zealand Mortality Collection

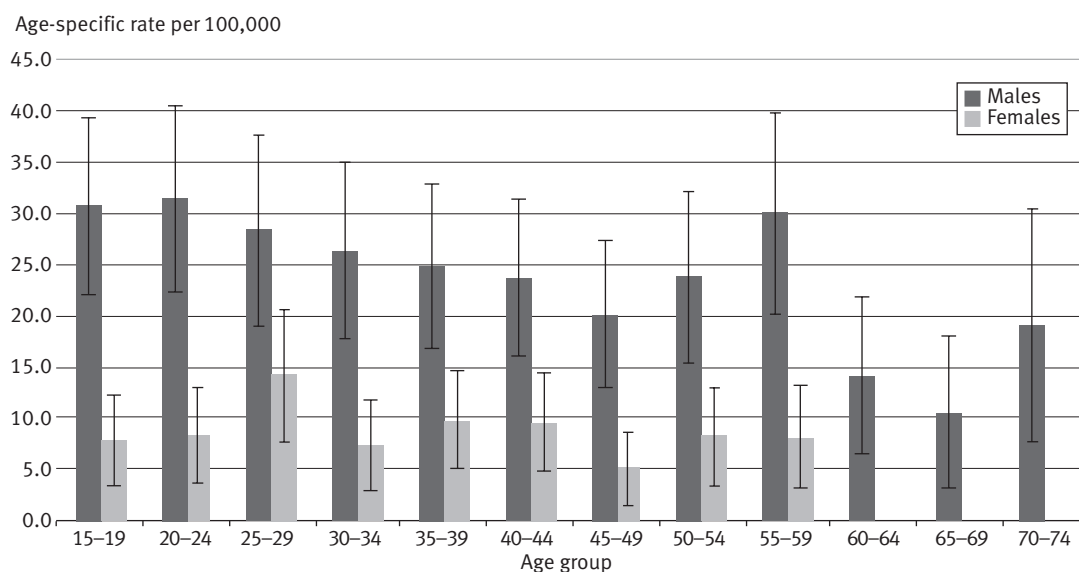
Note: A dash (–) indicates that a rate is suppressed because there were five or fewer deaths in this category.

Deaths from suicide in 2006 made up almost one-third of all deaths in both the 20–24 years age group and the 25–29 years age group, and 30.7 percent in the 15–19 years age group. In the five-year age groups from 40–44 to 65–69, cancer became more common (increasing from over one-third in the 40–44 group to nearly half in the 65–69 group. In the oldest age groups diseases of the circulatory system predominated.¹

Note that in both the youngest and oldest age groups, rates have been suppressed because the low number of suicides means that the rates are unreliable.

¹ Information in this paragraph comes from the New Zealand Mortality Collection 2006 data, not yet published.

Figure 4: Suicide age-specific death rates, by five-year age group, 2006



Source: New Zealand Mortality Collection

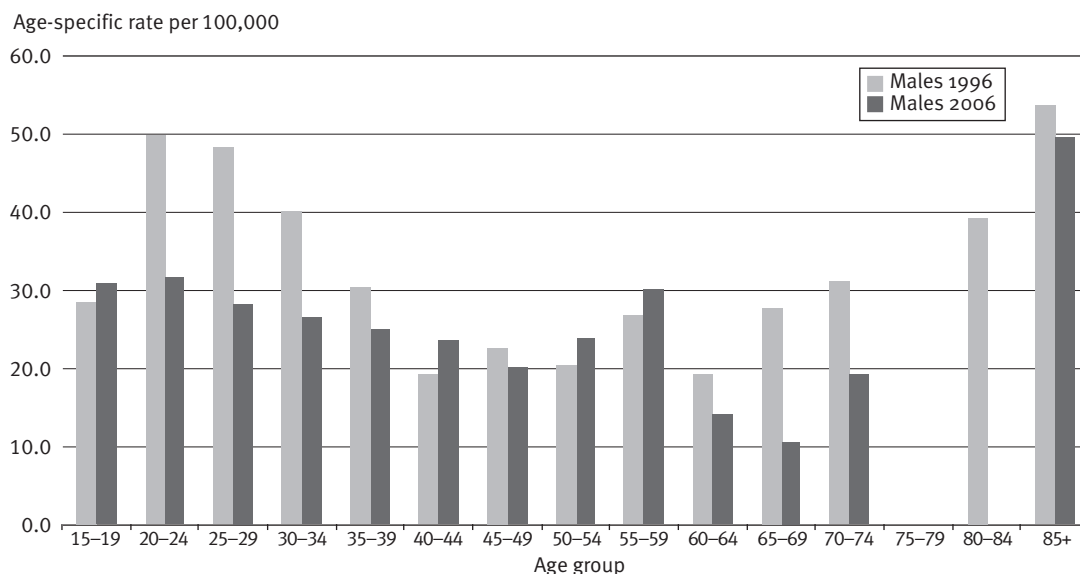
Note: Rates for younger and older age groups have been suppressed because small numbers of deaths in these categories distort the rates.

In 2006, male suicide age-specific rates exceeded female rates by four to one in the 15–19 years age group, and by 3.8 to 1 in the 20–24 years age group (compared to nearly 3 to 1 for the total population). The proportion was also higher (by 3.7 to 1) in the 55–59 years age group. In the 25–29 years age group, however, the ratio was only 2 to 1. The difference between male and female age-specific suicide rates was significant in each group shown in Figure 4 except for the 25–29 age group.

Figures 5a and 5b show a *snapshot* age-group comparison between 1996 and 2006 male and female suicide rates. Figure 5a shows the drop (by almost 40 percent) in suicide rates for males in their 20s. This decrease is statistically significant. Although there are similar drops for males aged 65–84 years, it is not realistic to draw conclusions for these groups because the number of actual suicide deaths was small, and the calculated rates are distorted by this.

For females (Figure 5b), it is noticeable that the 2006 graph has shifted approximately 10 years. For example, the peak age for female suicide deaths in 2006 was in the 25–29 years age group, and these women would have been aged 15–19 years in 1996, when that was the peak age group for that year. It would appear there is some cohort effect here, and this warrants further investigation.

Figure 5a: Age-specific suicide death rates, males, 1996 and 2006

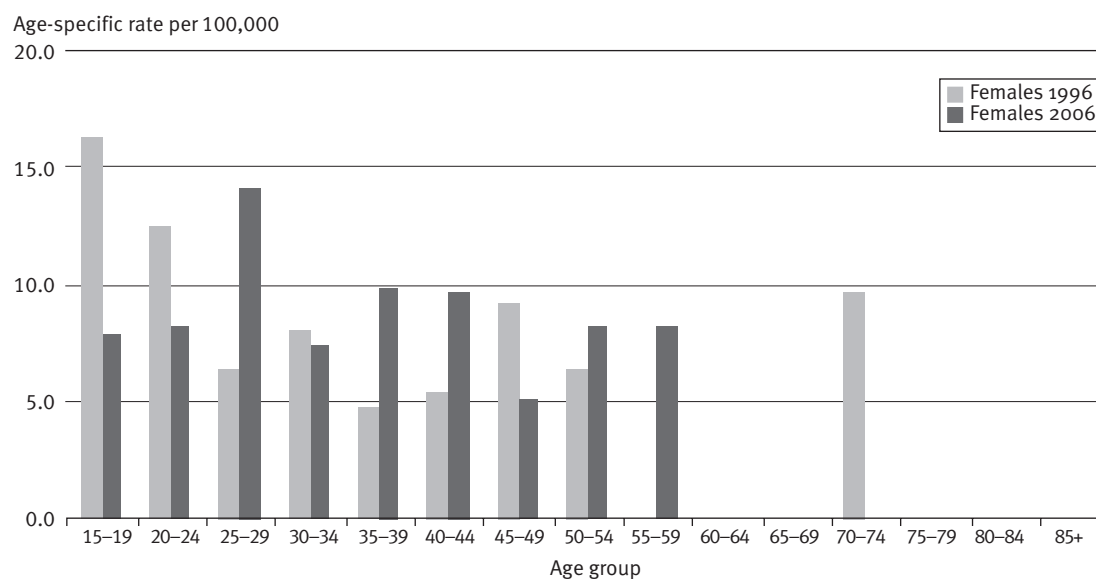


Source: New Zealand Mortality Collection

Notes:

1. Rates for some younger and older age groups are suppressed because small numbers of deaths in these categories distort the rates.
2. This graph refers to the data in Table 3 and Appendix Table A4 (1996).

Figure 5b: Age-specific suicide death rates, females, 1996 and 2006



Source: New Zealand Mortality Collection

Notes:

1. Rates for some younger and older age groups are suppressed because small numbers of deaths in these categories distort the rates.
2. This graph refers to the data in Table 3 and Appendix Table A4 (1996).

Youth

The suicide rate for youth (15–24 years age group) has varied since 1986. Although it was slightly higher in 2006, it had declined by 31.5 percent since the peak in 1995 (Table 4).

Table 4: Age-specific youth suicide rates, by sex, 1986–2006

Age group	Males		Females		Total	
	Number	Rate	Number	Rate	Number	Rate
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

Source: New Zealand Mortality Collection

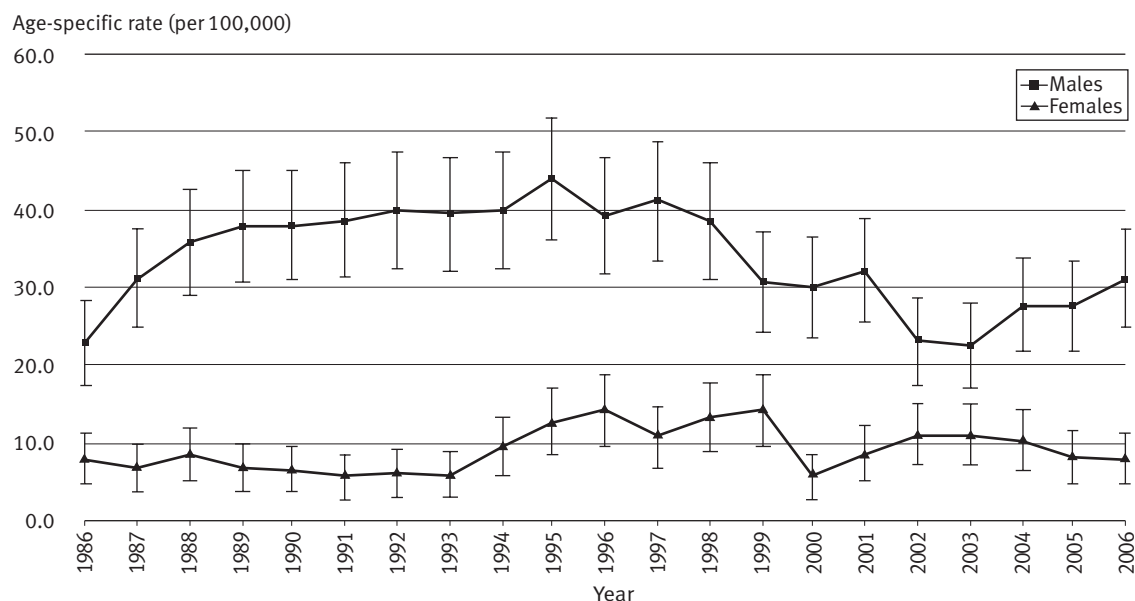
The male youth (15–24 years) age-specific suicide rate in 2006 was 3.9 times the female rate, compared to the all-age ratio of 2.9. Figure 6 shows the youth suicide rates for males and females over time. Suicide deaths accounted for about 35 percent of all male youth deaths, compared with about 22 percent for females.²

There were no statistically significant trends in either the male or female youth suicide rates since 1986, as the wide confidence intervals in Figure 6 indicate. However, some general comments can be made. The male youth rates from 2002 to 2005 were significantly lower than the peak of 1995. Although there was an increase in the rate in 2006, it is too soon to suggest another upward trend.

² These percentages are calculated from the New Zealand Mortality Collection, 2006 data, not yet published.

For females, there has been less variation over the period 1986–2006. Rates were higher between 1995 and 1999, and have been dropping slightly since 2002.

Figure 6: Age-specific youth suicide death rates, by sex, 1986–2006



Source: New Zealand Mortality Collection

Ethnicity

Table 5 shows suicide deaths by ethnicity, age and sex for 2006. Note that the 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.

Māori

One hundred and seven Māori died by suicide in 2006. The age-standardised rate of suicide for Māori was 17.8 deaths per 100,000 Māori population in 2006, similar to the rate in 2005 (17.2 deaths per 100,000 Māori population). (Note that ethnicity data can only be compared back to 1996 because of changes in the way ethnicity data were recorded prior to that year.)

Pacific peoples

There were twenty-one deaths by suicide from the Pacific peoples ethnic group in 2006 (17 males and 4 females). The age-standardised rate for Pacific peoples was 7.2 deaths per 100,000 population, compared to 6.6 deaths per 100,000 population in 1996. It is difficult to draw conclusions because the number of suicides is small and there is considerable variation over time. However, the number of total male suicide deaths from 1996 to 2006 outnumbered female suicide deaths by almost 4:1, compared to the national ratio over the same period of 3.3:1.

Asian peoples

There were fourteen suicides from the Asian peoples ethnic group in 2006 (five males and nine females). The age-standardised rate for Asian peoples was 3.1 deaths per 100,000 population, compared to 5.1 deaths per 100,000 population in 1996. Again, it is difficult to draw conclusions: not only was the number of suicides small, but the population of Asian peoples doubled in that period. However, it may be worth noting that over the period 1996–2006 the ratio of male to

female suicides for Asian peoples was 3:2, compared to the national average over the same period of 3.3:1, indicating a much higher proportion of female suicides among Asian peoples in New Zealand.

Table 5: Suicide deaths by ethnicity, age and sex, 2006

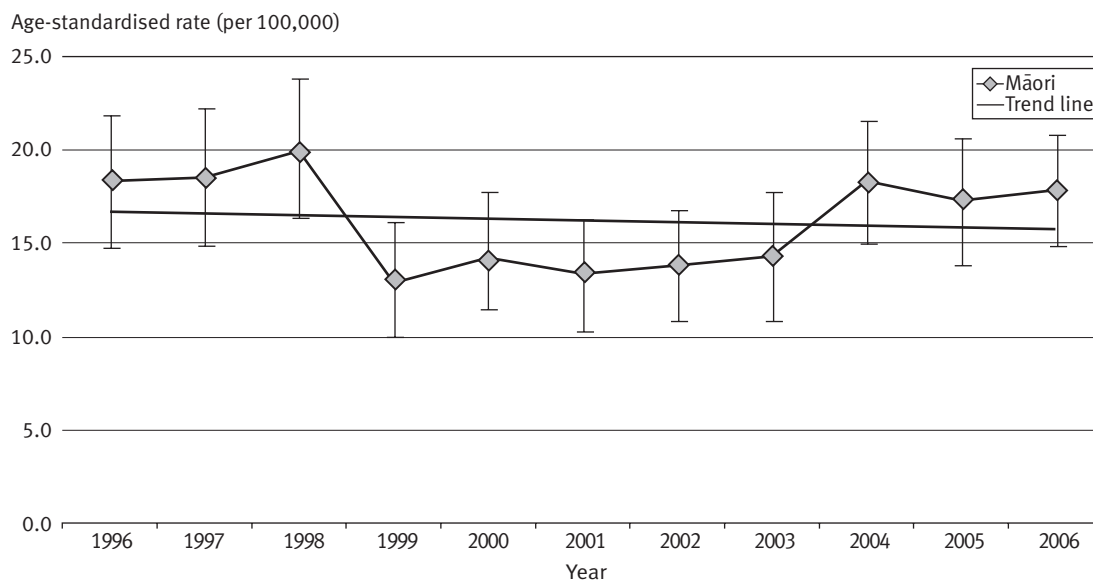
Ethnicity	Sex	Total	Age group (years)															
			10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Māori	Total	107	4	23	14	14	20	13	6	4	3	3	2	0	0	1	0	0
	Males	74	0	18	11	6	15	9	5	4	2	2	2	0	0	0	0	0
	Females	33	4	5	3	8	5	4	1	0	1	1	0	0	0	1	0	0
Pacific	Total	21	0	5	4	5	3	1	3	0	0	0	0	0	0	0	0	0
	Males	17	0	4	3	5	2	1	2	0	0	0	0	0	0	0	0	0
	Females	4	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Asian	Total	14	0	2	1	2	0	1	2	1	0	3	0	1	1	0	0	0
	Males	5	0	2	0	1	0	0	0	1	0	0	0	1	0	0	0	0
	Females	9	0	0	1	1	0	1	2	0	0	3	0	0	1	0	0	0
Other	Total	382	2	31	39	34	24	38	42	33	39	40	12	12	15	3	6	12
	Males	290	2	25	32	24	19	27	30	25	29	34	11	7	11	1	4	9
	Females	92	0	6	7	10	5	11	12	8	10	6	1	5	4	2	2	3
Total	Total	524	6	61	58	55	47	53	53	38	42	46	14	13	16	4	6	12
	Males	386	2	49	46	36	36	37	37	30	31	36	13	8	11	1	4	9
	Females	138	4	12	12	19	11	16	16	8	11	10	1	5	5	3	2	3

Source: New Zealand Mortality Collection

Māori and non-Māori comparisons

In 2006 the age-standardised suicide death rate for Māori (17.8 deaths per 100,000 Māori population) was significantly higher than that for non-Māori (11.0 deaths per 100,000 non-Māori population). Figure 7b indicates that non-Māori suicide death rates are trending downwards over time, with a high R² value of 0.79. Māori rates (Figure 7a) showed no obvious trend, although the small numbers of Māori suicides mean it is harder to ascertain trends.

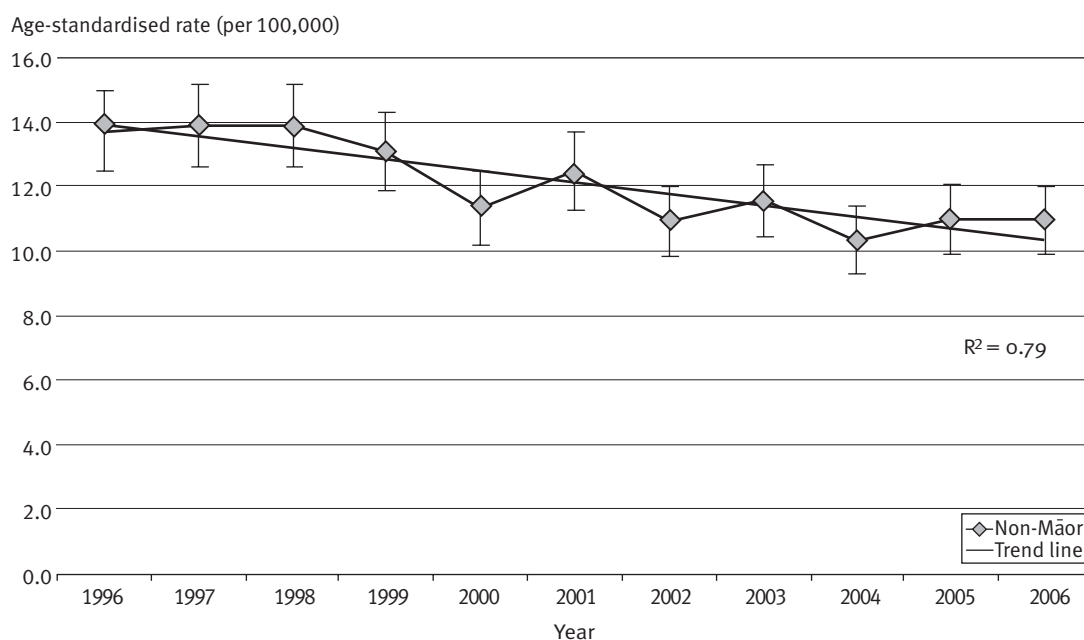
Figure 7a: Māori suicide rates, 1996–2006



Source: New Zealand Mortality Collection

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

Figure 7b: Non-Māori suicide rates, 1996–2006



Source: New Zealand Mortality Collection

Notes:

1. R^2 is a measure of the goodness of fit of the data to the trend line. An R^2 value of 0.788 indicates that 78.8 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 is the age-standardised rate per 100,000 population, standardised to the World Health Organization (WHO) standard world population.

A summary of suicide numbers and age-standardised rates for Māori and non-Māori, by sex, is shown in Table 6. The non-Māori rate in 2006 (11.0 per 100,000 population) represents a decrease of 20.9 percent from the peak 1997 rate (13.9 per 100,000 population), and the Māori rate (17.8 per 100,000 population) was a decrease of 10.9 percent from the peak of 20.0 per 100,000 population in 1998.

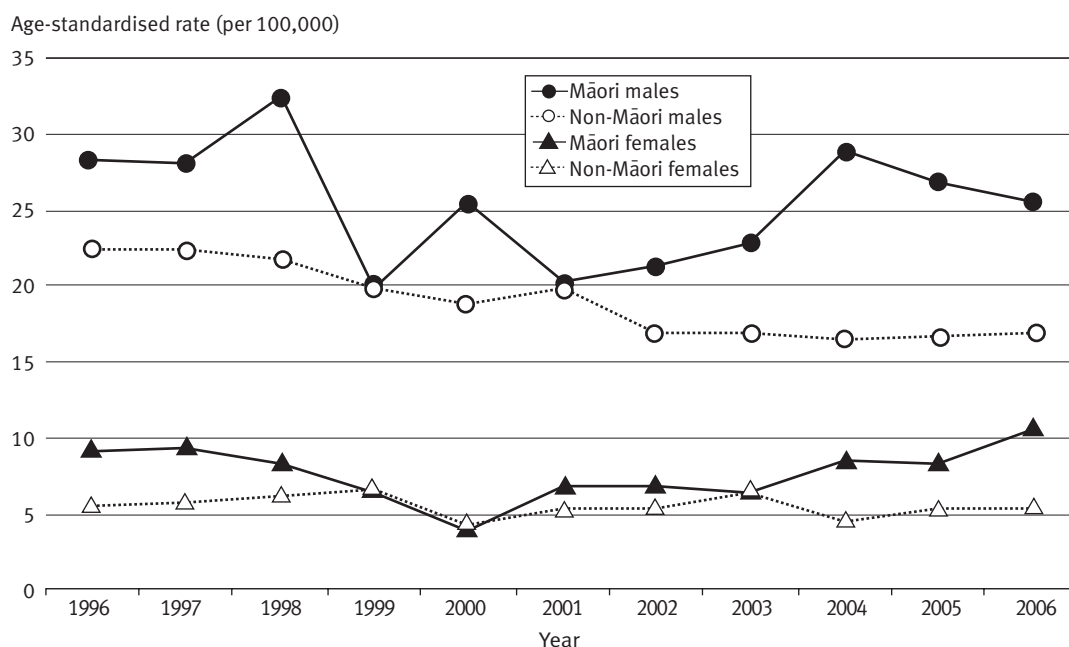
Table 6: Suicide deaths and age-standardised rates for Māori and non-Māori, by sex, 1996–2006

Year	Number of deaths						Age-standardised rate					
	Māori			Non-Māori			Māori			Non-Māori		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
1996	71	24	95	357	88	445	28.3	9.2	18.3	22.5	5.5	13.7
1997	77	26	103	363	95	458	28.0	9.4	18.5	22.4	5.8	13.9
1998	87	25	112	358	107	465	32.5	8.3	20.0	21.8	6.2	13.9
1999	58	20	78	327	111	438	19.9	6.3	12.9	19.9	6.6	13.1
2000	69	11	80	306	72	378	25.5	3.8	14.2	18.8	4.2	11.4
2001	57	22	79	331	97	428	20.3	6.7	13.3	20.0	5.4	12.5
2002	59	21	80	294	92	386	21.2	6.8	13.8	17.0	5.2	10.9
2003	67	20	87	309	121	430	22.7	6.4	14.3	17.0	6.4	11.6
2004	82	27	109	297	82	379	29.0	8.4	18.3	16.5	4.5	10.4
2005	78	26	104	302	105	407	26.9	8.3	17.2	16.8	5.4	11.0
2006	74	33	107	312	105	417	25.5	10.7	17.8	16.9	5.3	11.0

Source: New Zealand Mortality Collection

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

Figure 8: Māori and non-Māori suicide death rates, by sex, 1996–2006



Source: New Zealand Mortality Collection

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

The age-standardised rate of suicide for Māori males was 25.5 deaths per 100,000 population in 2006, compared with the rate for non-Māori males of 16.9 per 100,000 population, which was significantly lower. The age-standardised rate of suicide for Māori females was 10.7 deaths per 100,000 population in 2006, more than twice the rate for non-Māori females (5.3 per 100,000 population).

Deprivation

Deprivation has been associated with various health outcomes, and from the social inequalities literature it is evident that those who are most deprived generally experience poorer health (White et al 2008). Consequently, suicide mortality and hospitalisation rates for intentional self-harm are presented here by deprivation quintile according to the New Zealand Deprivation Index 2001 (NZDep2001) (Salmond and Crampton 2002).

In 2006 the least deprived areas had an age-standardised suicide rate of 8.7 per 100,000 population, compared with 17.4 per 100,000 population in the most deprived areas (Table 7).

Table 7: Suicide numbers and age-standardised rates, by NZDep2001 quintile and sex, 2006

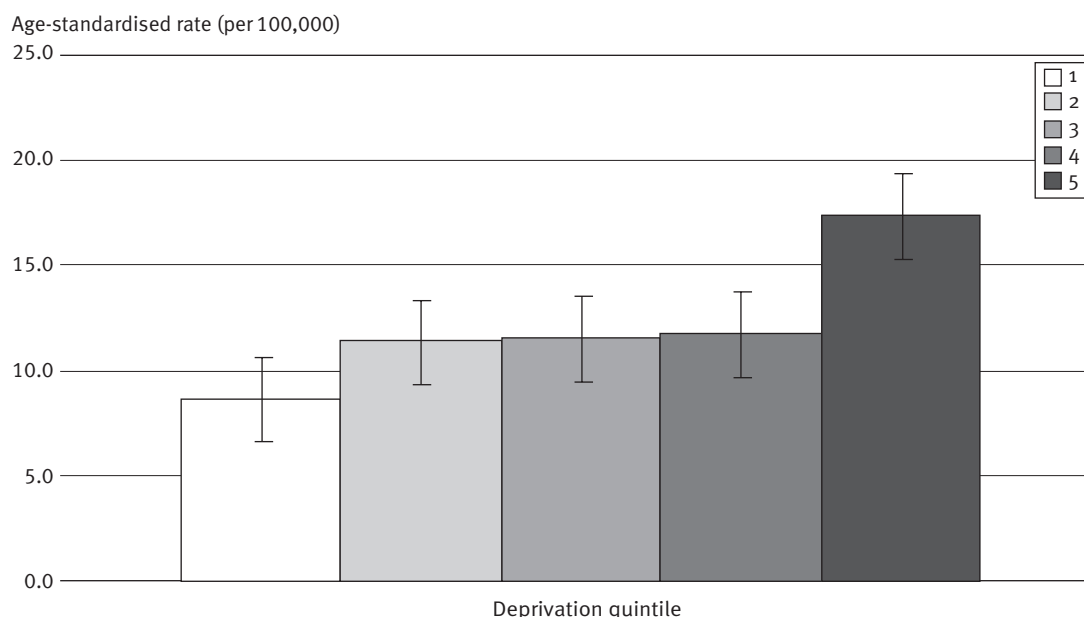
Deprivation quintile		Number of deaths	ASR
1 (least deprived)	Total	70	8.7
	Males	49	12.3
	Females	21	5.2
2	Total	99	11.4
	Males	74	17.5
	Females	25	5.6
3	Total	104	11.6
	Males	73	16.6
	Females	31	6.8
4	Total	104	11.8
	Males	78	18.1
	Females	26	5.8
5 (most deprived)	Total	143	17.4
	Males	109	27.2
	Females	34	8.2

Source: New Zealand Mortality Collection

Notes:

1. The New Zealand Deprivation Index uses domicile codes to assign disparity weights in New Zealand. It is recognised that deprived individuals are more likely to suffer poor health outcomes than are less deprived individuals (White et al 2008). See the *Definitions* section of this publication for further information.
2. The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization (WHO) standard world population.

Figure 9: Suicide death rates, by NZDep2001 quintile, 2006



Source: New Zealand Mortality Collection

Notes:

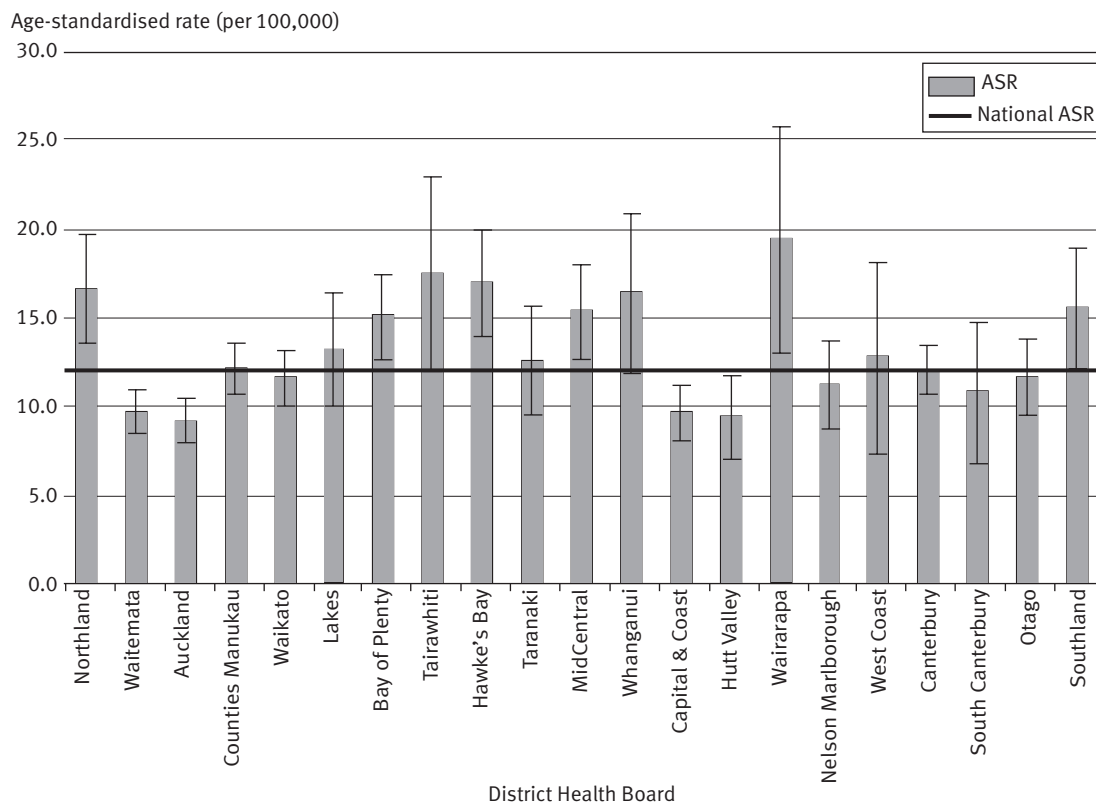
1. The New Zealand Deprivation Index provides a summary deprivation score for small areas in New Zealand. In this publication the scores are from 1 to 5, and are a weighted sum of nine characteristics of deprivation. It is recognised that deprived individuals are more likely to suffer poor health outcomes than are less deprived individuals (White et al 2008: 7). See the *Definitions* section of this publication for further information.
2. The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization (WHO) standard world population.

It is clear from Figure 9 that there is a significantly higher suicide rate among the most deprived (quintile 5) in the New Zealand population compared to the other quintiles. Although the lowest rate is for quintile 1, quintiles 1 to 4 do not differ significantly from each other.

District Health Boards

In this section, data for District Health Boards have been aggregated over five years 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 population for 2004, the mid-point of the period, and standardised to the World Health Organization population tables. The national figure is 12.0 suicides per 100,000 population averaged over the five years, and this is shown by the horizontal line in Figure 10. Confidence intervals are also provided to aid interpretation.

Figure 10: Suicide death rates, by District Health Board, 2002–2006



Source: New Zealand Mortality Collection

Notes:

1. The rate (ASR) shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization (WHO) standard world population.
2. This graph is based on information in Appendix Table A5.

Six District Health Board areas (Northland, Bay of Plenty, Hawke’s Bay, MidCentral, Wairarapa and Southland) had significantly higher average suicide rates than the New Zealand average for the five years 2002–2006 (12.0 deaths per 100,000 population per year). Tairāwhiti and Whanganui appear in Figure 10 to be significantly higher, but in fact the lower confidence interval band is slightly lower than 12.0.

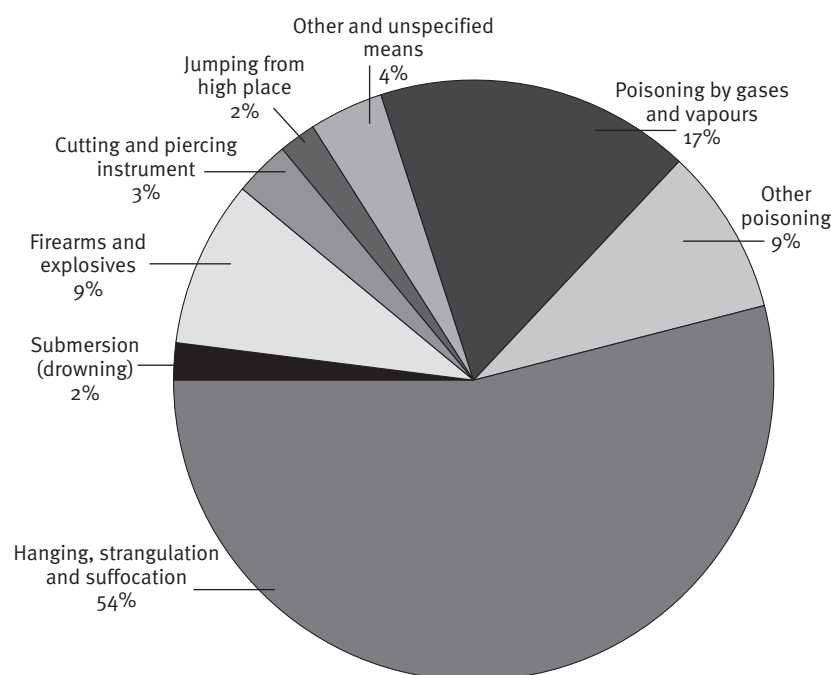
Waitemata, Auckland, Capital and Coast, and Hutt Valley District Health Board areas had significantly lower average suicide death rates than the country as a whole over the period 2002–2006.

Methods

In 2006 the most common suicide method was hanging, strangulation and suffocation, as coded by the *International Classification of Diseases Tenth Revision (ICD-10)*. This method was used in more than half (54 percent) of all suicide deaths. Poisoning by gases or vapours was the method used in 17 percent of suicides, while other poisonings and firearms each made up 9 percent. Figure 11 shows the most common methods of suicide in 2006.

Just over half of both males and females used hanging, strangulation and suffocation to take their lives. The next most common method used by males was poisoning by gases or vapours (17 percent), and 11 percent of males used firearms. For females, the second most common method was poisoning (14 percent by gases and vapours and 18 percent by other means).

Figure 11: Methods used for suicide deaths, 2006



Source: New Zealand Mortality Collection

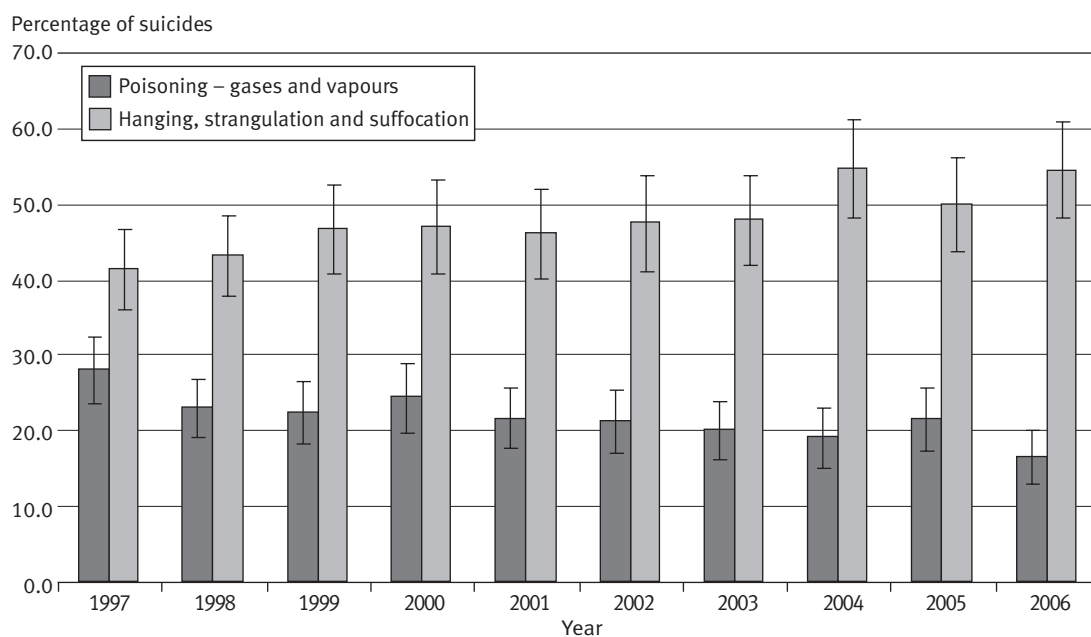
Over the last decade there has been a significant increase in the proportion of suicide deaths by hanging, strangulation and suffocation (up from 41 percent in 1997 to 54 percent in 2006). Over the same period suicides from poisoning by gases and vapours have significantly decreased, from 28 percent of suicide deaths in 1997 to 17 percent in 2006. Table 8 shows the suicide methods used over the 10 years, and Figure 12 illustrates the change over time in the use of hanging, strangulation and suffocation, and poisoning by gases and vapours.

Table 8: Means of suicide, 1997–2006

Method	1997		1998		1999		2000		2001		2002		2003		2004		2005		2006	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Poisoning—solids and liquids	58	10.3	64	11.1	52	10.1	37	8.1	54	10.7	47	10.1	58	11.2	47	9.6	50	9.8	49	9.4
Poisoning—gases and vapours	157	28.0	133	23.1	116	22.5	112	24.5	110	21.7	99	21.2	104	20.1	93	19.1	110	21.5	87	16.6
Hanging, strangulation and suffocation	232	41.4	249	43.2	241	46.7	215	46.9	234	46.2	221	47.4	247	47.8	267	54.7	255	49.9	285	54.4
Submersion (drowning)	17	3.0	10	1.7	16	3.1	15	3.3	7	1.4	12	2.6	14	2.7	12	2.5	13	2.5	9	1.7
Firearms and explosives	56	10.0	72	12.5	47	9.1	36	7.9	51	10.1	49	10.5	41	7.9	38	7.8	44	8.6	48	9.2
Other means	41	7.3	49	8.5	44	8.5	43	9.4	51	10.1	38	8.2	53	10.3	31	6.4	39	7.6	46	8.8
Total	561	100.0	577	100.0	516	100.0	458	100.0	507	100.0	466	100.0	517	100.0	488	100.0	511	100.0	524	100.0

Source: New Zealand Mortality Collection

Figure 12: Suicide, by most common methods, 1997–2006



International Comparisons

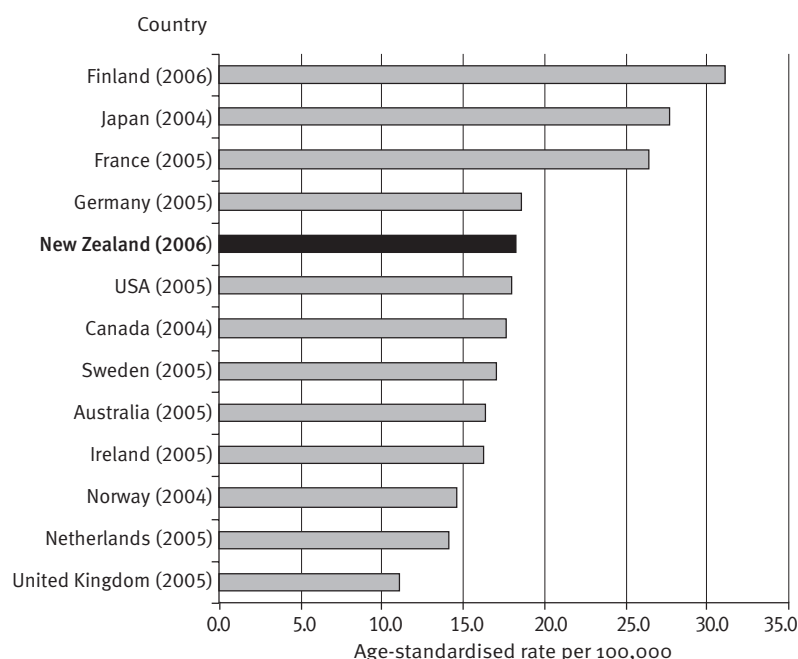
This section compares New Zealand suicide rates with those in selected countries in the Organisation for Economic Co-operation and Development (OECD). These countries have been selected because they are considered to have reliable data collections, or they are countries most often used for comparison with New Zealand health statistics. When all countries that submit data to the World Health Organization are considered, New Zealand ranks in the middle.

A cautious approach is recommended when comparing international suicide statistics, because many factors affect the recording and classification of suicide in different countries, and these factors may result in undercounts. Potential factors include the level of proof required for a verdict, stigma, religion, social class, occupation 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 intent in others.

All ages

When ranked alongside the rates for the other selected OECD countries (Figures 13 and 14) the New Zealand 2006 suicide rates for males and females are towards the middle of the group. The male rate sits in a group with similar rates, but is lower than Finland (2006), Japan (2004) and France (2005). The New Zealand female rate is broadly similar to the rates in many other countries, but it is lower than that in Japan (2004), France (2005), Finland (2006) and Sweden (2005). Note that these selected OECD rates all have higher male than female suicide rates, like New Zealand.

Figure 13: Age-standardised suicide rates for selected OECD countries, males



Source: World Health Organization: http://www.who.int/mental_health/prevention/suicide/country_reports/en/ (accessed 1/07/08).

USA update: <http://www.suicidology.org/displaycommon.cfm?an=1&subarticlenbr=21> (accessed 29/09/08).

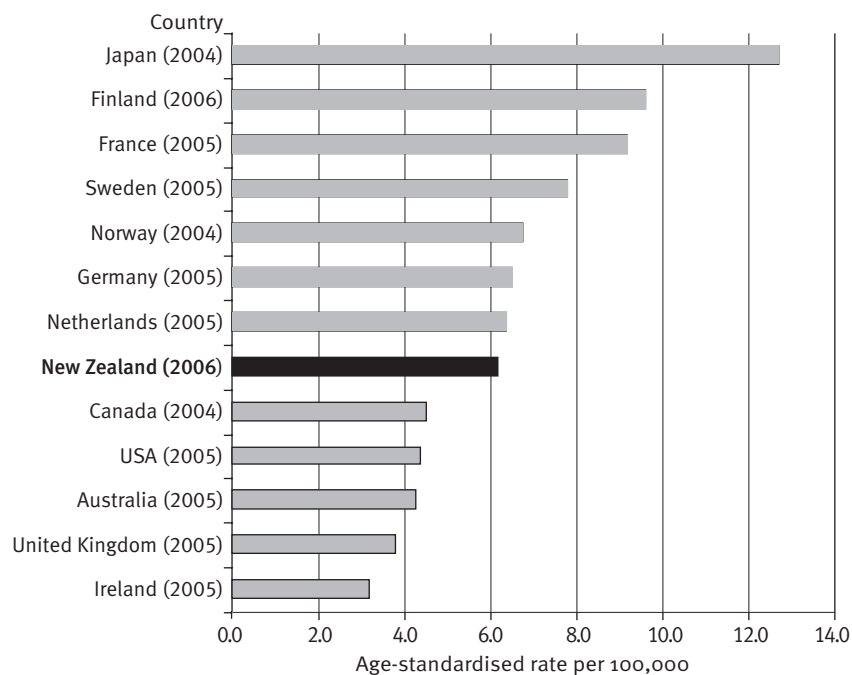
Australia update: Australian Bureau of Statistics: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3309.02005?OpenDocument> (accessed 4/8/08).

France, Finland update: www.who.int/entity/mental_health/media/fran.pdf (accessed 29/09/09).

UK update: *Mortality Statistics: Cause: Series DH2*, Number 32. Office for National Statistics. <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=618> (accessed 29/09/08).

Notes: Rates are age-standardised to the World Health Organization standard world population. The New Zealand rate here is different to that presented elsewhere in this publication because it has been recalculated in the same manner as the calculations for the other countries, using data available on the World Health Organization website.

Figure 14: Age-standardised suicide rates for selected OECD countries, females



Source: World Health Organization: http://www.who.int/mental_health/prevention/suicide/country_reports/en/ (accessed 1/07/08).

USA update: <http://www.suicidology.org/displaycommon.cfm?an=1&subarticlenbr=21> (accessed 29/09/08).

Australia update: Australian Bureau of Statistics: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3309.02005?OpenDocument> (accessed 4/8/08).

France, Finland update: www.who.int/entity/mental_health/media/fran.pdf (accessed 29/09/09).

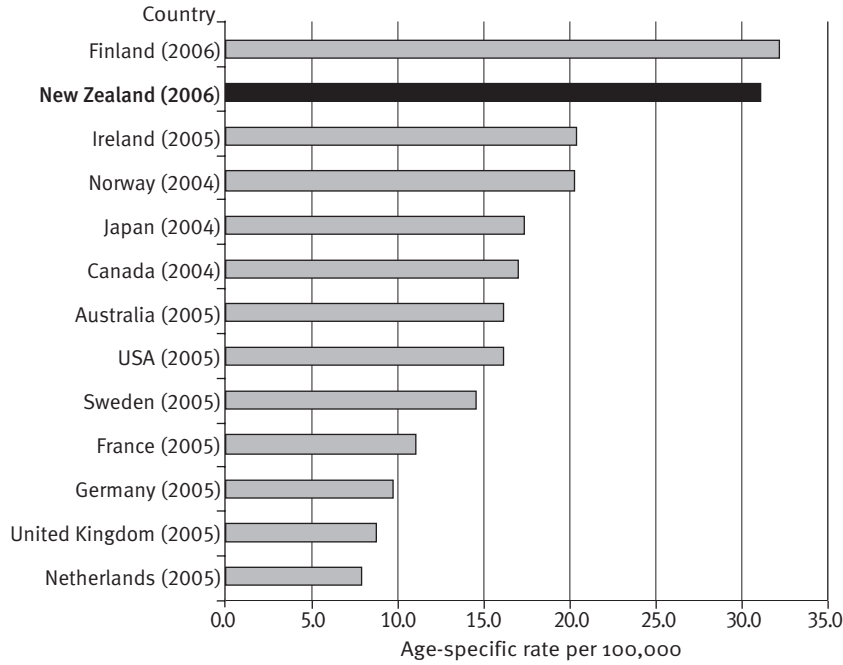
UK update: *Mortality Statistics: Cause: Series DH2*, Number 32. Office for National Statistics. <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=618> (accessed 29/09/08)

Notes: Rates are age-standardised to the World Health Organization standard world population. The New Zealand rate here is different to that presented elsewhere in this publication because it has been recalculated in the same manner as the calculations for the other countries, using data available on the World Health Organization website.

Youth (15–24-year-olds)

When ranked alongside the other countries in Figure 15, the New Zealand (2006) suicide rate for males aged 15–24 years is higher than that in any other selected country except Finland (2006).

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



Source: World Health Organization:

http://www.who.int/mental_health/prevention/suicide/country_reports/en/ (accessed 1/07/08).

USA update: <http://www.suicidology.org/displaycommon.cfm?an=1&subarticlenbr=21> (accessed 29/09/08).

Australia update: Australian Bureau of Statistics: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3309.02005?OpenDocument> (accessed 4/8/08).

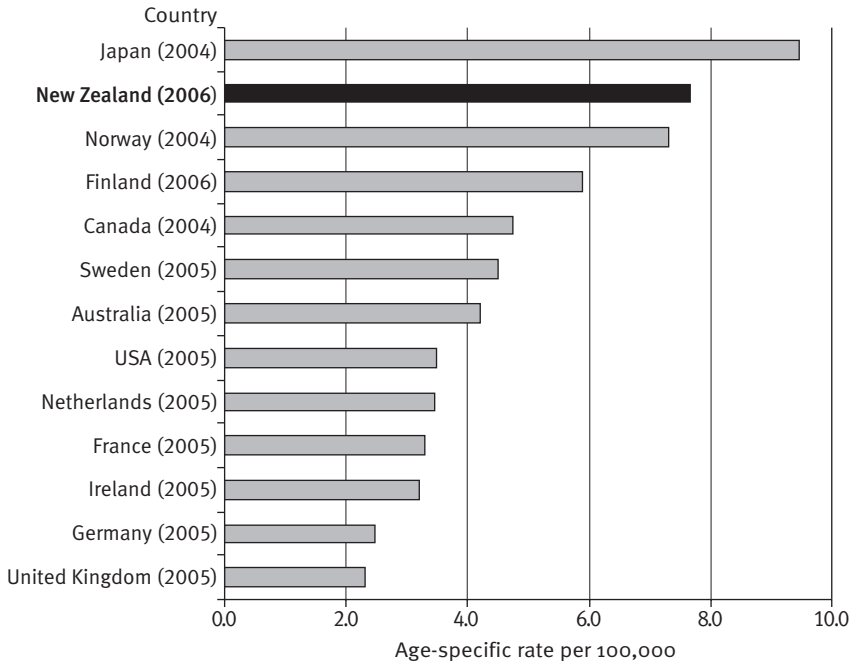
France, Finland update: www.who.int/entity/mental_health/media/fran.pdf (accessed 29/09/09).

UK update: *Mortality Statistics: Cause: Series DH2*, Number 32. Office for National Statistics.

<http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=618> (accessed 29/09/08)

When ranked alongside the other countries in Figure 16, the New Zealand (2006) suicide rate for females aged 15–24 years is lower than that in Japan (2004), but higher than those in the other selected OECD countries.

Figure 16: Age-specific suicide rates for selected OECD countries, females, 15–24 years



Source: World Health Organization:
http://www.who.int/mental_health/prevention/suicide/country_reports/en/ (accessed 1/07/08).
 USA update: <http://www.suicidology.org/displaycommon.cfm?an=1&subarticlenbr=21> (accessed 29/09/08).
 Australia update: Australian Bureau of Statistics: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3309.02005?OpenDocument> (accessed 4/8/08).
 France, Finland update: www.who.int/entity/mental_health/media/fran.pdf (accessed 29/09/09).
 UK update: *Mortality Statistics: Cause: Series DH2*, Number 32. Office for National Statistics.
<http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=618> (accessed 29/09/08)

Hospitalisation for Intentional Self-harm in 2006

The data

This section deals with admissions to hospital for intentional self-harm, focusing on 2006. Data have also been extracted from 1996 onwards for comparison of trends. Please note that the data used in this publication have been filtered in a different way to the data used in previous Ministry of Health publications and therefore direct comparisons cannot be drawn between them.

When considering all the information in this section of the publication, it is extremely important to note that a large subset of the data has been removed, for the following reasons. District Health Boards have different admission practices, which result in differences in the reporting of data. Therefore, to allow meaningful comparison, certain events have been removed. The data in Table 9 below shows admissions that have been excluded from the main data between 1996 and 2006. The excluded data represent any admission for a patient who was admitted via the emergency department but had a length of stay of less than 48 hours.

Table 9 shows the differences in reporting of events that have occurred within single District Health Boards since 1996. By removing the data that are not consistent, the remaining data can be used to make meaningful comparisons across years and District Health Boards.

Table 9: Numbers of short-stay emergency department admissions for intentional self-harm, 1996–2006

District Health Board	Year of discharge											
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Northland					8	18	35	37	43	56	71	66
Waitemata		9	6	104	204	305	441	370	316	298	360	407
Auckland	151	126	91	62	241	376	385	373	432	410	475	453
Counties Manukau	119	94	133	173	248	308	365	369	373	445	430	461
Waikato	8	9	20	23	56	128	165	184	199	224	242	71
Lakes		2	1	2	4	13	35	39	56	57	52	53
Bay of Plenty	1			1	12	1		13	12	5	22	69
Tairāwhiti				3	2							
Taranaki	3	3	2	1	4	4	11	22	7	1		
Hawke's Bay		2			1						43	67
MidCentral									19	113	131	180
Whanganui				2	1	3	20	12	13	11	16	18
Capital and Coast	6	5	4	4		2	1	1	3	2	7	1
Wairarapa	4	2										
Nelson Marlborough	6	10	3	2	5	2						
West Coast	14	10	6	8	9	14	20	14	8	23	3	4
Canterbury	13	115	243	308	337	418	448	500	405	436	503	424
South Canterbury		1							1			
Otago	3	10	15	12	64	83	82	104	151	135	121	132
Southland	2	4	9	3	8	1		1	1	1	18	18
South Island 'Other'				4	7	11	4	8	14	12	4	2
Total New Zealand	330	402	533	712	1211	1687	2012	2047	2053	2229	2498	2426

Source: New Zealand National Minimum Dataset

Note: Short stay = 0 or 1 day; see 'Technical Notes' for more detail.

By removing inconsistent data in this way, any trends that are found within the data are much more likely to be due to changes in the population rather than changes in administrative procedures within or across District Health Boards. The data set used for this section of the report is therefore concentrating mostly on admissions for stays of two days or more, because anyone who has had a short stay (admitted via the emergency department) has been removed from the analysis.

It is also important to note that any readmissions for a self-harm incident within two days of a previous admission for self-harm have not been counted in this data. It is common for patients to be transferred between hospitals after a self-harm event, and in many cases the transfer was being counted as an additional admission. This additional admission was usually occurring within two days of the previous discharge, and artificially inflating the numbers of admissions. Therefore, to provide consistency, and to help give a more accurate picture of changes within the population (rather than changes in administrative procedures), all readmissions for self-harm within two days of a previous admission for self-harm have been removed.

The Ministry of Health is addressing these inconsistencies and is putting plans in place to ensure that all District Health Boards manage and report emergency department cases and transfers in a consistent manner.

In summary, the data used within this section of the report has been filtered to allow the best possible chance to observe real trends relating to changes in self-harm behaviour within the New Zealand population.

Overview

Taking into account the fact that a subset of the data has been removed (as explained above), the total number of hospitalisations for intentional self-harm has shown a steady decrease since 1996.

Table 10 shows a decline from 3030 hospitalisations in 1996 to 2868 hospitalisations in 2006.

When expressed as an age-standardised rate per 100,000 population, there has also been a significant downward trend, from a rate of 85.8 in 1996 to a rate of 69.7 in 2006, which equates to a drop of 18.8 percent (see Figure 17).

Table 10: Numbers and rates of hospitalisations for intentional self-harm, 1996–2006

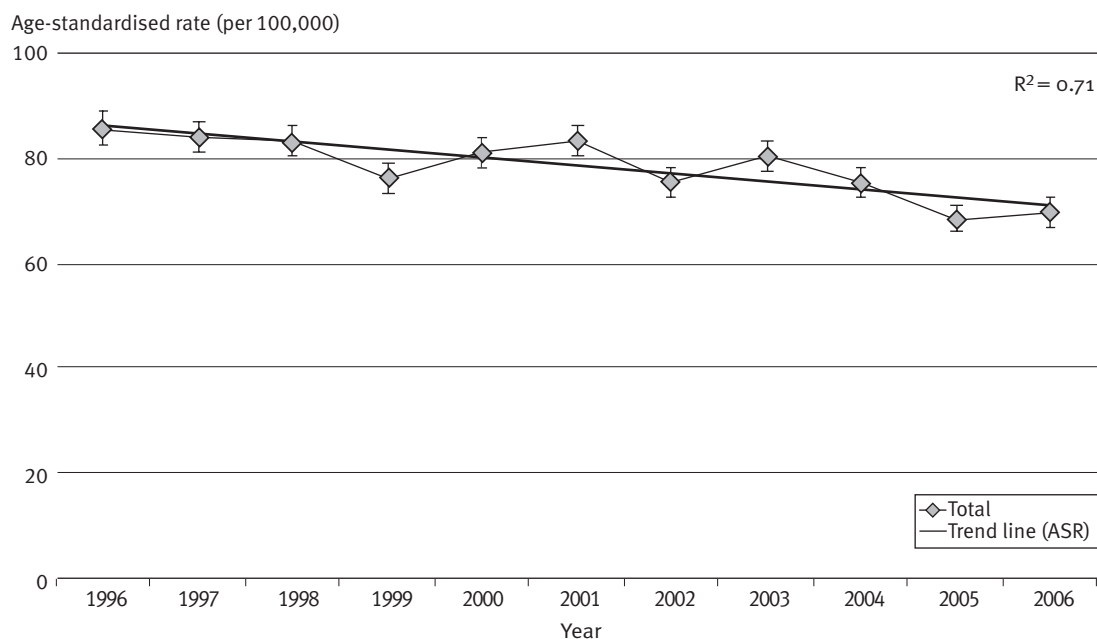
Year	Total	
	Number	Rate
1996	3030	85.8
1997	3074	83.8
1998	3103	83.6
1999	2836	76.3
2000	3017	81.0
2001	3136	83.3
2002	2902	75.3
2003	3142	80.3
2004	3000	75.5
2005	2743	68.4
2006	2868	69.7

Source: New Zealand National Minimum Dataset

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to World Health Organization population tables.

This significant difference could be due to a real change in behaviour within the population, but it is also very likely that the trend could be due to changes in medical practice and medical administration over the last decade. For example, the general move towards community-based care will almost certainly be reducing the average lengths of stay for mental health patients, some of whom will have been admitted for intentional self-harm.

Figure 17: Hospitalisation rates for intentional self-harm, 1996–2006



Source: New Zealand National Minimum Dataset

Notes:

1. The rate (ASR) shown is the age-standardised rate per 100,000 population, standardised to World Health Organization population tables.
2. R^2 is a measure of the goodness of fit of the data to the trend line. An R^2 value of 0.71 indicates that 71 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 self-harm than males (Berry and Harrison 2006). In 2006 there were 1878 hospitalisations for females compared to 990 for males. Expressed as an age-standardised rate, this represents 90.3 hospitalisations per 100,000 females and 48.8 hospitalisations per 100,000 males (see Figure 18).

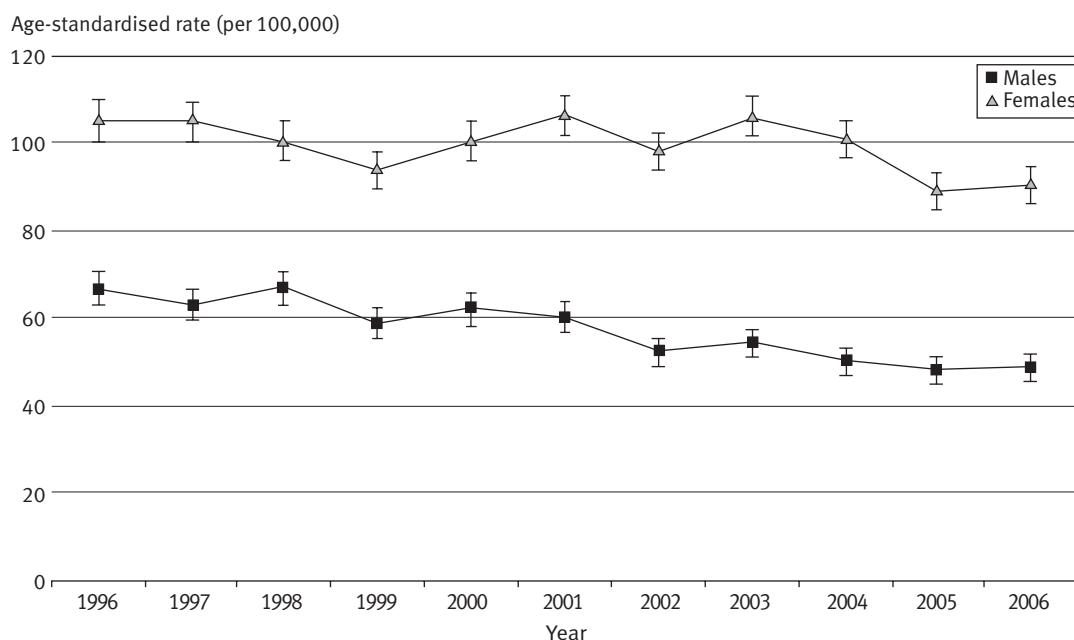
Table 11: Male and female hospitalisations for intentional self-harm, numbers and rates, 1996–2006

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	1087	59.1	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	990	48.8	1878	90.3	1.8

Source: New Zealand National Minimum Dataset

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

Figure 18: Male and female hospitalisation rates for intentional self-harm, 1996–2006



Source: New Zealand National Minimum Dataset

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

There has been a significant decrease of nearly 14 percent (see Figure 18) in the rate of female hospitalisations between 1996 and 2006. Since 1996 the rate of males hospitalised for intentional self-harm has reduced from 66.8 to 48.8 per 100,000 male population, a decrease of nearly 27 percent. The confidence intervals shown in Figure 18 confirm that this reduction is significant.

As well as numbers and rates, Table 11 shows the female to male sex rate ratio for hospitalisations for intentional self-harm. In 1996 the ratio was 1.6, which had risen to 1.8 in 2006.

In summary, the numbers and rates of males and females being hospitalised for intentional self-harm events have fallen significantly since 1996. In addition, the number and rate of male hospitalisations have fallen more sharply than for females.

Age

In 2006 the age group with the highest number of hospitalisations and the highest age-specific rate was 15–19-year-olds (see Table 12).

Table 12: Numbers and rates of male and female hospitalisations for intentional self-harm, by five-year age group, 2006

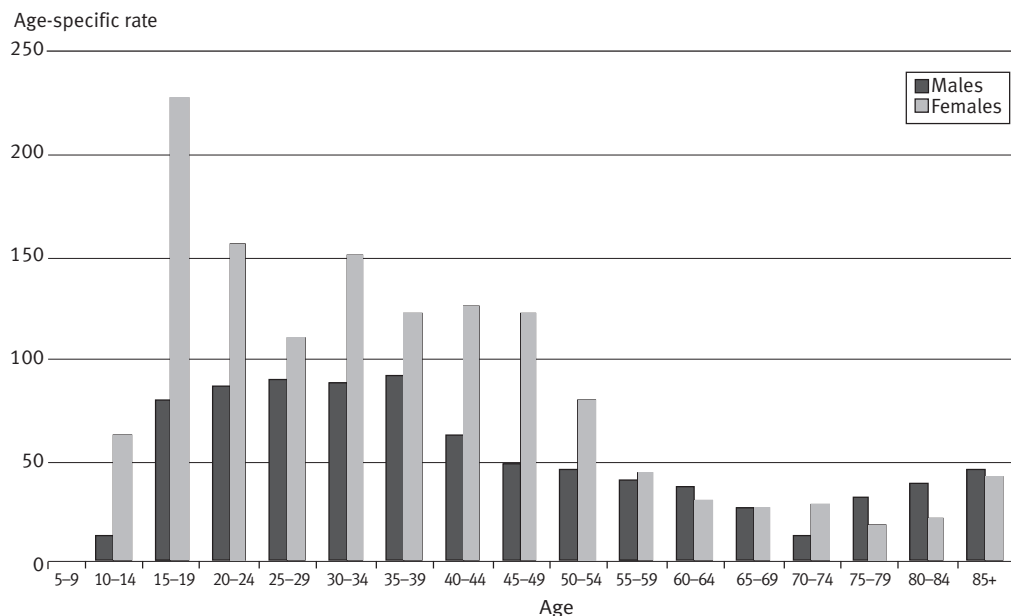
Age-group (years)	Males		Females		Total	
	Number	Rate	Number	Rate	Number	Rate
5–9	0	–	2	–	2	–
10–14	17	10.7	92	60.9	109	35.1
15–19	125	78.4	348	225.6	473	150.8
20–24	122	83.5	225	154.6	347	119.0
25–29	111	87.3	144	107.5	255	97.7
30–34	118	86.5	226	150.8	344	120.2
35–39	133	89.1	196	119.9	329	105.2
40–44	95	60.9	205	123.0	300	93.0
45–49	74	49.6	187	119.8	261	85.5
50–54	57	43.9	103	77.0	160	60.7
55–59	47	39.2	52	42.4	99	40.8
60–64	32	34.7	27	28.4	59	31.5
65–69	19	25.1	20	25.0	39	25.1
70–74	7	12.2	17	27.1	24	20.0
75–79	14	29.4	9	16.1	23	22.2
80–84	11	36.6	9	20.5	20	27.0
85+	8	44.0	16	40.1	24	41.3
Total	990	48.8	1878	90.3	2868	69.7

Source: New Zealand National Minimum Dataset

Note: A dash (–) indicates that the rate has been suppressed because there are five or fewer hospitalisations in this category

For females, the 15–19 years age group had the greatest number and highest rate of intentional self-harm hospitalisations. For males, although the highest rate was seen between the ages of 35 and 39, there was very little difference between age groups within the 15–39 years age range. After the age of 55 the differences between the male and female rates were much less marked. This relationship can be seen clearly in Figure 19.

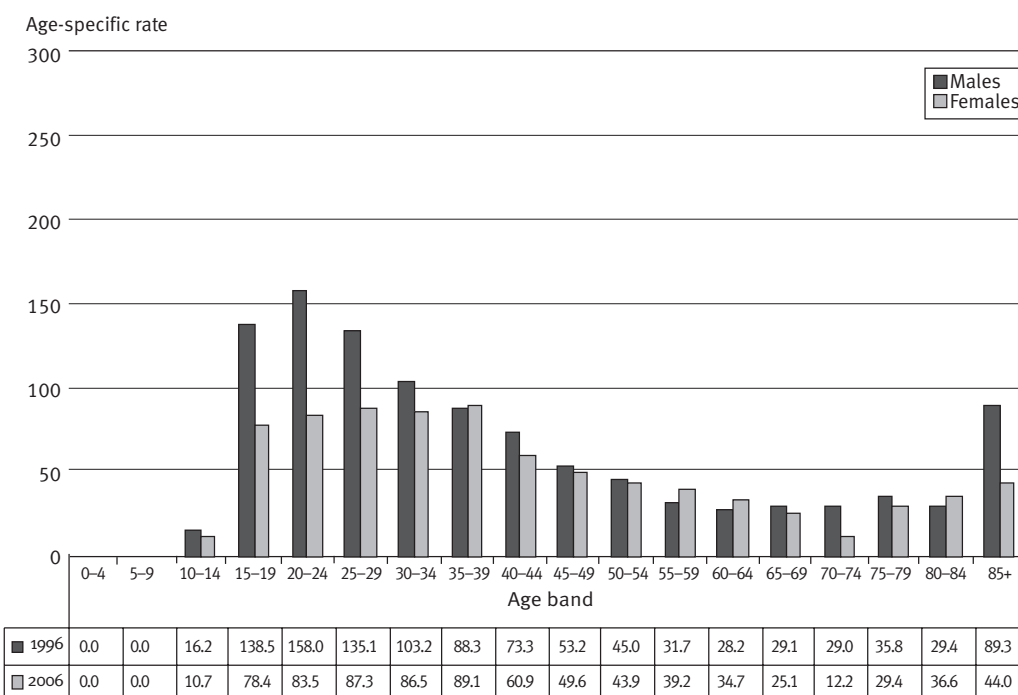
Figure 19: Hospitalisation rates for intentional self harm, by age group and sex, 2006



Source: New Zealand National Minimum Dataset

Comparing age-specific rates between 1996 and 2006, males and females showed quite different patterns of change (see Figure 20 and Figure 21).

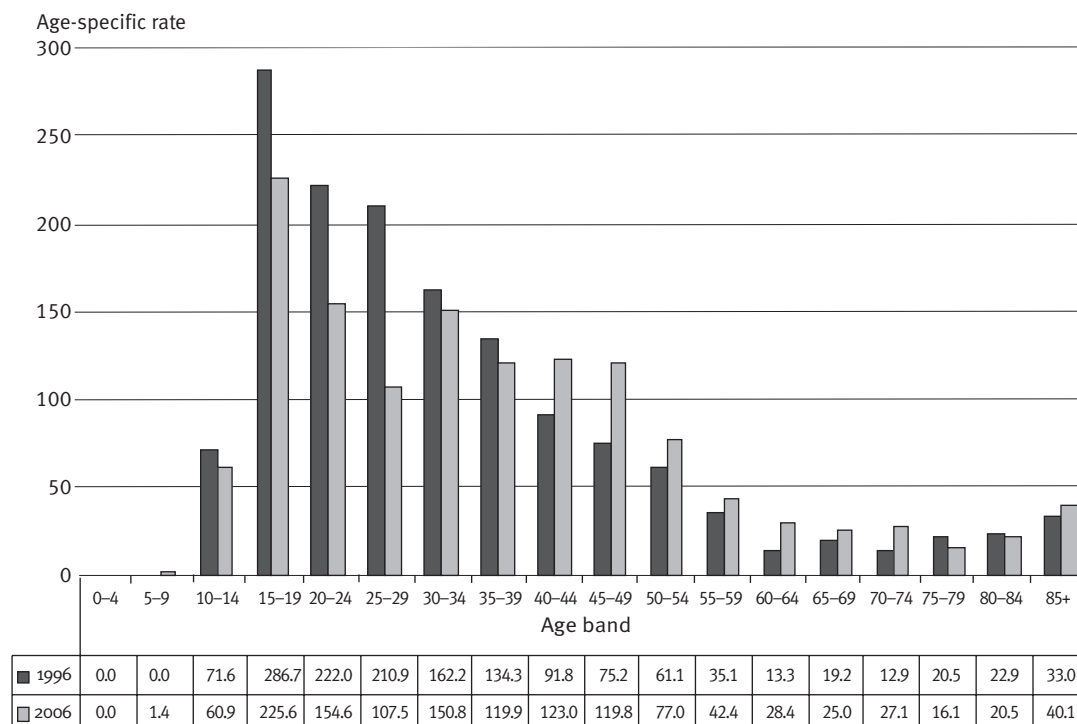
Figure 20: Male hospitalisation rates for intentional self-harm, by age group, 1996 and 2006



Source: New Zealand National Minimum Dataset

Since 1996 hospitalisation rates for males have declined for the younger age bands in the 15–30 years age range, with the biggest decrease in the 20–24 years age group (from 158 hospitalisations per 100,000 males in 1996 to 83.5 in 2006). For males aged 35 and over there has been very little change in hospitalisation rates over the last 11 years. Conclusions should not be drawn regarding the rates of males in the 85+ age group, as the numbers in this category were very small and can be misleading when converted to rates.

Figure 21: Female hospitalisation rates for intentional self-harm, by age group, 1996 and 2006



Source: New Zealand National Minimum Dataset

For females there was a similar decrease in hospitalisation rates for the younger age ranges, but it was the 25–29 years age range that has showed the largest decrease (from 210.9 hospitalisations per 100,000 females in 1996 to 107.5 in 2006). There was a marked increase in hospitalisations in women over the age of 40, with the biggest increase being seen in the 45–49 years age group (from 75.2 hospitalisations per 100,000 females in 1996 to 119.8 in 2006).

Youth rates

Over the last 11 years both the numbers and the age-specific rates of hospitalisations for self-harm for youths aged 15–24 have steadily reduced (see Table 13). Between 1996 and 2006 the hospitalisation rates of intentional self-harm for youths decreased by 32.5 percent.

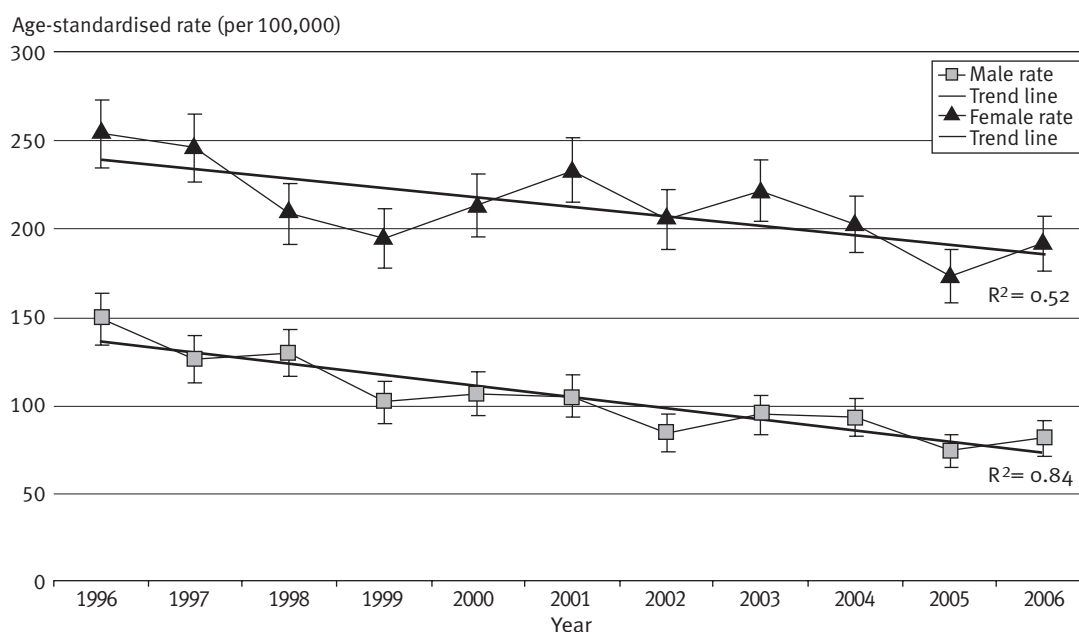
Table 13: Males and females aged 15–24, hospitalisations for intentional self-harm, numbers and age-specific rates per 100,000 population, 1996–2006

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	274	101.2	506	194.5	780	146.9
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

Source: New Zealand National Minimum Dataset

Figure 22 shows that there has been a significant reduction in the hospitalisation rates for self-harm of 15–24-year-olds for both males and females. Trend lines plotted from the data show that although rates among females have shown a relatively large amount of variation since 1996, the variation among males has been lower. The R^2 value of the male trend line is 0.84, which signifies a strong trend.

Figure 22: Males and females aged 15–24, hospitalisations for intentional self-harm, age-specific rates per 100,000 population, 1996–2006



Source: New Zealand National Minimum Dataset

Note: R^2 is a measure of the goodness of fit of the data to 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.

Ethnicity

Māori

In 2006 there were 473 hospitalisations for intentional self-harm (16.5 percent of the total number of hospitalisations for self-harm) among Māori (see Table 14). The most common age group for Māori males to be hospitalised was 25–29 years. Māori females were most commonly hospitalised between the ages of 15 and 19. Females accounted for 63 percent of Māori hospitalisations for intentional self-harm. This is comparable to the national trend.

Pacific peoples

Pacific peoples accounted for 70 hospitalisations for intentional self-harm in 2006 (2.4 percent of total self-harm hospitalisations). Numbers are too small to draw conclusions from this data. It should be noted, however, that Pacific females accounted for 49 percent of Pacific hospitalisations for intentional self-harm, a noticeably smaller proportion than in other ethnic groups. Pacific peoples were the only ethnic group where male hospitalisations for self-harm exceeded female hospitalisations.

Asian peoples

In 2006 there were 85 hospitalisations for intentional self-harm of Asian peoples (3 percent of all hospitalisations for self-harm). Numbers are too small to draw conclusions from this data. Women accounted for 71 percent of all Asian hospitalisations.

Other groups

People of European origin or those classified as *Other* had 2240 hospitalisations for intentional self-harm in 2006 (78.1 percent of all hospitalisations for self-harm). The most common age for males to be hospitalised was between 35 and 39, while females were more commonly hospitalised between the ages of 15 and 19. Females accounted for 66 percent of hospitalisations in this group.

Table 14: Hospitalisations for intentional self-harm, by ethnicity, age group and sex, 2006

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	473	0	0	31	92	68	59	58	67	44	22	13	6	6	5	2	0	0	0
	Males	174	0	0	5	28	31	33	24	23	17	6	2	3	0	2	0	0	0	0
	Females	299	0	0	26	64	37	26	34	44	27	16	11	3	6	3	2	0	0	0
Pacific	Total	70	0	0	3	13	19	15	4	4	5	2	3	0	1	0	0	1	0	0
	Males	36	0	0	1	7	6	8	2	3	4	2	2	0	1	0	0	0	0	0
	Females	34	0	0	2	6	13	7	2	1	1	0	1	0	0	0	0	1	0	0
Asian	Total	85	0	0	4	19	16	10	17	2	5	5	1	1	1	2	1	0	0	1
	Males	25	0	0	0	5	4	5	7	0	1	2	0	1	0	0	0	0	0	0
	Females	60	0	0	4	14	12	5	10	2	4	3	1	0	1	2	1	0	0	1
Other	Total	2240	0	2	71	349	244	171	265	256	246	232	143	92	51	32	21	22	20	23
	Males	755	0	0	11	85	81	65	85	107	73	64	53	43	31	17	7	14	11	8
	Females	1485	0	2	60	264	163	106	180	149	173	168	90	49	20	15	14	8	9	15
Total	Total	2868	0	2	109	473	347	255	344	329	300	261	160	99	59	39	24	23	20	24
	Males	990	0	0	17	125	122	111	118	133	95	74	57	47	32	19	7	14	11	8
	Females	1878	0	2	92	348	225	144	226	196	205	187	103	52	27	20	17	9	9	16

Source: New Zealand National Minimum Dataset

Māori and non-Māori comparison

Due to the relatively small numbers of self-harm hospitalisations within the Asian and Pacific populations, rates for these groups may be misleading. Therefore rates have been calculated using the groupings of Māori and non-Māori populations.

Table 15: Numbers and rates of intentional self-harm hospitalisations for Māori and non-Māori, by sex, 1996–2006

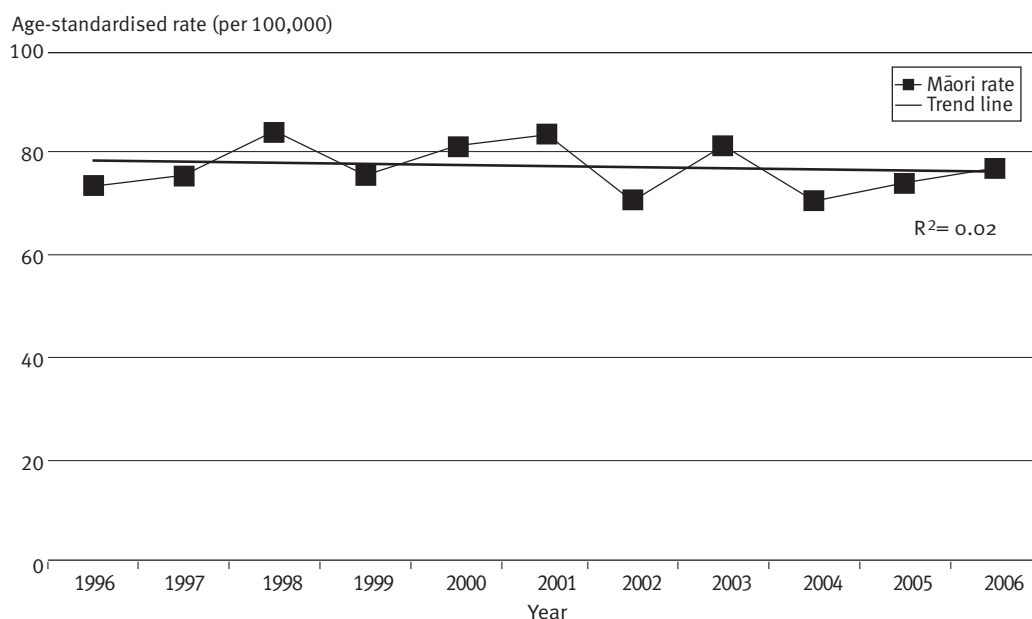
Year	Number						Rate					
	Māori self-harm hospitalisations			Non-Māori self-harm hospitalisations			Māori self-harm hospitalisations			Non-Māori self-harm hospitalisations		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1996	147	249	396	1026	1608	2634	56.3	89.8	73.5	67.8	108.0	87.7
1997	178	262	440	978	1656	2634	64.1	87.9	76.2	62.3	107.9	84.8
1998	217	268	485	1012	1606	2618	76.7	91.9	84.6	64.4	102.2	83.2
1999	194	260	454	893	1489	2382	67.4	85.1	76.3	56.9	95.0	75.8
2000	191	293	484	957	1576	2533	66.7	96.2	81.6	60.6	101.0	80.5
2001	211	302	513	903	1720	2623	71.7	96.7	84.2	57.0	108.1	82.6
2002	152	268	420	842	1640	2482	53.0	88.0	70.9	51.0	99.8	75.4
2003	193	305	498	856	1788	2644	66.1	97.2	82.0	51.3	107.0	79.1
2004	177	259	436	805	1759	2564	60.5	82.0	71.3	47.7	104.4	76.0
2005	187	276	463	766	1514	2280	64.0	85.6	74.9	45.0	89.3	67.0
2006	174	299	473	816	1579	2395	60.2	93.6	77.3	46.2	90.0	68.2

Source: New Zealand National Minimum Dataset

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization population tables.

As can be seen in Figure 23, since 1996 the rates of self-harm hospitalisations have varied for Māori. The inclusion of a trend line shows that the rates have generally remained stable over the last 11 years, with any variation being the result of relatively small numbers within the population.

Figure 23: Age-standardised self-harm hospitalisation rates for Māori, 1996–2006



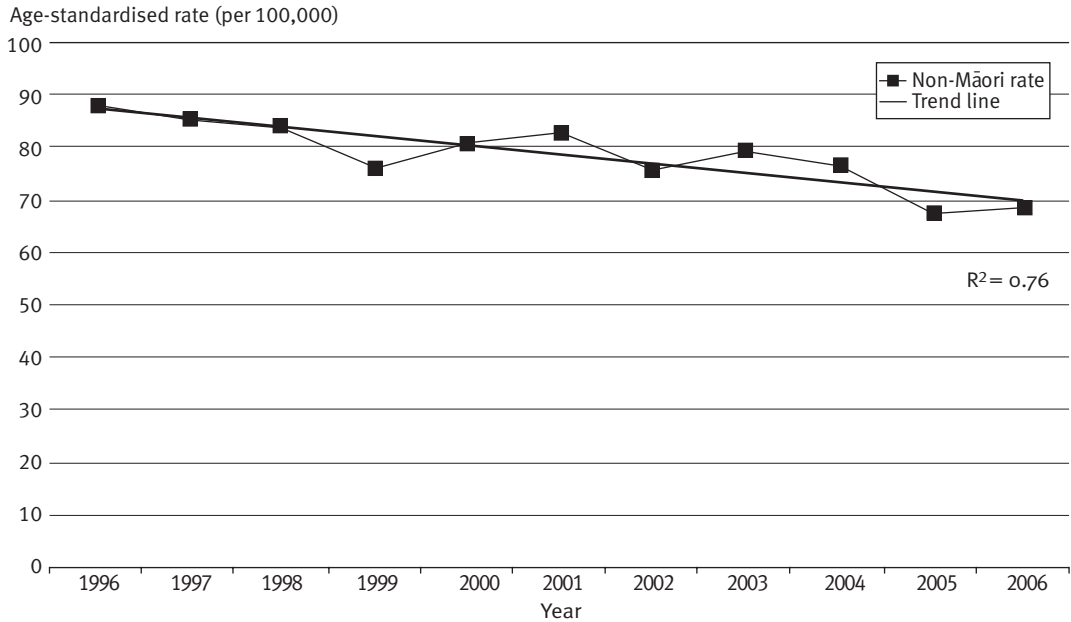
Source: New Zealand National Minimum Dataset

Notes:

1. The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization (WHO) standard world population.
2. R^2 is a measure of the goodness of fit of the data to the trend line. An R^2 value of 0.02 indicates that only 2 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.

Intentional self-harm hospitalisation rates for non-Māori have dropped markedly since 1996 (Figure 24).

Figure 24: Age-standardised self-harm hospitalisation rates for non-Māori, 1996–2006



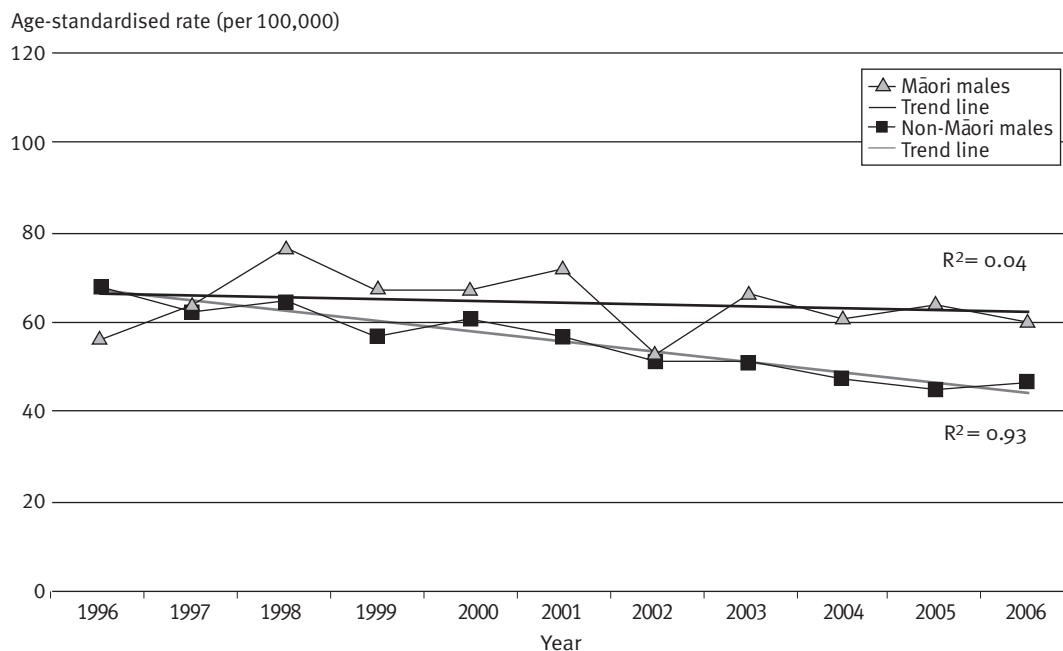
Source: New Zealand National Minimum Dataset

Notes:

1. The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization (WHO) standard world population.
2. R^2 is a measure of the goodness of fit of the data to the trend line. An R^2 value of 0.76 indicates that 76 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.

When breaking down the Māori and non-Māori groups by sex, it is possible to see that neither Māori males nor Māori females have shown any real change in rates since 1996 (Figures 25 and 26). Non-Māori females showed a slight downward trend, whereas non-Māori males showed a very strong downward trend ($R^2 = 0.93$).

Figure 25: Hospitalisation rates for Māori and non-Māori males, 1996 to 2006

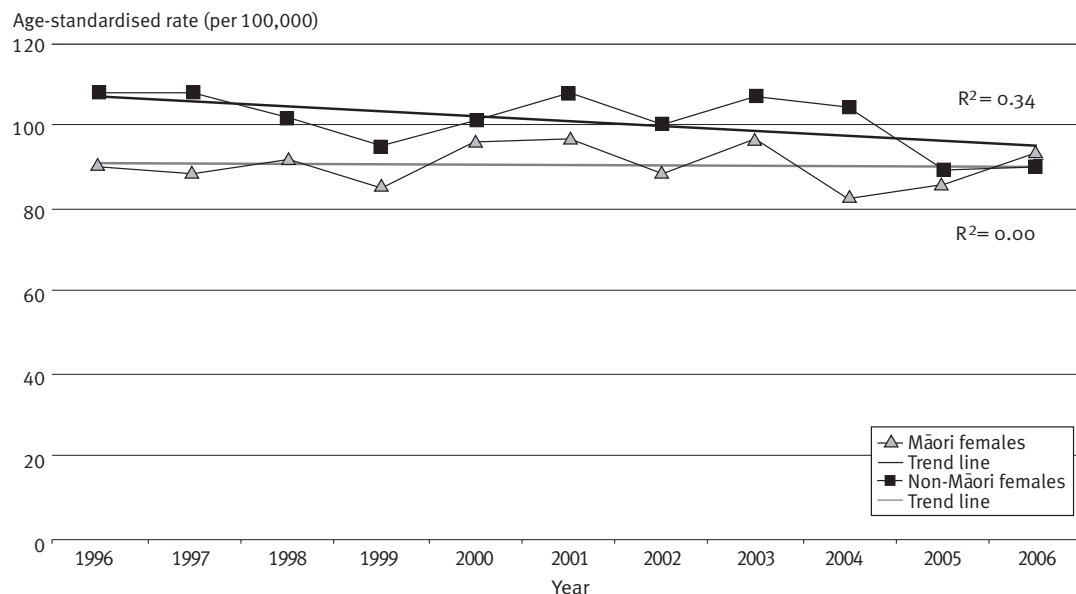


Source: New Zealand National Minimum Dataset.

Notes:

1. The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization (WHO) standard world population.
2. R^2 is a measure of the goodness of fit of the data to the trend line. 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.

Figure 26: Hospitalisation rates for Māori and non-Māori females, 1996–2006



Source: New Zealand National Minimum Dataset

Notes:

1. The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization (WHO) standard world population.
2. R^2 is a measure of the goodness of fit of the data to the trend line. An R^2 value of 0.34 indicates that 34 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.

Deprivation

Analysis of intentional self-harm hospitalisations by deprivation quintile shows that there was a significant difference between the observed rate for the least deprived (quintile 1) and the most deprived (quintile 5) (see Table 16). Males and females living in the most deprived areas had significantly higher rates of self-harm hospitalisation than those living in the least deprived areas.

Table 16: Numbers and age-standardised rates of intentional self-harm hospitalisation, by NZDep2001 quintile, 2006

Deprivation quintile		Number	Rate
1 least deprived	Total	341	46.3
	Males	106	27.4
	Females	235	65.9
2	Total	402	51.8
	Males	116	29.4
	Females	286	74.7
3	Total	520	61.9
	Males	189	45.0
	Females	331	79.0
4	Total	784	90.8
	Males	270	63.3
	Females	514	118.0
5 most deprived	Total	807	97.9
	Males	302	75.5
	Females	505	119.7

Source: New Zealand National Minimum Dataset

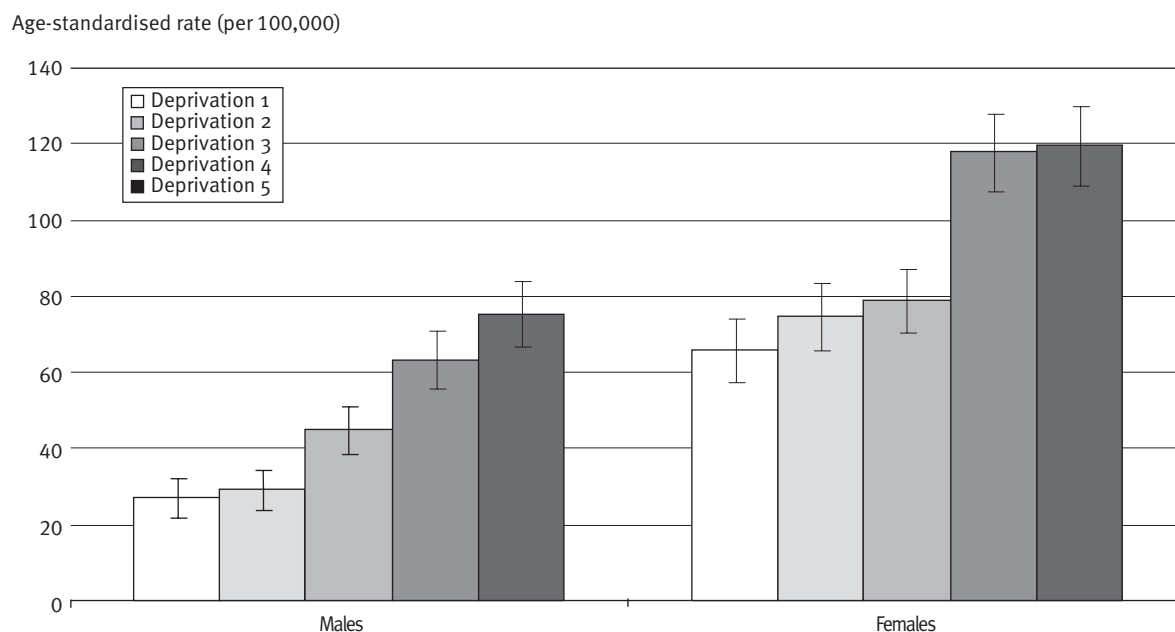
Notes:

1. The New Zealand Deprivation Index provides a summary deprivation score for small areas in New Zealand. In this publication the scores are from 1 to 5, and are a weighted sum of nine characteristics of deprivation. It is recognised that deprived individuals are more likely to suffer poor health outcomes than are less deprived individuals (White et al 2008: 7). See the 'Definitions' section of this publication for further information.
2. The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization population tables.

Figure 27 shows the rates and confidence intervals relating to each quintile. For both males and females there was a significant difference between the least and most deprived quintiles. For males, the rate in the most deprived quintile was almost three times higher than the rate in the least deprived quintile. For females the rate was almost twice as high in the most deprived quintile.

For males there was a significant difference when quintiles 1 and 2 were compared with quintile 3. There was also a significant difference when quintile 3 was compared with quintiles 4 and 5. For females there was no significant difference between the two most deprived quintiles, but these two were significantly different from the rest of the population.

Figure 27: Age-standardised intentional self-harm hospitalisation rates, by deprivation quintile and sex, 2006



Source: New Zealand National Minimum Dataset

Notes:

1. The New Zealand Deprivation Index provides a useful measure of the geographic distribution of disparities in New Zealand. It is recognised that deprived individuals are more likely to suffer poor health outcomes than are less deprived individuals (White et al 2008 7). See the *Definitions* section of this publication for further information.
2. The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization population tables.

District Health Boards

As explained at the beginning of this section, the hospitalisation data have been filtered in such a way as to allow as much consistency as possible over time and between District Health Boards. It is important to exercise caution when comparing rates among District Health Boards because there will still be differences in patient management.

Table 17 shows that the District Health Board with the highest age-standardised rate of intentional self-harm hospitalisation in 2006 was Wairarapa, followed by South Canterbury, with Auckland being the lowest. The District Health Board with the lowest female to male rate ratio was Auckland, with 1 female hospitalised for every male. Lakes District Health Board had the highest rate ratio, with 3.3 females hospitalised for every male.

Table 17: Numbers and rates of intentional self-harm hospitalisations, by District Health Board of domicile and sex, 2006

DHB	Males		Females		Total		F:M
	Number	Rate	Number	Rate	Number	Rate	rate ratio
Northland	51	80.8	83	116.7	134	98.7	1.4
Waitemata	123	50.8	205	79.1	328	65.0	1.6
Auckland	68	29.6	69	30.0	137	29.9	1.0
Counties Manukau	78	36.7	106	46.4	184	41.3	1.3
Waikato	77	46.4	187	110.2	264	78.7	2.4
Lakes	22	49.0	80	160.9	102	105.7	3.3
Bay of Plenty	45	51.7	63	69.1	108	60.6	1.3
Tairāwhiti	8	36.0	24	107.6	32	71.9	3.0
Hawke's Bay	31	46.3	61	87.1	92	66.9	1.9
Taranaki	39	85.1	61	116.2	100	101.3	1.4
MidCentral	58	76.7	115	142.2	173	109.6	1.9
Whanganui	16	57.7	28	92.0	44	74.7	1.6
Capital and Coast	64	44.5	131	88.1	195	67.4	2.0
Hutt Valley	37	55.8	113	162.4	150	109.2	2.9
Wairarapa	18	110.1	34	207.2	52	158.0	1.9
Nelson Marlborough	36	55.4	85	155.6	121	103.8	2.8
West Coast	10	63.3	21	132.8	31	97.0	2.1
Canterbury	114	47.0	229	97.2	343	72.0	2.1
South Canterbury	22	103.5	37	159.8	59	131.0	1.5
Otago	48	56.3	102	111.5	150	83.9	2.0
Southland	21	41.1	41	74.5	62	57.9	1.8

Source: New Zealand National Minimum Dataset

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization population tables.

Table 18 and Figure 28 show the age-standardised rates of hospitalisation for each District Health Board by sex, based on three years' accumulated data.

Table 18: Numbers, rates and female-to-male rate ratios of intentional self-harm hospitalisations, by District Health Board, 2004, 2005 and 2006 accumulated data

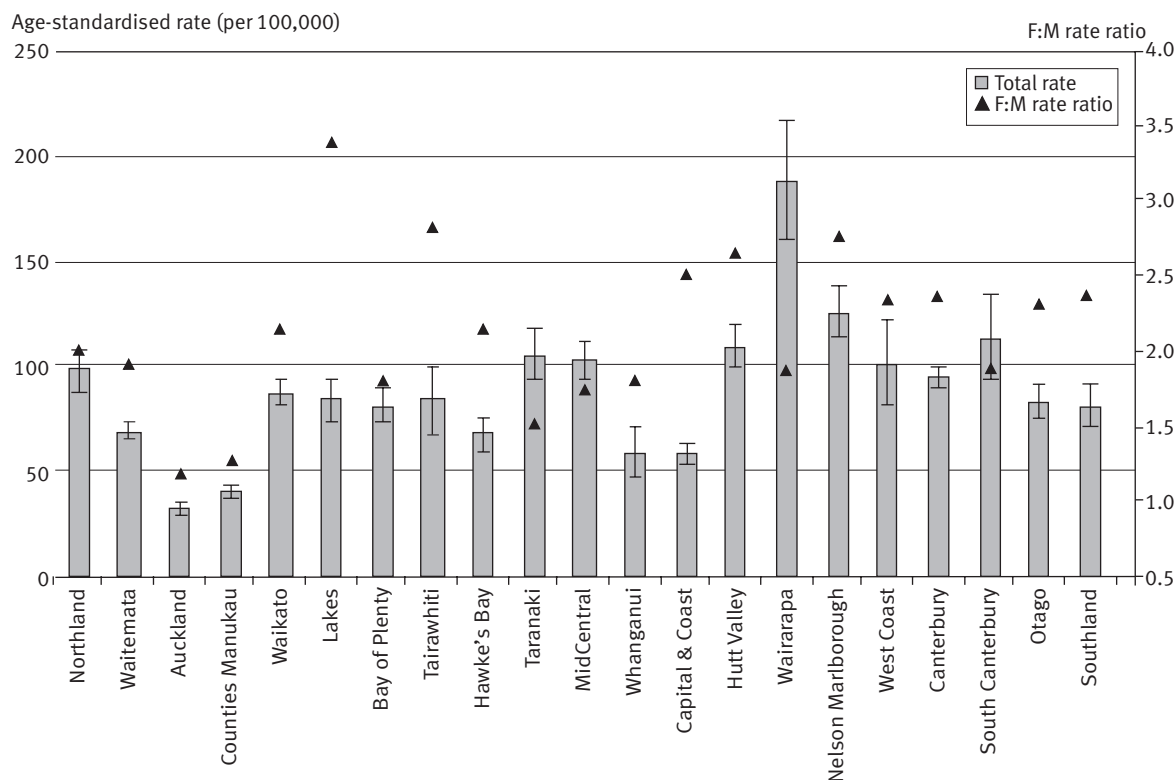
DHB	Males		Females		Total		F:M
	Number	Rate	Number	Rate	Number	Rate	rate ratio
Northland	124	65.1	255	129.4	379	97.2	2.0
Waitemata	336	46.7	637	89.9	973	68.2	1.9
Auckland	207	29.5	231	35.1	438	32.2	1.2
Counties Manukau	234	35.5	280	44.7	514	40.0	1.3
Waikato	270	55.2	566	117.6	836	86.4	2.1
Lakes	56	37.8	183	127.9	239	83.1	3.4
Bay of Plenty	147	57.4	252	103.3	399	80.2	1.8
Tairāwhiti	30	43.8	73	123.8	103	83.4	2.8
Hawke's Bay	83	42.5	185	90.9	268	66.8	2.1
Taranaki	114	82.7	182	125.8	296	104.3	1.5
MidCentral	167	74.2	301	129.3	468	102.1	1.7
Whanganui	33	41.8	66	75.1	99	58.4	1.8
Capital and Coast	136	32.3	314	81.4	450	57.5	2.5
Hutt Valley	117	60.0	313	158.0	430	108.8	2.6
Wairarapa	58	131.9	108	243.2	166	187.0	1.8
<hr/>							
Nelson Marlborough	122	66.7	286	184.6	408	124.1	2.8
West Coast	29	61.1	64	142.0	93	100.6	2.3
Canterbury	385	55.9	844	132.8	1229	94.0	2.4
South Canterbury	46	79.0	80	147.9	126	112.5	1.9
Otago	144	49.8	295	114.4	439	82.3	2.3
Southland	73	48.1	158	113.7	231	80.2	2.4

Source: New Zealand National Minimum Dataset

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to the World Health Organization population tables.

The three-year accumulated data shows that many of the District Health Boards have confidence intervals that overlap each other, indicating that there were no significant differences between the observed rates. However, there were exceptions; for example, Auckland and Counties Manukau District Health Boards had significantly lower rates than any other District Health Board, and Wairarapa District Health Board had a significantly higher rate than all other District Health Boards.

Figure 28: Total age-standardised hospitalisation rates and female-to-male rate ratios for intentional self-harm, by District Health Board, 2004, 2005 and 2006 (accumulated data)



Source: New Zealand National Minimum Dataset

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

Table 18 and Figure 28 also show the female-to-male rate ratio for each District Health Board. Auckland and Counties Manukau had the lowest rate ratios, with almost equal numbers of females and males being hospitalised. In many other District Health Boards the higher the age-standardised rate of hospitalisation, the higher the proportion of females that were hospitalised. However, Wairarapa District Health Board does not follow this pattern: it had a high hospitalisation rate, but a relatively low female-to-male rate ratio. The opposite is true of Lakes District Health Board, which had a relatively low age-standardised hospitalisation rate but an extremely high rate ratio, such that 3.4 females were hospitalised for every male. These differences may have been due to differences in admission practices between District Health Boards.

Technical Notes

Data

Population denominator

The 2006 suicide and self-harm hospitalisation rates presented in this report will differ from those in last year's publication of *Suicide Facts* (Ministry of Health 2007). In this year's data, any population analysis is based on New Zealand population estimates as calculated by Statistics New Zealand. In previous publications different population denominators have been used. Please note: the only exception to this is the deprivation data, where population projections have been used.

Suicide deaths

All suicide mortality data in this publication were sourced from the New Zealand Mortality Collection, except for international comparisons, which were sourced from the World Health Organization, the American Association of Suicidology, the Australian Bureau of Statistics or the United Kingdom Office for National Statistics.

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 will be heard several years after the death, particularly if there are a number of factors relating to the death that need to be investigated first. Consequently, a provisional classification may be made for a suicide before a coroner's verdict. The suicide mortality data contained in this report are provisional 2006 data. Some deaths that were registered in 2006 (24) are still subject to coroners' findings, for which neither a final nor a provisional cause of death has been assigned.

The number of provisional deaths for 2006 presented in this report may differ slightly from the number for the same year in future reports, when final 2006 data are presented. The Ministry of Health will release the final data in the publication *Mortality and Demographic Data*.

The suicide data in this report are based on the date the death is registered, which is usually soon after the person has died. However, it may mean that a few deaths (approximately 2 percent) are registered in later years. It is also worth noting that individuals younger than five years are not included in suicide data. They are omitted because self-harm in individuals in this age group is rare and more likely to be accidental or a product of misclassification.

Hospitalisation for intentional self-harm

The motivation for intentional self-harm varies, and therefore hospitalisation data is not a measure of attempts to take one's life by suicide. Hospitalisation data has been used from 1996 onwards because earlier years' data would not be consistent. Please also note that data from July 2004 onwards is currently provisional, as not all publicly-funded hospital data has been received by the Ministry of Health.

The hospitalisation data used in this report has been filtered to remove patients who were admitted via the emergency department and stayed less than two days in hospital. There are huge variations between the numbers of short-stay admission recorded by District Health Boards because admission practices vary among them, and so filtering was necessary to allow better comparisons between District Health Boards and years. The removal of this data is explained more fully at the beginning of the hospitalisation section.

It is important to note that readmissions to hospital for a self-harm event within two days of a previous self-harm discharge have also been removed. This was to ensure that admissions relating to transfers were excluded, because different District Health Boards have different procedures for transfers. It is also important to note that hospitalisations for self-harm represent unique events of self-harm, rather than the number of people being hospitalised following a self-harm event. As a result, a single person can contribute numerous unique self-harm events.

Since 1996 there have been two hospitalisations reported for intentional self-harm for 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.

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 any tabular data supplied in this publication.

International Classification of Diseases (ICD) codes

The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM) codes used for both mortality and hospitalisations were X60–X84, Intentional Self-Harm.

The International Statistical Classification of Diseases and Related Health Problems, 9th Revision, Clinical Modification (ICD-9-CM) codes used were E950–E959 Suicide and Self-inflicted Injury (National Centre for Classification in Health 2002) for 1986–1999 data.

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 rates, taking into account differences in the group size and age structure.

This publication has used the World Health Organization standard world population.

Age-specific rates

An *age-specific rate* refers to the frequency with which suicide occurs relative to the number of people in a defined age group. Age-specific rates are given in five-year age groups.

Comparison with international data

Care should be taken when comparing the New Zealand data presented in this report with that of other countries. Many factors affect the recording and classification of suicide in different countries, including the level of proof required for a verdict, stigma, religion, social class, occupation and confidentiality (Andriessen 2006). Statistical measures, such as confidence intervals, cannot account for these differences, and providing them may create a false sense of confidence in these differences. Therefore, confidence intervals have been excluded from the section on international comparisons. The data used in this publication to make international comparisons are the most recent available.

Deprivation

The Social 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 Social Deprivation Index is calculated at meshblock level, 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 decreasing weight in the index 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 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. owned home: people not living in their own home.

Note that the 2001 index is used in this publication with data coded using 2001 domiciles at District Health Board level, because the 2006 domicile codes were not introduced until 2008 and do not apply to this data. 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 District Health Board region. Caution should be exercised when interpreting regional differences in hospitalisation rates for intentional self-harm among District Health Boards. A cautious approach is necessary for hospitalisations because many District Health Boards differ in their reporting practices and patient management.

Ethnicity

There are different methods for outputting ethnicity data. This publication uses *prioritised ethnicity*, where each respondent 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 that are important in terms of policy are not swamped by the European ethnic group (Ministry of Health 2004).

This publication used two ethnic classifications for analysing suicides and self-harm hospitalisations. The first ethnic classification for the total population is Māori, Pacific peoples, Asian peoples and European/Other. The second divides the population into Māori and non-Māori.

Prior to 1996 Māori and Pacific peoples were undercounted because ethnicity was recorded differently on death registration forms and in the Census. The concept of ethnicity was based on biological race (ie, percentage of blood) on death registration forms, and on a sociocultural concept (ie, cultural affiliation) in the Census. From September 1995 the death certificate included a question comparable with the self-identified ethnicity question in the 1996 Census, including allowing for multiple ethnic identities. New Zealand Census – Mortality Study adjustors can be applied to mortality counts from 1996 to 1999. These adjust the data to allow for an undercount of Māori and Pacific peoples. From 2000 onwards comparisons across all the 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).

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 admissions to hospital for intentional self-harm.

The *rate* of suicide or 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.

Rate ratios indicate how many times suicide or hospitalisation for intentional self-harm are reported in one population group compared with another.

R² value: the Co-efficient of determination.

This 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 R² 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. The confidence intervals have been calculated using the methods presented in Keyfitz 1996.

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. Confidence intervals 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). However, 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: Five-year age group populations for New Zealand, 2006

	Total Population	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	4,186,900	286,250	291,840	310,490	313,750	291,570	261,040	286,250	312,620	322,690	305,210	263,700	242,550	187,410	155,650	120,270	103,640	73,980	58,050
Males	2,049,500	146,420	149,230	159,500	159,470	146,030	127,100	136,420	149,190	156,030	149,130	129,950	119,820	92,300	75,650	57,470	47,590	30,060	18,170
Females	2,137,400	139,830	142,610	150,990	154,280	145,540	133,940	149,830	163,430	166,650	156,070	133,750	122,710	95,110	80,000	62,800	56,060	43,900	39,900
Māori																			
Total	624,100	73,110	71,230	70,810	66,000	50,450	43,420	43,260	42,440	40,490	35,330	26,840	20,840	14,210	11,310	7,160	4,210	2,000	1,010
Males	305,700	37,500	36,460	36,460	32,910	24,400	20,540	20,230	19,880	19,160	16,720	12,940	10,010	6,810	5,410	3,350	1,820	780	320
Females	318,400	35,600	34,770	34,350	33,080	26,050	22,870	23,040	22,550	21,330	18,610	13,900	10,830	7,400	5,900	3,810	2,390	1,220	690
Non-Māori																			
Total	3,562,800	213,140	220,610	239,680	247,750	241,120	217,620	242,990	270,180	282,200	269,880	236,860	221,690	173,200	144,340	113,110	99,430	71,980	57,040
Males	1,743,800	108,920	112,770	123,040	126,560	121,630	106,560	116,190	129,310	136,870	132,410	117,010	109,810	85,490	70,240	54,120	45,770	29,280	17,850
Females	1,819,000	104,230	107,840	116,640	121,200	119,490	111,070	126,790	140,880	145,320	137,460	119,850	111,880	87,710	74,100	58,990	53,670	42,680	39,210

Source: Statistics New Zealand

Table A2: Estimated New Zealand resident population, by District Health Board and five-year age group, 2006

	Five-year age group									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44
Northland										
Total	152,700	10,630	11,700	13,000	11,290	7050	6560	8420	10,160	11,320
Male	75,100	5,350	5940	6710	5840	3610	3090	3960	4790	5350
Female	77,600	5,260	5760	6290	5450	3440	3470	4460	5370	5970
Waitemata										
Total	504,700	34,490	35,480	37,540	38,040	34,430	31,100	35,760	41,420	42,050
Male	247,000	17,790	18,060	19,310	19,410	17,560	15,230	16,920	19,740	20,330
Female	257,700	16,700	17,420	18,240	18,630	16,870	15,870	18,840	21,680	21,730
Auckland										
Total	428,300	27,700	25,210	26,030	29,630	42,210	39,170	37,230	35,090	33,920
Male	209,600	14,240	12,980	13,430	14,790	20,550	19,130	18,040	16,980	16,710
Female	218,700	13,470	12,230	12,600	14,840	21,660	20,040	19,190	18,110	17,210
Counties Manukau										
Total	454,800	37,920	38,170	39,430	38,130	32,100	28,830	31,470	35,040	35,370
Male	222,500	19,480	19,390	20,160	19,430	15,800	13,580	14,680	16,530	17,100
Female	232,300	18,420	18,780	19,270	18,700	16,290	15,260	16,780	18,510	18,270
Waikato										
Total	350,200	25,150	25,980	27,720	27,200	24,350	20,930	22,060	24,700	25,460
Male	171,800	12,670	13,300	14,370	13,730	12,370	10,410	10,530	11,700	12,250
Female	178,400	12,480	12,680	13,340	13,470	11,980	10,530	11,530	13,000	13,220
Lakes										
Total	101,500	7810	8070	8450	7560	5620	5850	6640	7460	7580
Male	49,800	4000	4160	4320	3870	2830	2770	3180	3530	3580
Female	51,800	3800	3910	4120	3690	2780	3090	3460	3930	3990
Bay of Plenty										
Total	200,800	13,650	14,820	15,900	14,180	9760	9910	11,850	13,660	14,860
Male	97,700	7050	7650	8110	7270	4920	4820	5550	6300	7120
Female	103,100	6600	7170	7790	6910	4840	5090	6300	7360	7740
Tairāwhiti										
Total	45,900	3740	3920	4190	3670	2490	2410	2780	3070	3260
Male	22,400	1930	1990	2140	1900	1190	1120	1320	1430	1550
Female	23,500	1810	1930	2050	1770	1290	1290	1460	1650	1710
Hawke's Bay										
Total	152,600	10,830	11,520	12,400	11,390	7820	7840	9350	10,430	11,440
Male	74,300	5510	5880	6400	5750	4020	3730	4380	4970	5420
Female	78,300	5330	5640	6000	5630	3800	4110	4970	5460	6020
Taranaki										
Total	107,400	7,070	7630	8400	8040	5710	5770	6670	7500	8020
Male	52,900	3680	3940	4280	4160	2960	2840	3170	3600	3950
Female	54,500	3390	3690	4120	3880	2750	2930	3500	3890	4080
MidCentral										
Total	164,000	10,860	11,440	12,320	13240	12100	9500	9990	10,940	11,850
Male	79,800	5560	5750	6290	6630	6080	4670	4750	5180	5650
Female	84,200	5330	5690	6040	6610	6030	4830	5230	5760	6200

	Five-year age group							
	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84
Northland								
Total	11,490	10,550	10,060	8330	7370	5360	4400	2870
Male	5510	5230	4980	4080	3800	2690	2150	1260
Female	5980	5320	5080	4250	3580	2670	2250	1610
Waitemata								
Total	37,940	31,140	28,500	21,700	17,130	12,840	11,000	7940
Male	18,360	15,200	13,970	10,540	8200	6120	4990	3270
Female	19,580	15,940	14,520	11,150	8930	6710	6000	4670
Auckland								
Total	29,820	25,120	21,330	15,430	12,250	8720	7630	6000
Male	14,670	12,300	10,610	7610	5960	4130	3440	2350
Female	15,150	12,810	10,720	7810	6290	4590	4190	3650
Counties Manukau								
Total	31,480	26,080	23,190	17,790	13,690	9540	7690	5060
Male	15,420	12,830	11,410	8720	6680	4410	3580	2070
Female	16,060	13,250	11,780	9070	7010	5130	4110	2990
Waikato								
Total	24,720	21,850	20,190	15,960	13,510	10,700	8910	6100
Male	12,010	10,770	9880	7750	6600	5260	4130	2550
Female	12,710	11,080	10,310	8200	6910	5440	4780	3560
Lakes								
Total	7480	6350	5890	4680	3870	2960	2480	1610
Male	3690	3080	2840	2300	1950	1430	1180	650
Female	3790	3270	3050	2380	1920	1530	1300	960
Bay of Plenty								
Total	14,600	13,170	12,350	10,260	9560	7560	6620	4690
Male	6990	6360	6020	4960	4540	3670	3160	2020
Female	7610	6820	6340	5300	5020	3890	3460	2670
Tairāwhiti								
Total	3380	2990	2620	1930	1670	1340	1120	740
Male	1630	1510	1320	970	800	630	490	290
Female	1750	1470	1300	960	870	710	630	450
Hawke's Bay								
Total	11,240	10,020	9820	7430	6200	5000	4300	3110
Male	5470	4880	4830	3700	2990	2350	1960	1220
Female	5760	5150	4990	3730	3210	2640	2340	1890
Taranaki								
Total	7990	7030	6580	5150	4480	3730	3350	2490
Male	3830	3550	3290	2570	2140	1810	1530	990
Female	4160	3480	3290	2580	2330	1910	1820	1500
MidCentral								
Total	11,620	10,010	9530	7660	6770	5540	4680	3370
Male	5770	4790	4630	3730	3310	2610	2180	1390
Female	5850	5210	4890	3930	3460	2930	2500	1970

Table A2: Estimated New Zealand resident population, by District Health Board and five-year age group, 2006 continued

	Five-year age group									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44
Whanganui										
Total	64,000	4230	4610	5190	4910	3410	3050	3670	4150	4700
Male	31,300	2140	2410	2660	2550	1800	1510	1740	1990	2290
Female	32,600	2090	2200	2530	2360	1610	1540	1940	2150	2410
Capital and Coast										
Total	278,000	18,330	17,380	17,750	19,910	24,400	21,870	22,560	22,860	22,150
Male	134,400	9290	8840	9050	9730	11,610	10,680	10,670	10,940	10,720
Female	143,600	9040	8540	8690	10,180	12,800	11,190	11,890	11,930	11,430
Hutt Valley										
Total	140,900	10,290	10,440	10,820	10,840	8680	8250	9920	11,090	11,160
Male	69,300	5290	5370	5550	5560	4330	3990	4760	5380	5420
Female	71,600	4990	5070	5270	5280	4350	4250	5160	5710	5730
Wairarapa										
Total	39,600	2560	2730	3010	2770	1680	1690	2150	2580	2830
Male	19,300	1260	1380	1520	1440	890	800	1020	1210	1380
Female	20,300	1280	1350	1490	1330	790	890	1120	1370	1450
Nelson Marlborough										
Total	133,600	8010	8600	9580	9030	6290	6600	8240	9540	10,460
Male	66,100	4040	4480	4980	4720	3340	3240	4050	4550	5000
Female	67,500	3950	4120	4600	4310	2950	3360	4190	4990	5460
West Coast										
Total	32,100	1950	2070	2490	2060	1470	1620	1950	2290	2660
Male	16,300	1040	1060	1270	1080	790	790	920	1090	1330
Female	15,800	910	1010	1220	980	680	830	1040	1200	1320
Canterbury										
Total	483,400	30,480	30,660	32,660	34,780	35,090	29,570	33,180	36,830	37,210
Male	236,500	15,470	15,620	16,720	17,970	18,030	14,510	15,800	17,820	18,050
Female	246,800	15,020	15,050	15,940	16,810	17,050	15,060	17,380	19,010	19,160
South Canterbury										
Total	55,100	3030	3520	4050	3780	2310	2350	3070	3640	4150
Male	27,100	1580	1830	2110	1950	1220	1170	1490	1750	1960
Female	28,000	1450	1690	1940	1830	1090	1180	1570	1900	2190
Otago										
Total	184,600	10,160	10,630	11,670	15,740	17,270	10,150	11,150	11,940	13,240
Male	90,100	5180	5500	6000	7770	8400	5010	5430	5680	6420
Female	94,600	4980	5140	5670	7970	8870	5140	5720	6260	6820
Southland										
Total	110,000	7130	7270	7840	7350	6930	7320	7860	8140	8760
Male	55,000	3670	3690	4130	3830	3510	3650	3920	3960	4350
Female	55,000	3460	3580	3710	3520	3420	3670	3940	4170	4410
Other and unspecified										
Total	420	5	10	10	10	20	25	35	25	30
Male	290	0	10	5	5	15	20	25	20	15
Female	140	0	0	5	5	5	5	10	5	10
Total										
Total:	4,184,600	286,000	291,880	310,430	313,560	291,180	260,370	286,010	312,560	322,490
Male:	2,048,300	146,210	149,230	159,520	159,400	145,850	126,770	136,320	149,140	155,940
Female:	2,136,200	139,790	142,650	150,920	154,160	145,330	133,600	149,700	163,430	166,540

	45-50	51-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Whanganui									
Total	4760	4280	3920	3080	2870	2380	2120	1490	1160
Male	2300	2120	1960	1480	1330	1090	1000	600	360
Female	2450	2160	1960	1600	1540	1280	1120	890	790
Capital and Coast									
Total:	19,400	16,390	14,910	10,970	8910	6810	5720	4230	3390
Male:	9450	7920	7320	5360	4240	3230	2560	1700	1070
Female:	9950	8470	7580	5620	4670	3580	3160	2530	2320
Hutt Valley									
Total:	10,700	8700	8100	6010	4830	3760	3230	2350	1770
Male:	5260	4330	4070	2970	2350	1740	1470	930	510
Female:	5430	4370	4030	3040	2480	2030	1760	1420	1260
Wairarapa									
Total:	3060	2910	2830	2290	1950	1520	1370	940	710
Male:	1470	1450	1410	1150	950	760	610	380	210
Female:	1590	1460	1430	1140	1000	760	770	560	500
Nelson Marlborough									
Total:	10,890	9700	9560	7400	5850	4640	3960	3020	2270
Male:	5340	4810	4770	3740	2930	2260	1810	1270	760
Female:	5560	4890	4790	3660	2920	2380	2140	1750	1510
West Coast									
Total:	2720	2380	2240	1730	1440	1070	860	640	460
Male:	1420	1300	1170	880	750	570	410	280	140
Female:	1300	1080	1070	850	690	500	440	360	320
Canterbury									
Total:	35,560	31,440	29,330	22,040	18,400	14,690	13,600	10,050	7790
Male:	17,540	15,490	14,440	10,910	8840	6880	6030	4020	2380
Female:	18,020	15,950	14,880	11,140	9550	7810	7570	6020	5420
South Canterbury									
Total:	4260	4000	3930	3060	2810	2380	2140	1490	1140
Male:	2080	2040	2010	1500	1330	1150	980	570	360
Female:	2180	1950	1920	1560	1480	1230	1160	910	780
Otago									
Total:	13,560	12,270	11,550	8730	7630	6210	5530	4030	3150
Male:	6680	6170	5720	4370	3760	2940	2540	1590	900
Female:	6890	6100	5830	4360	3870	3270	2990	2440	2250
Southland									
Total:	8430	7220	6560	4980	4330	3400	2890	1960	1600
Male:	4190	3760	3390	2570	2150	1630	1340	760	460
Female:	4240	3460	3170	2410	2180	1770	1540	1200	1140
Other and unspecified									
Total:	50	55	45	50	20	20	10	0	0
Male:	30	35	35	30	15	10	10	0	0
Female:	20	20	15	20	5	10	0	0	0
Total									
Total:	305,160	263,650	243,010	186,660	155,530	120,170	103,600	74,180	58,140
Male:	149,120	129,930	120,080	91,900	75,620	57,380	47,570	30,180	18,180
Female:	156,040	133,720	122,930	94,760	79,910	62,790	56,030	44,000	39,960

Table A3: New Zealand projected deprivation quintile population by sex and five-year age group, 2006

	Age group								
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39
Total deaths									
Total	4,138,755	271,985	289,745	307,040	320,835	294,075	250,385	275,295	306,300
Male	2,035,050	139,220	148,390	158,595	163,620	150,405	125,005	132,950	146,700
Female	2,103,705	132,765	141,355	148,445	157,215	143,670	125,380	142,345	159,600
Quintile 1									
Total	769,244.2	45,183.2	51,941.7	57,695.9	57,738.8	46,642.4	39,227.2	47,456.5	60,551.8
Male	382,729.3	23,206.3	26,518.3	29,742.6	29,942.8	24,872.1	19,601.9	22,492.6	28,465.1
Female	386,514.9	21,976.9	25,423.3	27,953.2	27,796.0	21,770.3	19,625.3	24,963.9	32,086.7
Quintile 2									
Total	808,091.2	48,025.8	53,951.4	59,390.8	58,939.0	49,740.5	45,312.5	52,605.6	62,974.7
Male	398,487.0	24,458.9	27,775.5	30,594.2	30,469.4	26,051.0	22,731.5	25,297.7	29,891.9
Female	409,604.1	23,566.9	26,175.9	28,796.6	28,469.5	23,689.5	22,581.0	27,307.8	33,082.9
Quintile 3									
Total	841,681.4	52,703.8	55,223.5	58,253.9	60,994.8	59,513.3	54,226.1	58,894.2	63,268.6
Male	414,174.5	26,898.1	28,137.7	30,081.2	31,645.4	30,566.1	27,154.2	28,815.7	30,709.5
Female	427,506.9	25,805.7	27,085.8	28,172.7	29,349.4	28,947.2	27,072.0	30,078.5	32,559.1
Quintile 4									
Total	887,191.0	59,164.4	60,548.0	63,079.7	67,894.7	65,438.0	55,883.7	59,690.9	62,836.9
Male	431,315.0	30,233.9	30,939.7	32,703.9	34,363.0	32,835.9	27,935.1	28,944.3	30,583.7
Female	455,876.0	28,930.5	29,608.3	30,375.8	33,531.8	32,602.2	27,948.7	30,746.6	32,253.2
Quintile 5									
Total	829,996.7	66,739.6	67,908.8	68,451.3	75,131.4	72,602.5	55,593.6	56,479.4	56,470.4
Male	406,909.5	34,324.1	34,924.9	35,376.1	37,118.8	35,991.9	27,508.1	27,297.0	26,944.5
Female	423,087.2	32,415.5	32,983.9	33,075.1	38,012.6	36,610.5	28,085.5	29,182.4	29,525.9
Other and unspecified									
Total	2550.6	168.2	171.6	168.4	136.3	138.4	141.8	168.5	197.6
Male	1434.7	98.7	93.9	97.0	80.6	88.1	74.2	102.7	105.3
Female	1115.9	69.5	77.7	71.4	55.6	50.3	67.6	65.8	92.3

	Age group									
	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Total deaths										
Total	317,270	302,570	262,670	242,210	184,720	153,555	120,335	104,120	74,725	60,920
Male	153,590	147,795	129,655	120,230	91,190	74,620	57,125	47,390	30,040	18,530
Female	163,680	154,775	133,015	121,980	93,530	78,935	63,210	56,730	44,685	42,390
Quintile 1										
Total	68,409.4	67,590.7	59,248.6	52,065.2	35,458.2	25,909.3	18,410.7	15,642.7	10,933.8	9138.3
Male	32,934.9	33,277.2	29,756.9	26,714.4	18,211.0	13,171.5	9159.9	7330.3	4546.1	2785.4
Female	35,474.5	34,313.5	29,491.8	25,350.8	17,247.2	12,737.8	9250.7	8312.4	6387.7	6352.9
Quintile 2										
Total	66,151.5	63,687.0	54,989.7	50,767.3	38,040.7	30,712.4	23,871.1	20,705.1	15,296.1	12,929.9
Male	32,267.8	31,362.6	27,233.4	25,394.3	18,834.8	14,946.5	11,466.4	9576.3	6196.9	3938.0
Female	33,883.6	32,324.4	27,756.3	25,373.1	19,205.9	15,766.0	12,404.7	11,128.8	9099.2	8992.0
Quintile 3										
Total	63,893.9	60,182.4	52,655.0	49,724.1	39,203.4	33,242.2	26,315.1	23,071.6	16,440.4	13,875.1
Male	31,183.0	29,474.8	25,879.8	24,466.5	19,228.2	16,148.9	12,469.8	10,522.6	6598.8	4194.3
Female	32,710.9	30,707.6	26,775.2	25,257.6	19,975.3	17,093.3	13,845.2	12,549.0	9841.6	9680.8
Quintile 4										
Total	62,940.6	59,809.2	51,822.6	49,142.3	40,197.1	36,306.7	29,990.7	26,791.2	19,808.5	15,845.7
Male	30,265.3	28,858.5	25,260.8	23,680.6	19,312.8	17,060.8	13,853.7	11,902.1	7768.4	4812.6
Female	32,675.3	30,950.7	26,561.8	25,461.6	20,884.3	19,245.9	16,137.0	14,889.1	12,040.2	11,033.0
Quintile 5										
Total	55,674.0	51,063.0	43,711.1	40,302.6	31,659.9	27,297.8	21,704.2	17,869.1	12,218.9	9119.1
Male	26,837.9	24,686.5	21,391.3	19,861.8	15,499.6	13,242.8	10,157.7	8033.8	4917.6	2795.0
Female	28,836.2	26,376.5	22,319.8	20,440.7	16,160.3	14,055.0	11,546.5	9835.3	7301.4	6324.1
Other and unspecified										
Total	200.7	237.8	243.0	208.5	160.6	86.7	43.2	40.3	27.2	11.9
Male	101.1	135.5	132.8	112.4	103.6	49.6	17.5	24.9	12.2	4.6
Female	99.5	102.3	110.2	96.1	57.0	37.1	25.8	15.4	15.0	7.3

Table A4: Suicides and age-specific rates by five-year age group and sex, 1996

Age group	Males		Females	
	Number	Rate	Number	Rate
5-9	0	-	0	-
10-14	3	-	4	-
15-19	38	28.4	21	16.2
20-24	67	49.7	17	12.4
25-29	64	48.3	9	6.4
30-34	57	40.0	12	7.9
35-39	42	30.2	7	4.8
40-44	24	19.1	7	5.4
45-49	27	22.5	11	9.1
50-54	19	20.4	6	6.4
55-59	21	26.7	3	-
60-64	13	19.3	2	-
65-69	18	27.6	2	-
70-74	16	30.9	6	9.7
75-79	5	-	3	-
80-84	8	39.2	2	-
85+	6	53.6	0	-
Total	428	18.5	112	6.3

Source: New Zealand Mortality Collection

Note: A dash (-) indicates that a rate is suppressed because there were five or fewer deaths in this category.

Table A5: Suicide deaths by DHB region, total population, 2002–2006

DHB	Number	Rate
Northland	110	16.6
Waitemata	245	9.7
Auckland	213	9.2
Counties Manukau	256	12.1
Waikato	197	11.6
Lakes	64	13.2
Bay of Plenty	147	15.1
Tairāwhiti	39	17.5
Hawke's Bay	122	16.9
Taranaki	65	12.6
MidCentral	127	15.4
Whanganui	51	16.4
Capital & Coast	139	9.6
Hutt Valley	64	9.4
Wairarapa	35	19.4
Nelson Marlborough	77	11.2
West Coast	21	12.7
Canterbury	303	12.1
South Canterbury	28	10.8
Otago	111	11.6
Southland	82	15.5

Source: New Zealand Mortality Collection

Note: The rate shown is the age-standardised rate per 100,000 population, standardised to World Health Organization population tables.

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:

Sector Services

Information Directorate

Ministry of Health

PO Box 5013

Wellington

Ph: (04) 496 2000

Fax: (04) 816 2898

Email: inquiries@nzhis.govt.nz

Website: <http://www.nzhis.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 4735

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www.moh.govt.nz