

9 Trends in avoidable and amenable mortality: New Zealand, 1981-2001

9.1 Change in total avoidable and unavoidable mortality

Almost three quarters (74.3%) of all deaths at ages 0 to 74 years in 2001 are considered to be from avoidable causes, slightly less than in 1981 (79.2%). Of all deaths at these ages in 2001, almost one third (31.9%) are considered to be amenable to health care, again lower than in 1981 (36.0%) (Table 9.1, Figure 9.1). The sub-set of amenable mortality is shown in brackets in Table 9.1.

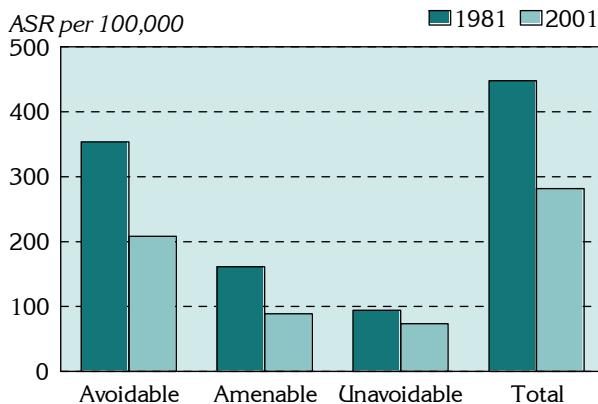
However, despite these consistent proportions, the ASR from avoidable mortality in 2001 (208.3 deaths per 100,000 population) was notably

(41.1%) lower than in 1981 (353.6 deaths per 100,000). Of the overall rate of avoidable mortality in 2001, 88.7 deaths per 100,000 population were estimated to have been amenable to health care, also substantially (45.1%) lower than the rate of 161.5 in 1981. Deaths from the remaining, or 'unavoidable' causes of mortality, comprised 73.4 deaths per 100,000 population in 2001, a decline of 22.2% compared to the ASR of 94.3 in 1981. The ASRs for all deaths at these ages were 281.6 deaths per 100,000 population in 2001, and 448.0 in 1981, a fall of 37.1% over the period.

Table 9.1: Change in avoidable mortality (0 to 74 years), New Zealand, 1981 and 2001

Mortality category	Number		Per cent of total		ASR		Per cent change
	1981	2001	1981	2001	1981	2001	
Avoidable mortality	11,450	8,614	79.2	74.3	353.6	208.3	-41.1
(Amenable mortality)	(5,214)	(3,703)	(36.0)	(31.9)	(161.5)	(88.7)	(-45.1)
Unavoidable mortality	3,015	2,987	20.8	25.7	94.3	73.4	-22.2
Total mortality	14,465	11,601	100.0	100.0	448.0	281.6	-37.1

Figure 9.1: Change in avoidable mortality (0 to 74 years), New Zealand, 1981 and 2001



In 2001 there were approximately 145,900 years of life lost (YLL) to deaths from avoidable causes, a decrease of one quarter (25.0%) from the 194,500 YLL in 1981 (Table 9.2).

The YLL from causes amenable to health care showed a greater relative decline (29.6%), from 88,709 years in 1981 to 62,407 in 2001.

Unavoidable mortality declined by 8.4% over the period, falling from 56,100 YLL in 1981 to 51,500 in 2001. Total mortality at ages 0 to 74 years accounted for approximately 250,700 YLL in 1981 and 197,400 years in 2001, a decrease of 21.3%.

However, with the growth in population over the period also impacting on the number of deaths, it is useful to examine the change in proportion of YLL in each category of mortality. In 1981, YLL from avoidable mortality accounted for 77.6% of total YLL, declining to 73.9% in 2001 (a ratio of 0.95**). YLL from amenable mortality fell to a similar extent, from 35.4% of total YLL in 1981 to 31.6% in 2001 (a ratio of 0.89**).

Table 9.2: Change in years of life lost (0 to 74 years), New Zealand, 1981 and 2001

Mortality category	Number		Per cent change	Per cent of total YLL		Ratio 2001:1981
	1981	2001		1981	2001	
Avoidable mortality	194,509	145,908	-25.0	77.6	73.9	0.95**
(Amenable mortality)	(88,709)	(62,407)	(-29.6)	(35.4)	(31.6)	(0.89)**
Unavoidable mortality	56,149	51,450	-8.4	22.4	26.1	1.16**
Total mortality	250,658	197,358	-21.3	100.0	100.0	..

9.2 Change in avoidable and amenable mortality by age and sex

By sex

Death rates for avoidable and amenable mortality for both males and females were notably lower in 2001 than in 1981 (Table 9.3, Figure 9.2).

In 1981 the avoidable mortality rate for males was 459.9 deaths per 100,000 population, 1.85** times the female rate of 248.2. By 2001, the rates of death from avoidable causes had declined to 257.3

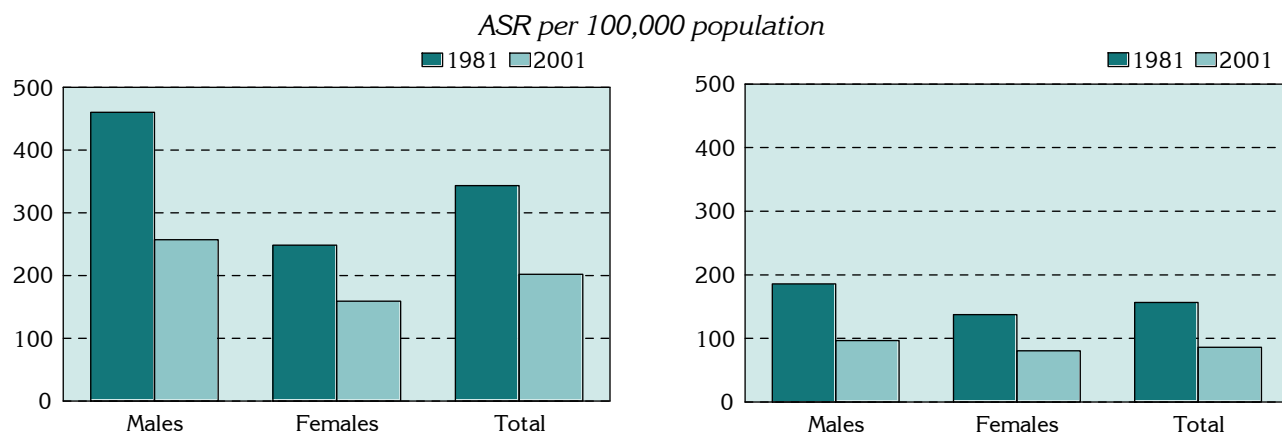
deaths per 100,000 population for males and 158.9 for females, a smaller differential, of 1.62**.

For deaths from amenable mortality, the male ASR of 185.8 in 1981 was 35% higher than the female rate of 137.6. By 2001, the ASR for male deaths from amenable causes had declined by 48.0%, to 96.6 deaths per 100,000 population, 20% higher than the ASR of 80.7 for females.

Table 9.3: Change in avoidable mortality (0 to 74 years) by sex, New Zealand, 1981 and 2001

Mortality category	Males			Females			Rate ratio Males:Females	
	ASR		Per cent change	ASR		Per cent change	1981	2001
	1981	2001		1981	2001			
Avoidable mortality	459.9	257.3	-44.1	248.2	158.9	-36.0	1.85**	1.62**
(Amenable mortality)	(185.8)	(96.6)	(-48.0)	(137.6)	(80.7)	(-41.4)	(1.35)**	(1.20)**
Unavoidable mortality	114.6	91.4	-20.2	73.9	55.5	-24.9	1.55**	1.65**
Total mortality	574.7	348.6	-39.3	322.2	214.4	-33.5	1.78**	1.63**

Figure 9.2: Change in avoidable and amenable mortality by sex, New Zealand, 1981 and 2001



By age

Rates of avoidable mortality declined notably between 1981 and 2001 for all age groups (Table 9.4). The declines in the rate of death from causes amenable to health care were similarly high, and more uniform across the age groups.

Numbers also fell notably in all age groups for both avoidable and amenable mortality, apart from the 25 to 44 year age group, where there was a small increase (5.4%) in the number of deaths from avoidable causes over the period.

Infants under one year of age recorded the largest decrease in the rate of deaths avoidable causes (47.0%), declining from 701.9 deaths per 100,000 population in 1981 to 372.3 deaths in 2001. The death rate from causes amenable to health care in this age group declined by a similar proportion (46.1%), from 674.1 deaths per 100,000 population in 1981 to 363.1 in 2001.

In the 1 to 24 year age group, the decline in the death rate from avoidable causes was just over one third (35.8%), from 53.7 deaths per 100,000 population to 34.5. The rate of amenable mortality in this age group fell by a 39.7%, from 12.6 deaths per 100,000 population in 1981 to 7.6 in 2001. The proportional decreases in number of deaths differed little for avoidable (41.9%) and amenable (42.9%) mortality.

The 25 to 44 year age group recorded the smallest proportional decrease in avoidable mortality (22.7%), with the rate falling from 105.1 deaths per 100,000 population in 1981 to 81.2 in 2001. The decline in the rate of deaths from amenable causes (46.4%) was more than double that from avoidable mortality, with the rate falling from 44.4 deaths per 100,000 population in 1981 to 23.8 in 2001.

As noted previously, there was an increase of 5.4% in the number of deaths from avoidable causes in this age group, while deaths amenable mortality decreased by 21.1%.

In the 45 to 64 year age group, the decline in the rates of avoidable mortality (44.5%; from 679.1 deaths per 100,000 population in 1981 to 376.7 in 2001) and amenable mortality (45.0%; 312.9 deaths per 100,000 population to 172.2 deaths per 100,000 population) was similar. The fall in the number of deaths over the period was also similar for both avoidable (25.7%) and amenable (26.1%) causes.

The decrease in the rate of death from avoidable causes in the 65 to 74 year age group (41.8%) was marginally lower than for amenable mortality (44.9%). Avoidable mortality in this age group declined from 2,749.3 deaths per 100,000 population in 1981 to 1,600.0 in 2001, compared to a fall from 1,243.2 deaths per 100,000 population in 1981 to 685.3 in 2001 in mortality from amenable mortality. There was a smaller relative decline in the number of deaths from avoidable causes (25.3%) compared to amenable causes (29.6%) in this age group.

Table 9.4: Change in avoidable and amenable mortality by age, New Zealand, 1981 and 2001

Age (years)	Number		Per cent change	Rate per 100,000 ¹		Per cent change
	1981	2001		1981	2001	
Avoidable mortality						
Infants (<1)	355	203	-42.8	701.9	372.3	-47.0
1-24	747	434	-41.9	53.7	34.5	-35.8
25-44	863	910	5.4	105.1	81.2	-22.7
45-64	4,132	3,069	-25.7	679.1	376.7	-44.5
65-74	5,354	3,998	-25.3	2,749.3	1,600.0	-41.8
Total (0 to 74)	11,450	8,614	-24.8	353.6	208.3	-41.1
Amenable mortality						
Infants (<1)	341	198	-41.9	674.1	363.1	-46.1
1-24	170	97	-42.9	12.6	7.6	-39.7
25-44	356	281	-21.1	44.4	23.8	-46.4
45-64	1,903	1,407	-26.1	312.9	172.2	-45.0
65-74	2,444	1,720	-29.6	1,243.2	685.3	-44.9
Total (0 to 74)	5,214	3,703	-29.0	161.5	88.7	-45.1

¹ Rates are age standardised within age categories, except under 1 year

By age and sex

Between 1981 and 2001 rates of death for avoidable causes of mortality fell by an average of 44.1% for males (from 459.9 deaths per 100,000 males in 1981 to 257.3 in 2001) and 36.0% for females (from 248.2 deaths per 100,000 females to 158.9) (Table 9.5, Figure 9.3).

The rate of deaths from avoidable causes for infants declined by 44.2% for males (from 747.6 deaths per 100,000 infant males to 417.2), and 50.3% for females (from 657.3 deaths per 100,000 infant females to 326.9) over the period. The declines in the rate of deaths from amenable causes were similar for both sexes, falling by 45.6% for infant males and 46.8% for infant females.

For the 1 to 24 year age group, there was a decline in the rate of deaths over the twenty year period of 34.9% for males (from 71.6 deaths per 100,000 males in 1981 to 46.6 in 2001), lower than the decrease of 37.6% for females (from 35.9 deaths per 100,000 females in 1981 to 22.4 in 2001). The decline in the rate of deaths from amenable causes was smaller for males (36.4%) than for females (42.7%).

In the 25 to 44 year age group, the decline in the rate of deaths from avoidable causes for males (15.8%) was less than half that for females (34.0%). The rate for males fell from 132.9 deaths per 100,000 males in 1981 to 111.9 in 2001, compared to a decline for females from 77.4 to 51.1 over the period. Conversely, the decrease in the rate of deaths from amenable mortality was higher for males (47.4%) than for females (44.9%).

The decline in the rate of deaths for avoidable causes in the 45 to 64 year age group was notably higher for males (50.9%; from 896.3 deaths per 100,000 males in 1981 to 440 in 2001) than for females (32.5%; from 463.3 to 312.6) over the same period. The rate for amenable mortality showed similar declines, with the rate for males falling from 367.4 deaths per 100,000 males in 1981 to 177.4 in 2001 (a decrease of 51.7%), and from 258.9 to 166.7 for females (a decrease of 35.6%).

In the 65 to 74 year age group, the decline in the death rate from avoidable mortality was higher for males (44.5%) than for females (37.3%). The ASR for males fell from 3,601.2 deaths per 100,000 males in 1981 to 1,998.6 in 2001, compared to a

decline from 1,909.6 to 1,197.1 over the same period for females. The declines in the death rates from amenable mortality were similar for both

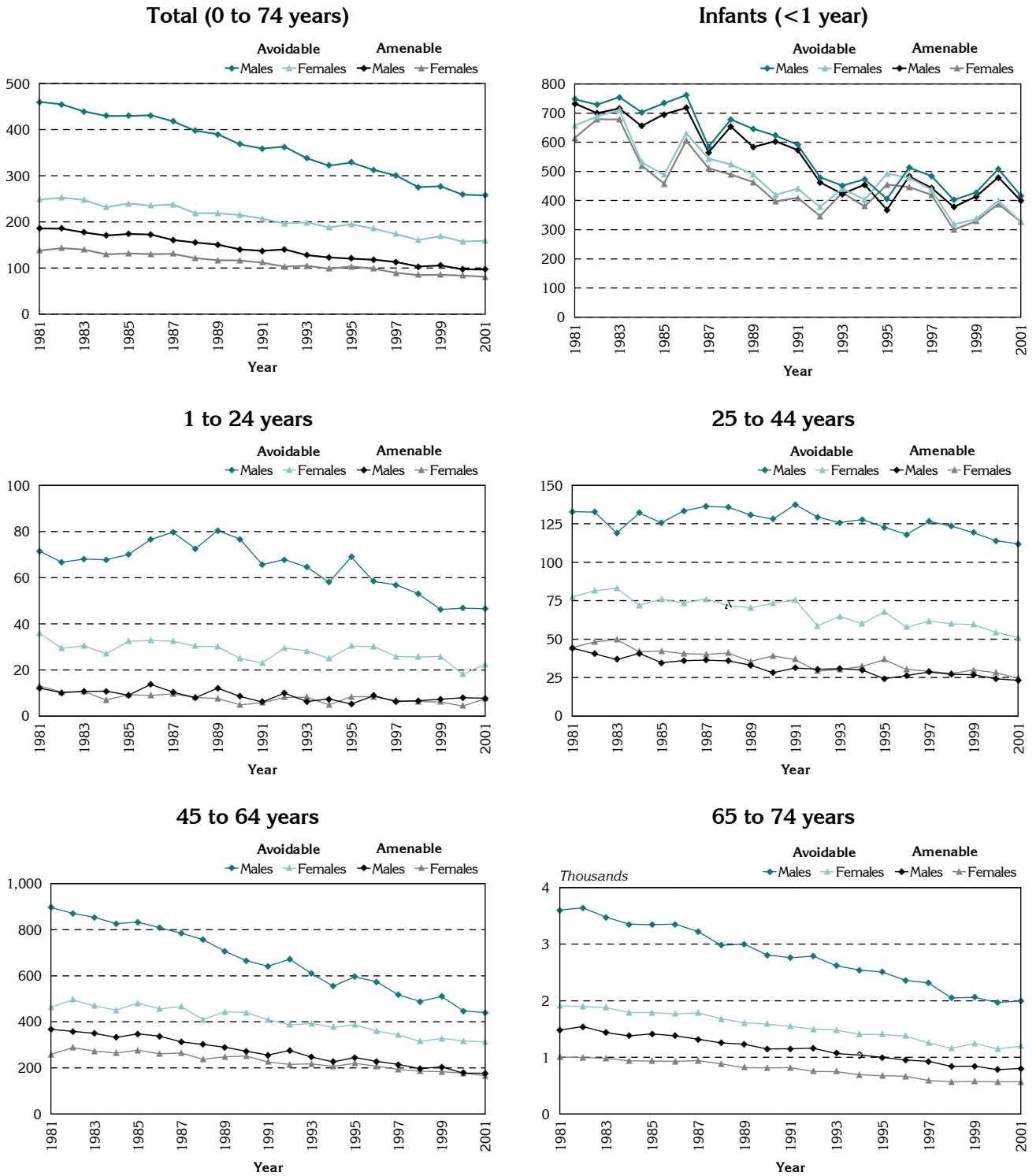
males (45.8%) and females (43.7%) in this age group.

Table 9.5: Change in avoidable and amenable mortality by age and sex, New Zealand, 1981 and 2001

Age (years)	Males			Females		
	Rate per 100,000 ¹		Per cent change	Rate per 100,000 ¹		Per cent change
	1981	2001		1981	2001	
Avoidable mortality						
Infants (<1)	747.6	417.2	-44.2	657.3	326.9	-50.3
1-24	71.6	46.6	-34.9	35.9	22.4	-37.6
25-44	132.9	111.9	-15.8	77.4	51.1	-34.0
45-64	896.3	440.0	-50.9	463.3	312.6	-32.5
65-74	3,601.2	1,998.6	-44.5	1,909.6	1,197.1	-37.3
Total (0 to 74)	459.9	257.3	-44.1	248.2	158.9	-36.0
Amenable mortality						
Infants (<1)	733.3	399.2	-45.6	614.8	326.9	-46.8
1-24	12.1	7.7	-36.4	13.1	7.5	-42.7
25-44	44.3	23.3	-47.4	44.5	24.5	-44.9
45-64	367.4	177.4	-51.7	258.9	166.7	-35.6
65-74	1,480.9	803.0	-45.8	1,006.7	566.9	-43.7
Total (0 to 74)	185.8	96.6	-48.0	137.6	80.7	-41.4

¹ Rates are age standardised within age categories, except under 1 year

Figure 9.3: Trends in avoidable and amenable mortality by age and sex, New Zealand, 1981 to 2001
Rate per 100,000 population: note the different scales



9.3 Change in avoidable mortality by cause

By major condition group

Between 1981 and 2001 ASRs declined (by between 20% and 60%) for 10 of the 12 major condition groups and increased marginally for one group (nutritional, endocrine and metabolic conditions). In contrast, the rate for intentional injuries increased substantially, rising by 34.5% (Table 9.6).

There were declines in ASRs of over 50.0% over the 20 year period for cardiovascular diseases (59.6%), digestive disorders (58.3%), infection (51.8%) and drug use disorders (51.6%) (Figure 9.4).

Declines of more than 40% over the 20 year period were recorded in the ASRs for genitourinary disorders (42.9%) and unintentional injuries (41.1%).

The ASRs for mortality from maternal and infant causes fell by 33.8% over the 20 year period, and by 26.7% from neurological disorders. The relative decline in rates of death from respiratory diseases over the period was just under one quarter (22.9%); and around one fifth (19.4%) from cancer.

Contrary to the notable declines in ASRs for most of the major condition groups over the 20 year period, there was a marginal increase (3.5%) in the ASR for nutritional, endocrine and metabolic conditions. This reflects the increase in the prevalence of type 2 diabetes over the study period.

As noted, the ASR for deaths from intentional injuries increased by one third (34.5%) over the period (from 11.6 deaths per 100,000 population in 1981 to 15.6 in 2001). This increase was due entirely to deaths from suicide.

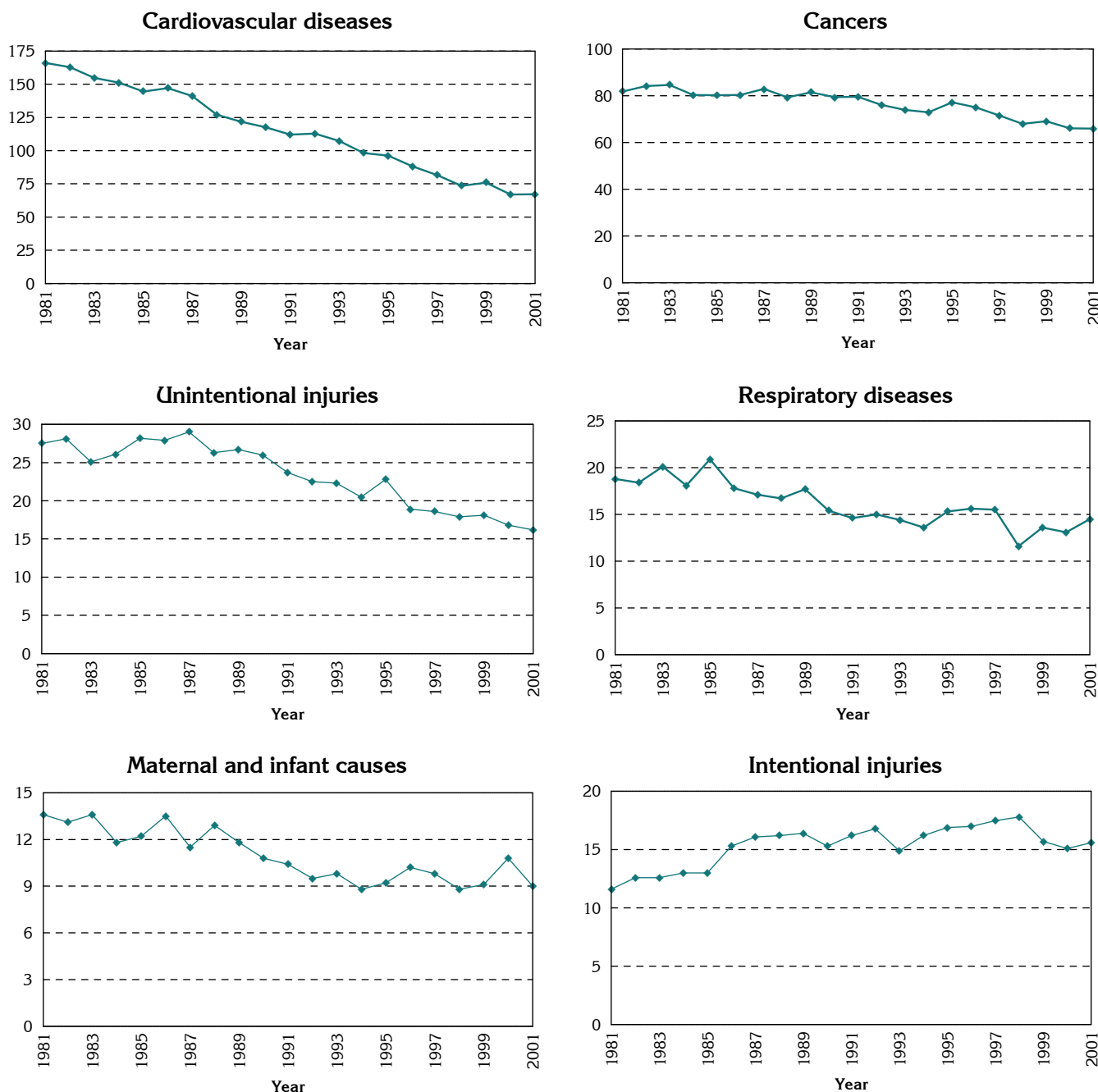
Table 9.6: Change in avoidable mortality (0 to 74 years) by major condition group, New Zealand, 1981 and 2001

Major condition group	Number		Per cent change	ASR		Per cent change
	1981	2001		1981	2001	
Infections	271	164	-39.5	8.5	4.1	-51.8
Cancers (malignant neoplasms)	2,651	2,808	5.9	81.8	65.9	-19.4
Nutritional, endocrine and metabolic conditions	280	378	35.0	8.5	8.8	3.5
Drug use disorders	189	119	-37.0	6.2	3.0	-51.6
Neurological disorders	44	39	-11.4	1.5	1.1	-26.7
Cardiovascular diseases	5,517	2,923	-47.0	166.1	67.1	-59.6
Genitourinary disorders	116	88	-24.1	3.5	2.0	-42.9
Respiratory diseases	639	634	-0.8	18.8	14.5	-22.9
Digestive disorders	160	85	-46.9	4.8	2.0	-58.3
Maternal and infant causes	379	277	-26.9	13.6	9.0	-33.8
Unintentional injuries	856	552	-35.5	27.5	16.2	-41.1
Intentional injuries	349	547	56.7	11.6	15.6	34.5
Total avoidable mortality	11,450	8,614	-24.8	353.6	208.3	-41.1

Note: the avoidable mortality causes which comprise each major condition group are detailed in Appendix 1.1

Figure 9.4: Trends in avoidable mortality (0 to 74 years) by selected major condition group, New Zealand, 1981 to 2001

ASR per 100,000 population: note the different scales



By cause

Ischaemic heart disease had the highest age-standardised death rate (ASR) from avoidable causes in each year from 1981 to 2001. The ASR fell from 122.4 deaths per 100,000 population in 1981 to 46.7 in 2001, a decline of 61.8%. The number of deaths also showed a notable decrease (49.9%) (Table 9.7, Figure 9.5).

Mortality from cerebrovascular diseases fell from an ASR of 33 deaths per 100,000 population in 1981 to 14 in 2001, a decrease of 57.6%: the number of deaths fell by 44.5%. The rate of lung cancer deaths declined by almost one quarter (23.1%), falling from an ASR of 27.3 deaths per 100,000

population in 1981 to 21 in 2001: the number of deaths varied little over the period. There was notable decline (41.7%) in the rate of deaths from road traffic injuries, from an ASR of 20.6 in 1981 to 12.0 in 2001, with a 37.3% fall in the number of deaths.

While the rate of deaths from colorectal cancer declined by 14.7% over the 20 year period, falling from an ASR of 17.7 deaths per 100,000 population in 1981 to 15.1 in 2001, the number of deaths increased by 11.9%. Similarly, the rate of deaths from COPD declined by 10% between 1981 and 2001, from an ASR of 15 deaths per 100,000 population to 13.5, but the number of deaths increased by 17.1% over the same period.

While the ASR for deaths from breast cancer declined by 15.7% over the period, from 11.5 deaths per 100,000 population in 1981 to 9.7 in 2001, the number of deaths increased by 13.7%.

The rate and number of deaths from suicide and other self inflicted injuries increased between 1981 and 2001, with the ASR rising by 41%, from 10 deaths per 100,000 population to 14.1: the number

of deaths increased by two thirds (65.4%).

Similarly, the ASR from diabetes increased 8.6%, from 8.1 deaths per 100,000 population in 1981 to 8.8 in 2001, with the number of deaths increasing by 41.7%.

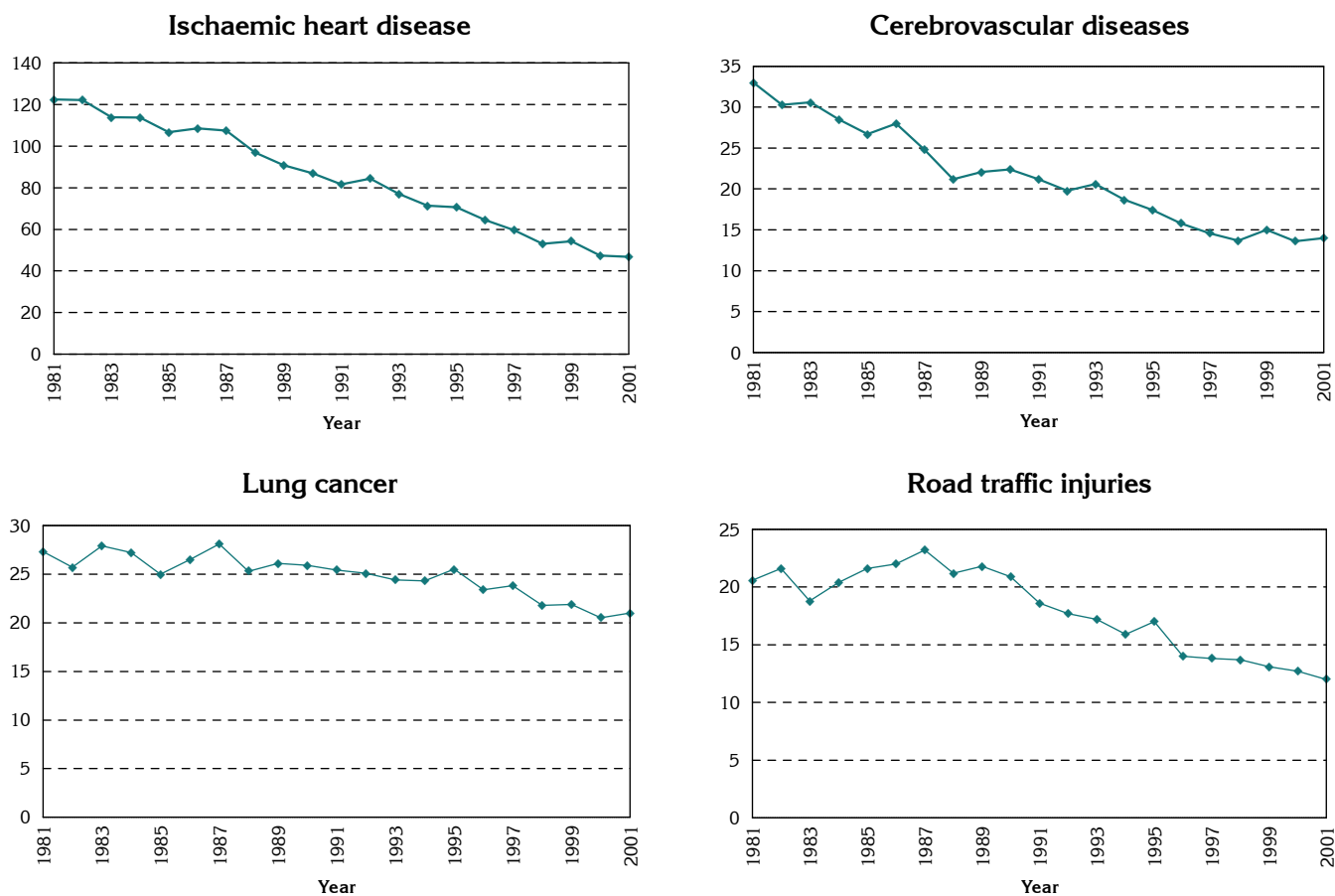
The rate and number of deaths resulting from birth defects fell (by 31.0% and 23.9%, respectively) over the period, from 7.1 deaths per 100,000 population in 1981 (201 deaths) to 4.9 in 2001 (153).

Table 9.7: Change in major causes of avoidable mortality (0 to 74 years), New Zealand, 1981 and 2001

Cause	Number		Per cent change	ASR		Per cent change	Rank	
	1981	2001		1981	2001		1981	2001
Ischaemic heart disease	4,047	2,026	-49.9	122.4	46.7	-61.8	1	1
Cerebrovascular diseases	1,117	620	-44.5	33.0	14.0	-57.6	2	5
Lung cancer	896	899	0.3	27.3	21.0	-23.1	3	2
Road traffic injuries	641	402	-37.3	20.6	12.0	-41.7	4	7
Colorectal cancer	579	648	11.9	17.7	15.1	-14.7	5	3
COPD (45 to 74 years)	515	603	17.1	15.0	13.5	-10.0	6	6
Breast cancer	365	415	13.7	11.5	9.7	-15.7	7	8
Suicide and self inflicted injuries	301	498	65.4	10.0	14.1	41.0	8	4
Diabetes	266	377	41.7	8.1	8.8	8.6	9	9
Birth defects	201	153	-23.9	7.1	4.9	-31.0	10	10

Figure 9.5: Trends in major causes of avoidable mortality (0 to 74 years), New Zealand, 1981 to 2001

ASR per 100,000 population: note the different scales

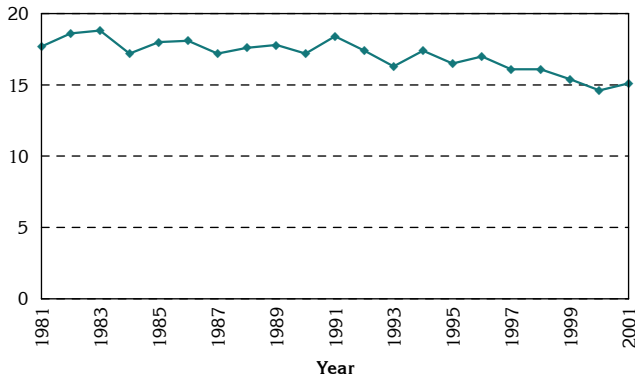


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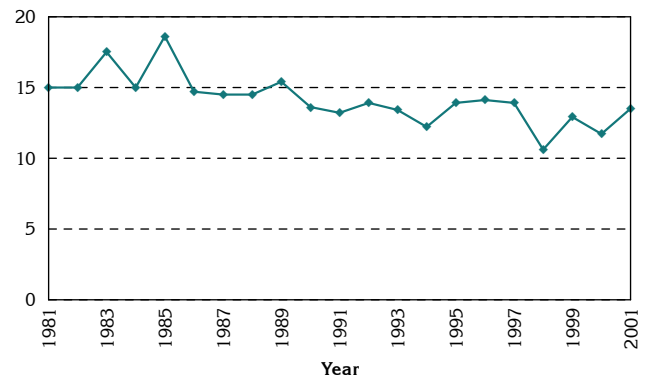
Figure 9.5: Trends in major causes of avoidable mortality (0 to 74 years), New Zealand, 1981 to 2001
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ASR per 100,000 population: note the different scales

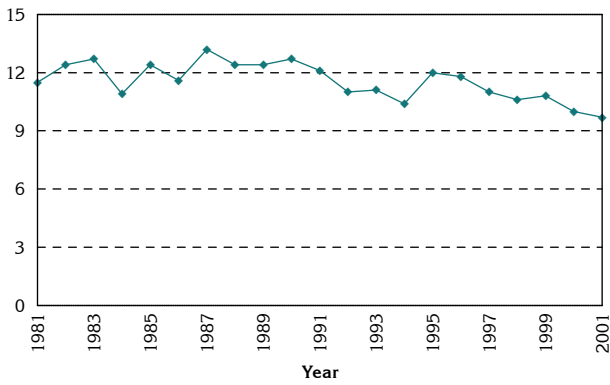
Colorectal cancer



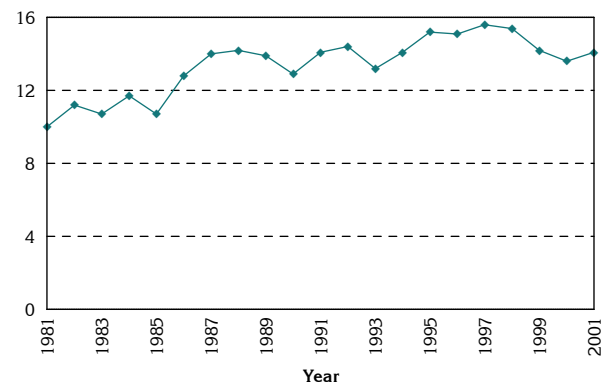
COPD (45 to 74 years)



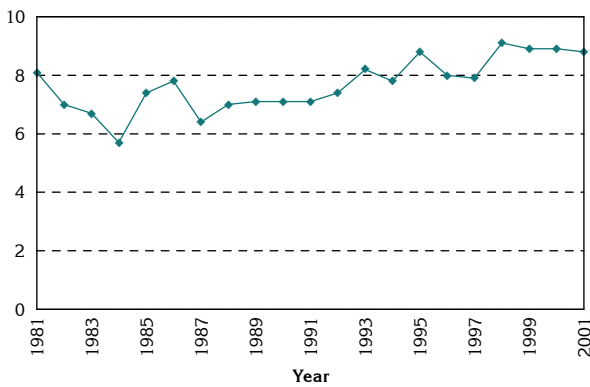
Breast cancer



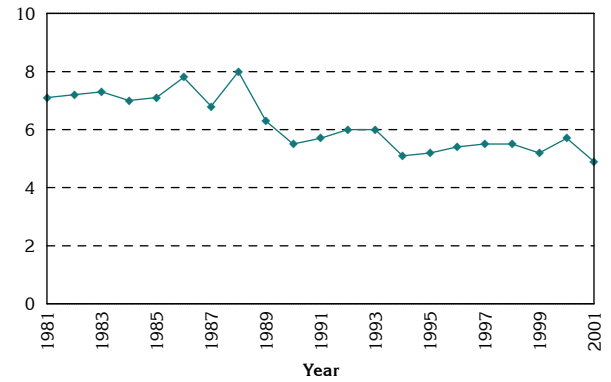
Suicide and self inflicted injuries



Diabetes



Birth defects



9.4 Change in avoidable and amenable mortality by area

Avoidable mortality

Between 1982-1986 and 1997-2001 the average decline in ASRs from avoidable causes across District Health Boards was 35.3%, ranging from 43% (West Coast) to 21.1% (Whanganui) (Table 9.8, Map 9.1). The proportional decrease in the total number of deaths from avoidable causes between the two periods was 22%, with a range from 43.1% (West Coast) to 2.4% (Northland).

The highest falls in ASRs between the two five year periods were in West Coast (43.0%; from 468.6 deaths per 100,000 population to 267.0), Auckland (41.7%; from 356.7 deaths per 100,000 population to 207.8), Taranaki (41.5%; from 359.8 deaths per 100,000 population to 210.6) and Canterbury (38.3%; from 300.1 deaths per 100,000 population to 185.2). Although West Coast recorded the highest per cent change in ASR between 1982-86 and 1997-01 showed little improvement in rank from the highest ASR in 1982-86 (468.6 deaths per 100,000 population) to fourth highest in 1997-01 (267.0)

The lowest declines in ASRs were recorded in the District Health Boards of Whanganui (21.1%; from 332.0 deaths per 100,000 population to 261.9), Tairāwhiti (25.9%; from 430.5 deaths per 100,000 population to 319.1), Southland (29%; from 345.4 deaths per 100,000 population to 245.4) and Northland (29.9%; from 392.3 deaths per 100,000 population to 274.9).

The number of deaths from avoidable causes declined by more than 30% between 1982-1986 and 1997-2001 in the District Health Boards of West Coast (43.1%; from 865 deaths to 492), Auckland (41.5%; from 6,196 deaths to 3,624), Taranaki (35.9%; from 1,992 deaths to 1,277) and Otago (32%; from 3,194 deaths to 2,171).

The smallest proportional decreases in the number of deaths from avoidable causes (less than 10%) were in Northland (2.4%; from 2,375 deaths to 2,318), Counties Manukau (3.8%; from 4,057 deaths to 3,904), Bay of Plenty (5.8%; from 2,610 deaths to 2,458) and Waitemata (6.0%; from 4,131 deaths to 3,885).

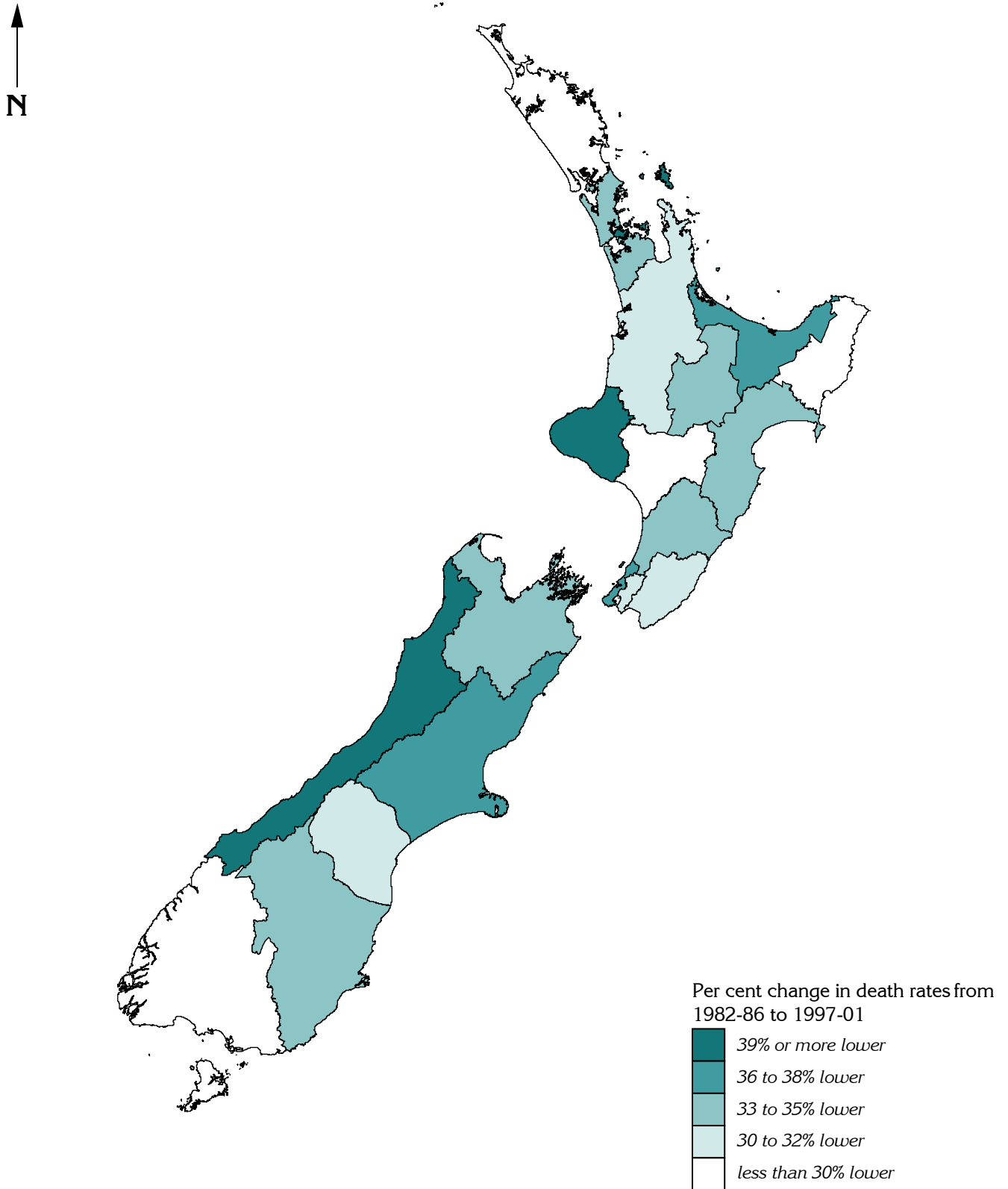
Table 9.8: Change in avoidable mortality (0 to 74 years) by area, New Zealand, 1982-1986 and 1997-2001

District Health Board	Number		Per cent change	ASR		Per cent change	Rank	
	1982-86	1997-01		1982-86	1997-01		82-86	97-01
Auckland	6,196	3,624	-41.5	356.7	207.8	-41.7	9	17
Bay of Plenty	2,610	2,458	-5.8	360.6	229.0	-36.5	7	12
Canterbury	6,228	4,489	-27.9	300.1	185.2	-38.3	19	20
Capital and Coast	3,365	2,459	-26.9	316.4	201.0	-36.5	18	18
Counties Manukau	4,057	3,904	-3.8	354.1	227.2	-35.8	10	13
Hawke's Bay	2,692	1,999	-25.7	372.6	243.0	-34.8	5	7
Hutt	2,214	1,594	-28.0	339.1	231.9	-31.6	13	10
Lakes	1,680	1,439	-14.3	436.7	283.5	-35.1	2	2
MidCentral	2,808	2,101	-25.2	364.7	237.5	-34.9	6	9
Nelson-Marlborough	1,692	1,398	-17.4	297.2	192.4	-35.3	20	19
Northland	2,375	2,318	-2.4	392.3	274.9	-29.9	4	3
Otago	3,194	2,171	-32.0	327.6	211.6	-35.4	16	15
South Canterbury	1,070	779	-27.2	318.6	217.2	-31.8	17	14
Southland	1,871	1,458	-22.1	345.4	245.4	-29.0	12	6
Tairāwhiti	978	755	-22.8	430.5	319.1	-25.9	3	1
Taranaki	1,992	1,277	-35.9	359.8	210.6	-41.5	8	16
Waikato	4,857	4,117	-15.2	350.2	239.8	-31.5	11	8
Wairarapa	666	556	-16.5	336.6	230.7	-31.5	14	11
Waitemata	4,131	3,885	-6.0	268.7	177.4	-34.0	21	21
West Coast	865	492	-43.1	468.6	267.0	-43.0	1	4
Whanganui	1,217	999	-17.9	332.0	261.9	-21.1	15	5
Total	56,758	44,272	-22.0	338.7	219.3	-35.3	..	..

Map 9.1

Change in avoidable mortality (0 to 74 years), New Zealand, 1982-1986 and 1997-2001

per cent change in age standardised death rates from 1982-1986 to 1997-2001 by District Health Board



Details of map boundaries are in Appendix 1.4

Australian and New Zealand Atlas of Avoidable Mortality

Amenable mortality

Between 1982-1986 and 1997-2001, the average decline in ASRs from causes amenable to health care across District Health Boards was 39.3%, ranging from 47.4% (Taranaki) to 33% (Tairāwhiti) (Table 9.9, Map 9.2). The overall proportional decrease in the number of deaths from causes amenable to health care was 26.2%, with variation across District Health Boards ranging from 46.3% (West Coast) to 5.6% (Northland).

The highest declines in ASRs (of more than 40%) between the two five year periods were in Taranaki (47.4%; from 170.3 deaths per 100,000 population to 89.6), West Coast (46.9%; from 208.0 deaths per 100,000 population to 110.4), Canterbury (43.6%; from 143.2 deaths per 100,000 population to 80.7), Lakes (42.6%; from 199.4 deaths per 100,000 population to 114.5), and Auckland (42.1%; from 159.1 deaths per 100,000 population to 92.1).

The largest proportional decrease in rates (47.4%) was in Taranaki, with a corresponding change in rank from fourth highest in 1982-86 to seventeenth in 1997-01. However, while West Coast recorded the second largest decline in rates (46.9%) there

was little improvement in rank from the highest ASR in 1982-86 (208.0 deaths per 100,000 population) to fourth highest in 1997-01 (110.4).

The lowest declines in ASRs were recorded in the District Health Boards of Tairāwhiti (33%; from 198.8 deaths per 100,000 population to 133.1), Hutt (33.1%; from 152.4 deaths per 100,000 population to 101.9), Northland (33.4%; from 169.8 deaths per 100,000 population to 113.1), Whanganui, from 165.6 deaths per 100,000 population to 109.6) and Southland (34.9%; from 160.4 deaths per 100,000 population to 104.5).

The number of deaths from causes amenable to health care declined by more than 40% between 1982-1986 and 1997-2001 in the District Health Boards of West Coast (46.3%; from 382 deaths to 205), Auckland (42.2%; from 2,762 deaths to 1,596) and Taranaki (41.7%; from 942 deaths to 549).

The smallest proportional decreases in the number of deaths from causes amenable to health care (less than 10%) were in Northland (5.6%; from 1,027 deaths to 969), Counties Manukau (7.2%; from 1,894 deaths to 1,757), Waitemata (8.6%; from 1,851 deaths to 1,691) and Bay of Plenty (9.3%; from 1,139 deaths to 1,033).

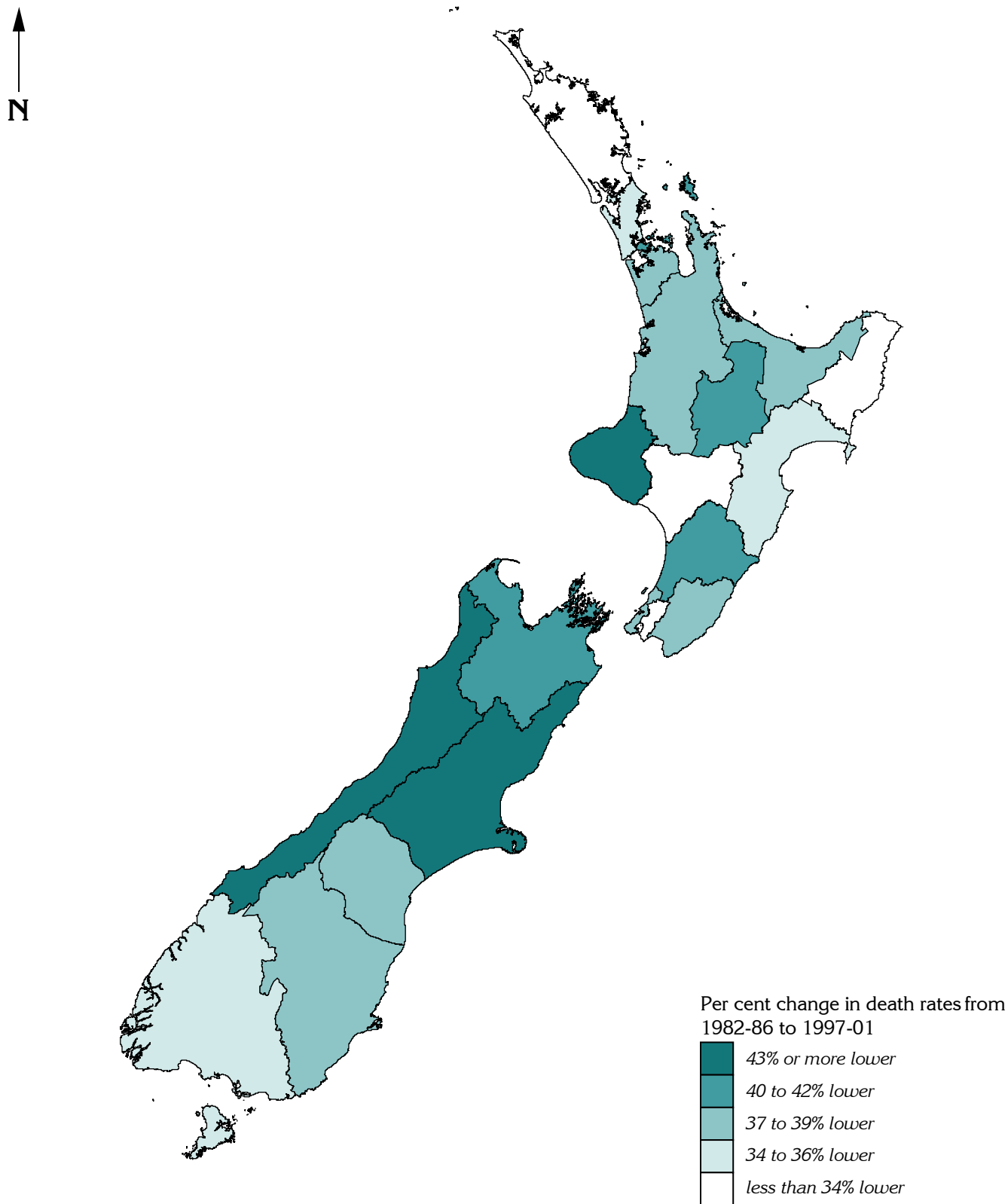
Table 9.9: Change in amenable mortality (0 to 74 years) by area, New Zealand, 1982-1986 and 1997-2001

District Health Board	Number		Per cent change	ASR		Per cent change	Rank	
	1982-86	1997-01		1982-86	1997-01		82-86	97-01
Auckland	2,762	1,596	-42.2	159.1	92.1	-42.1	12	16
Bay of Plenty	1,139	1,033	-9.3	156.9	94.7	-39.6	14	14
Canterbury	2,960	1,961	-33.8	143.2	80.7	-43.6	19	20
Capital and Coast	1,516	1,076	-29.0	144.3	88.2	-38.9	18	18
Counties Manukau	1,894	1,757	-7.2	166.6	101.2	-39.3	7	9
Hawke's Bay	1,208	878	-27.3	166.5	105.2	-36.8	8	6
Hutt	991	704	-29.0	152.4	101.9	-33.1	16	8
Lakes	762	586	-23.1	199.4	114.5	-42.6	2	2
MidCentral	1,300	897	-31.0	169.8	101.1	-40.5	5	10
Nelson-Marlborough	798	614	-23.1	140.3	83.7	-40.3	20	19
Northland	1,027	969	-5.6	169.8	113.1	-33.4	6	3
Otago	1,446	947	-34.5	148.8	92.4	-37.9	17	15
South Canterbury	516	348	-32.6	153.4	95.8	-37.5	15	13
Southland	864	623	-27.9	160.4	104.5	-34.9	10	7
Tairāwhiti	453	320	-29.4	198.8	133.1	-33.0	3	1
Taranaki	942	549	-41.7	170.3	89.6	-47.4	4	17
Waikato	2,181	1,713	-21.5	158.2	99.2	-37.3	13	11
Wairarapa	318	241	-24.2	160.3	98.4	-38.6	11	12
Waitemata	1,851	1,691	-8.6	120.8	76.8	-36.4	21	21
West Coast	382	205	-46.3	208.0	110.4	-46.9	1	4
Whanganui	608	423	-30.4	165.6	109.6	-33.8	9	5
Total	25,919	19,130	-26.2	155.2	94.2	-39.3	..	..

Map 9.2

Change in amenable mortality (0 to 74 years), New Zealand, 1982-1986 and 1997-2001

per cent change in age standardised rates from 1982-1986 to 1997-2001 by District Health Board



Details of map boundaries are in Appendix 1.4

Australian and New Zealand Atlas of Avoidable Mortality

9.5 Change in avoidable and amenable mortality by ethnicity

Between 1986 and 2001, ASRs for avoidable mortality for the three ethnic populations in the analysis aged 0 to 74 years decreased by an average of 37.4%, ranging from a decline of 42.5% for European/ others to 12.5% for Pacific peoples (Table 9.10, Figure 9.6). The number of deaths from avoidable causes fell by an average of 24.5% over the same period, ranging from an increase of 94.8% for Pacific peoples to a decline of 33.1% for the European/ others population.

The decrease in ASR over the period for European/ others of 42.5% (from 308.4 deaths per 100,000 population in 1986 to 177.4 in 2001) was much greater than for the other ethnic groups. For Māori, there was a fall of 27.0%, from 663.7 deaths per 100,000 population in 1986 to 484.3 in 2001. Pacific peoples recorded the smallest decline in ASR from avoidable causes, of 12.5%, over the

period, falling from 420.6 deaths per 100,000 population in 1986 to 368.1 in 2001.

The average decline in ASRs between 1986 and 2001 from causes amenable to health care was 41.3%, slightly higher than the decrease in avoidable mortality. The total number of deaths fell by an average of 28.3% over the period, ranging from an increase of 77.1% for Pacific peoples to a fall of 36.1% for European/ others.

The European/ others had the largest decline in ASR for amenable mortality, 45.7%, falling from 140.3 deaths per 100,000 population in 1986 to 76.2 in 2001. The ASR for Māori declined by 33.9% (from 289.3 deaths per 100,000 population to 191.2), and the decline for Pacific peoples was 23.4% (from 226.3 deaths per 100,000 population to 173.3).

Table 9.10: Change in avoidable and amenable mortality (0 to 74 years) by ethnicity, New Zealand, 1986 and 2001

Age (years)	Number		Per cent change	ASR		Per cent change
	1986	2001		1986	2001	
Avoidable mortality						
Māori	1,438	1,622	12.8	663.7	484.3	-27.0
Pacific peoples	249	485	94.8	420.6	368.1	-12.5
European/ others	9,720	6,507	-33.1	308.4	177.4	-42.5
Total	11,408	8,614	-24.5	332.9	208.3	-37.4
RR-Māori:European/ others	..	..	..	2.15**	2.73**	..
RR-Pacific:European/ others	..	..	..	1.36**	2.07**	..
Amenable mortality						
Māori	623	653	4.8	289.3	191.2	-33.9
Pacific peoples	131	232	77.1	226.3	173.3	-23.4
European/ others	4,408	2,818	-36.1	140.3	76.2	-45.7
Total	5,162	3,703	-28.3	151.1	88.7	-41.3
RR-Māori:European/ others	..	..	..	2.06**	2.51**	..
RR-Pacific:European/ others	..	..	..	1.61**	2.27**	..

Figure 9.6: Change in avoidable and amenable mortality (0 to 74 years) by ethnicity, New Zealand, 1986 and 2001

ASR per 100,000 population

