

## Chapter 2. Health Status

### Introduction

Health status has been measured in many ways. The difficulties of obtaining accurate information mean that a picture of the health of a population usually requires data from a variety of sources. These sources include data on mortality and morbidity and perceptions of health status. Nearly all indicators have some degree of subjectivity, and all have their strengths and weaknesses. For example mortality is an unequivocal measure and the 'ultimate' health outcome, but is a relatively rare event and takes no account of pain or disability. Indicators have been developed that are felt to be comparable across countries and cultures.

This chapter reports on the status of the population of Counties Manukau for some general health status measures, including life expectancy, mortality, self-reported health status and hospitalisation. The concepts of potentially avoidable mortality and hospitalisation are introduced and a broad overview of these health indicators for Counties Manukau is given. The analysis of health status contributes by informing the strategic direction for population health, the setting of priorities and allocation of resources. The next chapters continue the analysis of health status by examining differences associated with socio-economic status and age-specific differences in life cycle bands.

### Life Expectancy

The burden of disease and injury is not borne homogeneously across populations. Many factors may impact on each individual person at different ages. These combine to variously influence health, mental and physical ability, and length of life at each stage of life. This phenomenon is most understandably evident in life expectancy tables (Table 6).

**Table 6. Life expectancy at selected ages, by gender and ethnicity, New Zealand 1995-97**

Age	Non-Maori			Maori			Pacific			Pacific gap		Maori gap	
	M	F	Diff	M	F	Diff	M	F	Diff	M	F	M	F
0	75.3	80.6	5.3	67.2	71.6	4.4	69.8	75.6	5.8	5.5	5.0	8.1	9.0
1	74.7	80.0	5.3	67.0	71.4	4.4	69.5	75.1	5.6	5.3	4.9	7.7	8.5
15	61.0	66.2	5.2	53.4	57.7	4.3	55.8	61.4	5.6	5.2	4.9	7.6	8.5
45	32.8	37.1	4.3	26.2	29.4	3.2	28.0	32.8	4.8	4.8	4.4	6.7	7.8
65	15.8	19.3	3.5	12.2	14.5	2.3	13.4	16.6	3.1	2.4	2.8	3.6	4.8
85	5.1	6.2	1.1	3.9	5.2	1.3	4.4	5.6	1.2	0.7	0.6	1.1	1.0

Source: *Our Health Our Future 1999*, p112. "diff" = difference male to female. Estimated years of life at each age calculated based on the current New Zealand age-ethnicity-specific mortality rate. Maori and Pacific "gap" compared to Non-Maori group. Note that Non-Maori here includes all ethnicities apart from Maori, including Pacific.

Both across Auckland, and even within Counties Manukau there are large differences in life expectancy by different groups.

**Table 7. Life expectancy at birth, Auckland and New Zealand, 1996**

	Male	Female
North Auckland	78.3	84.3
West Auckland	76.4	83.0
Central Auckland	73.9	79.8
<b>Counties Manukau</b>	<b>73.0</b>	<b>78.7</b>
New Zealand	74.2	79.5

**Table 8. Life expectancy at birth, by ethnicity, Northern Region 1996**

	Male	Female
Pacific	68.8	76.2
Maori	67.1	72.2
Other	76.6	81.8
Total	75.1	81.4

Source: Health Funding Authority. *People in the Northern Region*. 1998. CM excludes Otahuhu.

Otara has made the largest percentage improvement in life expectancy over the past 10 years in Counties Manukau (Table 9). There remains however a three year gap to people living in Mangere and Papatoetoe, and more to other areas of Counties Manukau.

**Table 9. Life expectancy at birth, Counties Manukau 1986 - 1996**

Catchment zone	Male (years)				% change 86-96	Female (years)				% change 86-96
	1986	1991	1996			1986	1991	1996		
Howick Pakuranga	74.5	74.9	76.4		3%	80.5	80.7	81.8		2%
Beachlands Maraetai	75.4	75.8	77.7		3%	81.4	81.6	83.0		2%
Otara	64.8	66.4	68.3		5%	71.1	72.6	74.3		5%
Mangere Papatoetoe	69.9	70.2	71.6		2%	76.0	76.2	77.4		2%
Manukau Manurewa	71.7	71.2	72.3		1%	77.8	77.2	78.0		0%
Takanini Papakura	71.4	72.0	73.0		2%	77.5	77.9	78.6		1%
South Rural	71.0	73.0	73.5		4%	77.1	78.8	79.2		3%

Source: SNZ population projections 1998. Otahuhu included in Mangere Papatoetoe area.

Significant socio-economic and ethnic differentials in life expectancy from birth are apparent (Table 10). Males living in the least deprived areas have a life expectancy of 78.1 years, while those in the most deprived areas have a life expectancy of 68.9 years. This shows a statistically significant differential of 9.2 years. The corresponding results for females shows a differential of 6.7 years. The association of gender, ethnic and socio-economic factors with survival chances is most vividly illustrated by contrasting extreme groups. European females living in the least deprived area have a life expectancy of 82.3 years compared to a Maori male living in the most deprived area, who has a life expectancy of just 63.3 years. This shows a statistically significant differential of 19 years.

**Table 10. Life expectancy at birth, by gender, ethnicity and socio-economic grade of place of residence, New Zealand 1996-97**

NZDep96 decile	Male (years)			Female (years)		
	All NZ	European	Maori	All NZ	European	Maori
<b>1</b>	78.1	78.4	-	82.1	82.3	-
<b>2</b>	77.6	77.7	-	81.5	81.9	-
<b>3</b>	76.5	76.9	-	81.2	81.6	-
<b>4</b>	75.7	76.2	-	81.1	81.6	-
<b>5</b>	75.1	75.9	-	80.6	81.3	-
<b>6</b>	74.5	75.3	-	79.9	80.7	-
<b>7</b>	73.9	74.8	70.7	79.6	80.6	76.1
<b>8</b>	72.7	73.6	66.1	78.5	79.7	70.9
<b>9</b>	71.4	73.0	66.1	77.8	79.8	70.9
<b>10</b>	68.9	71.5	63.3	75.4	78.2	68.1

Source *Our Health Our Future 1999*. Ministry of Health. 1999: NZDep96 explained in detail in Chapter 3. Note: European includes Other ethnicities; decile 1 = least deprived, decile 10 = most deprived. For Maori deciles 1-7 and 8-9 were combined to give large enough numbers for analysis.

There are difficulties in interpretation when area of residence is used with life expectancy (as in Table 9 and with NZDep96 in Table 10). Life expectancy is a function of combined accumulation of risk over the course of a lifetime. Place of residence is cross-sectional - people move (often frequently), and such movement can be associated with health factors (eg moving to a retirement home).

## Independent Life Expectancy

A second concept to consider is that of independent life expectancy (ILE) - the number of years that a person can expect to live independently without a disability that needs assistance. Although females live longer than males, males enjoy a greater proportion of their lives in independence than females (Table 11). Differences in experience across ethnic groups are also apparent.<sup>1</sup> Epidemiologists and economists have extended the LE and ILE concepts to assist in measuring the burden of disease in populations.

**Table 11. Life Expectancy and Independent Life Expectancy at selected ages, by gender and ethnicity, New Zealand 1995-97**

		Non-Maori		Maori	
		Male	Female	Male	Female
At birth	Life expectancy	75.3	80.6	67.2	71.6
	ILE	65.6	68.9	57.3	58.7
At age 15	Life expectancy	61.0	66.2	53.4	57.7
	ILE	52.3	55.1	44.8	45.4
At age 45	Life expectancy	32.8	37.1	26.2	29.4
	ILE	25.4	28.0	20.0	20.0
At age 65	Life expectancy	15.8	19.3	12.2	14.5
	ILE	9.9	11.9	7.4	7.5

Source *Our Health Our Future 1999*. Ministry of Health. 1999. Note that "Non-Maori" includes European, Pacific and other ethnicities

## Mortality

There were 2046 registered deaths in Counties Manukau in 1998, a rate of 536 per 100,000. Although this is much lower than the New Zealand rate of 711 per 100,000, the younger age structure of the Counties Manukau population conceals the true differences. Table 12 shows the rates age standardised. There are marked differences by ethnic group, with Maori and Pacific people having twice the mortality (when adjusted for age) as the European and Other group. The mortality rates in Counties Manukau for Maori and Pacific people were notably higher than the rates for New Zealand as a whole, while European and Other people had a lower mortality rate.

**Table 12. All-cause age-standardised mortality rates by ethnic group 1998**

	Maori	Pacific	European & other	Total
<b>Counties Manukau</b>	1,254	1,353	597	696
<b>New Zealand</b>	1,159	1,195	666	711
<b>"Excess" deaths</b>	64	105	-172	--

Source: NZHIS. Rates are age-standardised per 100,000 ethnic-specific population. 1998 data is provisional. "Excess deaths" are the number of deaths that would be required (had CM had the same population age structure as NZ) to bring the CM age-standardised rate to the NZ rate.

Overall mortality tends not to be used much as a health measure - after all we all have to die at some time. The next section examines premature mortality, and in particular avoidable deaths within that.

<sup>1</sup> For example, inter-gender differences are far less marked for Maori, with *Our Health Our Future 1999* providing a complex analysis of the many variations in life and independent life expectancy shown in the table. (pp243-5)

## Potentially avoidable mortality (PAM)

One way to estimate the potential for improvement in health is by classifying disease and injury codes into avoidable and unavoidable categories. The concept of avoidability here is extended to include all conditions potentially preventable through population-based interventions as well as those responsive to preventive and curative intervention at the level of the individual. The analysis of potentially avoidable mortality and morbidity depends on two processes: the accurate assignment of cause of death or hospitalisation and secondly categorical attribution of each cause as avoidable or unavoidable. A list of avoidable mortality was first drawn up in 1983 and variations of this list have been developed and refined for New Zealand.<sup>2</sup> The approach has been extended to include avoidable hospitalisations (further discussed below). There are a number of points that should be made about this categorisation:

- Categorising death as avoidable or unavoidable clearly oversimplifies reality and there is substantial overlap between categories.
- Potentially avoidable mortality (PAM) should not be interpreted as mortality that can be realistically prevented in all cases, at least not in the short to medium term. Road traffic accidents are considered avoidable but the total prevention of deaths may well involve a greater trade off or sacrifice of mobility for health than society is willing to make.
- The upper age limit has been set at 75 years - it is increasingly arbitrary to categorise causes of death in the elderly.
- A decline in the rate of one category does not necessarily mean an increase in the other. Instead death could be postponed until after 75 years.

Potentially avoidable mortality in New Zealand declined in the 0-74 age group by 38% between 1981 and 1997 compared with a decline of only 9% in unavoidable mortality. Yet in 1996-7 almost 70% of deaths in the 0-74 year age range were still being assessed as potentially avoidable. This picture is similar in Counties Manukau. Overall PAM rates in Counties Manukau are similar to New Zealand. (Table 13)

**Table 13. Avoidable and unavoidable mortality rates, ages 0 – 74, 1996-7**

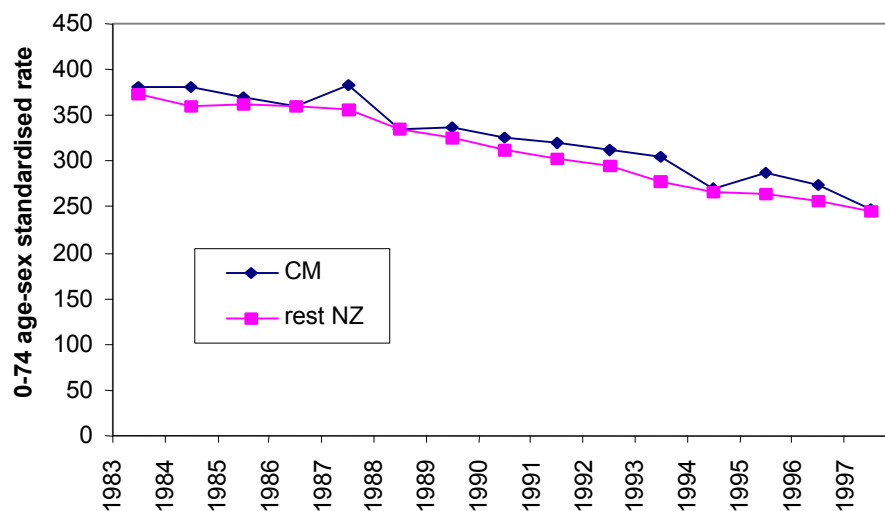
	<b>Counties Manukau Number/yr</b>	<b>Counties Manukau Rate/100,000</b>	<b>New Zealand Rate/100,000</b>
Potentially avoidable mortality	798	257	251
Unavoidable mortality	332	110	107

Rates age-standardised per 100,000 0-74 population. Rates are averages for 1996 and 1997.

About half of potentially avoidable deaths are considered to be potentially responsive to primary prevention strategies, almost one quarter could be avoided by effective medical and surgical treatment of established disease, and the remaining quarter are sensitive to early intervention, typically in the primary care setting. Males have a higher burden of potentially avoidable mortality than females. The gender difference is largely attributable to diseases and injuries amenable to primary prevention, with the largest single contribution coming from ischaemic heart disease. PAM rates are falling both in Counties Manukau and in New Zealand as a whole. (see Figure 11)

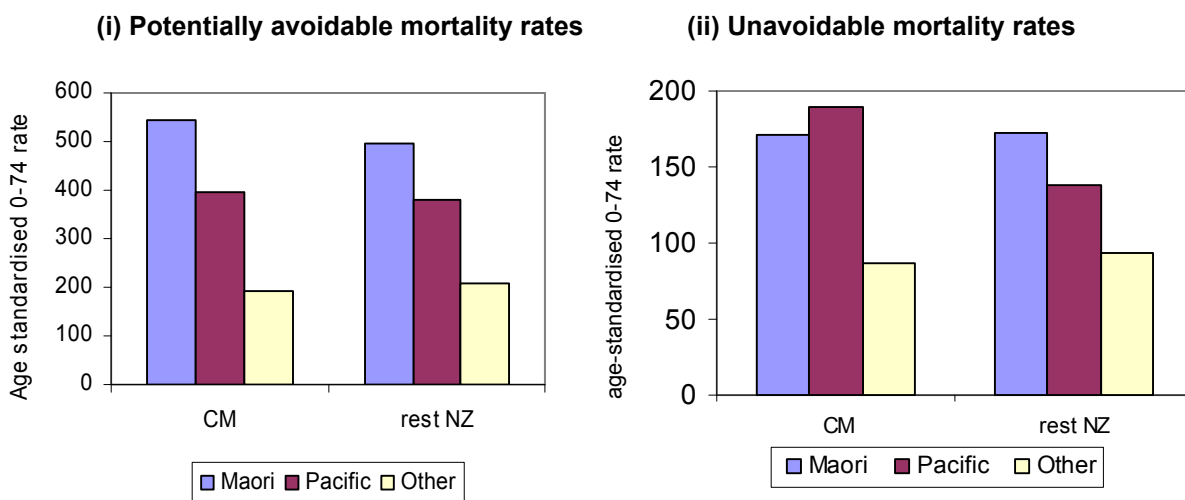
<sup>2</sup> See chapter 10 and appendix p423 in *Our Health Our Future 1999*. All NZ figures quoted here are from *OHOF*

**Figure 11. Potentially avoidable mortality rates for people under 75 in Counties Manukau and the rest of New Zealand 1983-1997**



Potentially avoidable mortality rates vary considerable across different ethnic groups. Maori have the highest rates followed by Pacific people (Figure 12). Counties Manukau ethnic-specific rates are similar to those of the rest of New Zealand (Figure 12 and last line of Table 14).

**Figure 12. Mortality rates for people under 75 in Counties Manukau and the rest of New Zealand by ethnic group 1996-1997**



Rates are per 100,000 0-74 population, age-standardised to the New Zealand population

The picture for unavoidable mortality rates is somewhat similar. The rates are lower for all groups and the gap is smaller, but the difference between Maori and Pacific and the Other group remains. The Pacific population has the highest rate of unavoidable mortality in CM and is much higher than for Pacific people elsewhere in New Zealand. The similar proportioned ethnic group gap for unavoidable mortality implies that it is not just access to health care, health promotion and health education (that is, the reasons that the causes of death were originally assigned to the potentially avoidable category) that is driving the mortality gap.

People living in Counties Manukau tend to have equal or lower PAM rate than New Zealand overall, and for the most common conditions that make up PAM (Table 14). The high diabetes premature mortality rates in Maori in Counties Manukau is notable (see also page 115 in Chapter 7), and lung cancer and CORD also have higher rates in Maori. This will reflect high smoking rates in the past in Counties Manukau (see also page 146 in Chapter 7).

**Table 14. Potentially avoidable mortality: age-standardised rates for Counties Manukau and New Zealand for top 10 conditions.**

	Age-standardised rates, 1996-7*					
	Counties Manukau			New Zealand		
	Maori	Pacific	Other	Maori	Pacific	Other
Ischaemic heart disease	150	118	53	152	116	63
Lung cancer	111	42	20	75	34	23
Colo-rectal cancer	11	11	19	15	14	19
CORD	51	13	10	34	19	15
Suicide	16	9	12	18	8	15
Motor vehicle crashes	19	12	12	24	13	12
Stroke	10	30	12	24	34	12
Breast cancer	17	25	16	18	17	12
Diabetes	72	37	4	49	37	5
Skin cancer	5	0	6	1	0	5
Top ten conditions	461	297	164	529	404	219
All PAM	573	416	203	711	567	317

\*Rates are per 100,000 0-74 year olds and have been standardised to the total 1996 NZ population. CORD = chronic obstructive respiratory disease. PAM = Potentially avoidable mortality

## Disability adjusted life years

The disability adjusted life year is an integrated measure of population health. It attempts to incorporate loss of life years and years of healthy life lost. By assigning socially determined values to years of life lost, from both premature death and disability, it has been possible to develop the 'disability adjusted life year' or DALY.<sup>3</sup> One caveat is that the system is subjective and may not take into account the interactions between specific aspects of ill health and other social conditions. Conditions and illnesses acquired earlier in life are rated higher due to the number of years estimated as lost from the average life span. DALYs lost vary across age, gender and ethnic groups (Table 15).

**Table 15. Percentage apportionment of total DALYs lost by age, gender and ethnic group, New Zealand, 1995-97**

Age (years)	Maori			Non-Maori			Total
	Male	Female	Total	Male	Female	Total	
0 - 14	20	19	20	8	6	7	9
15 - 24	13	13	13	7	7	7	8
25 - 44	22	22	22	14	15	15	16
45 - 64	30	28	29	27	23	25	26
65 +	14	18	16	43	48	46	42
Total	100%	100%	100%	100%	100%	100%	100%

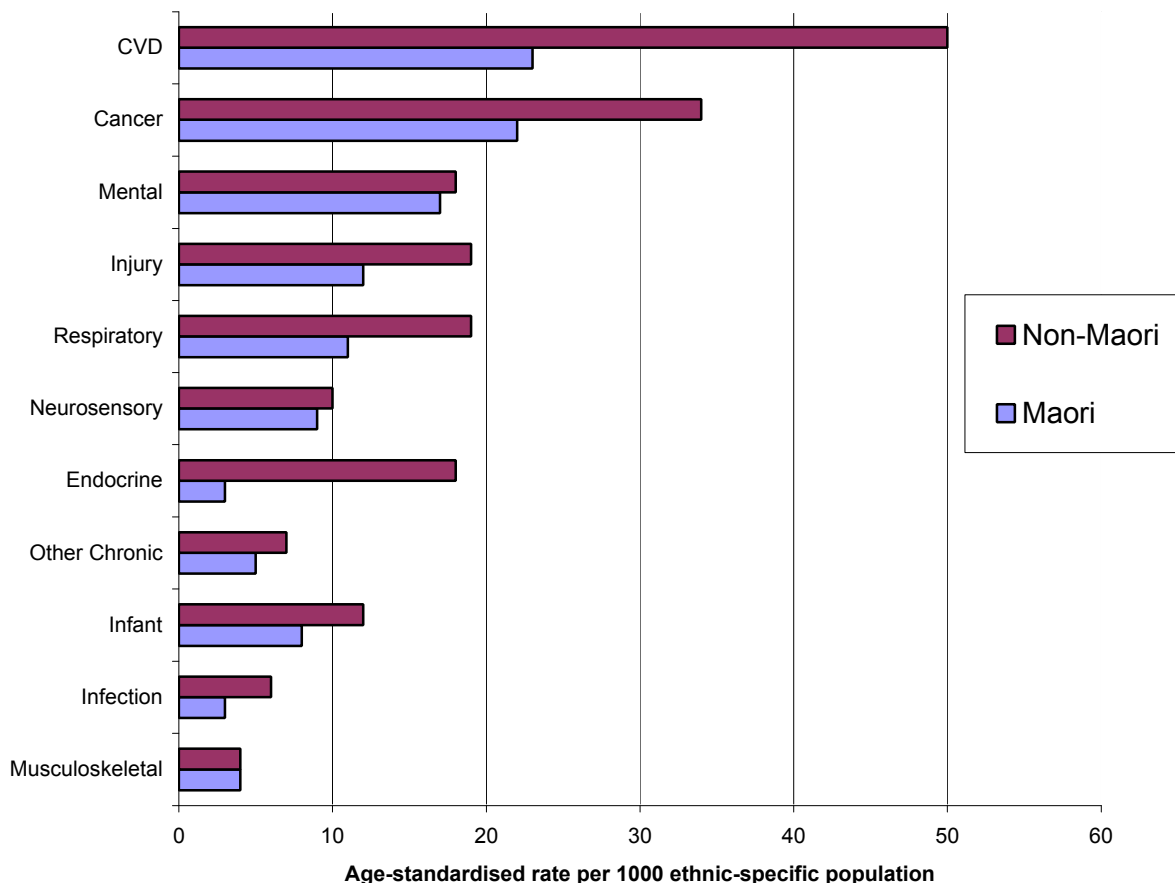
Source: *Our Health Our Future 1999*, p266.

Nine percent of the total burden of disease and injury impacts in childhood, though this varies from 20% for male Maori to 6% for female Non-Maori. Most (42%) of the total burden of disease and injury impacts on the elderly, varying from 14% for male Maori to 48% for female Non-Maori. The remaining burden impacts in other age groups,

<sup>3</sup> See *Our Health Our Future 1999* pp 251-255 for more detail. Note that the values used are not NZ-specific, but relate to international studies

varying from 7% in Non-Maori 15 to 24 years olds to 30% for male Maori aged 45 to 64 years. This stark difference between Maori and non-Maori is further highlighted when examining the lost DALY burden by cause. (Figure 13) Individual causes are explored in more detail in later chapters.

**Figure 13. DALYs lost, by ethnicity and cause group, New Zealand 1996.**



Source: *Our Health Our Future 1999*, p266.

## Quality of Life

As well as measuring health-related quality of life through professional assessment of morbidity, or by assessment of functional limitation (disability) it can also be measured by surveying an individual's perceptions of his or her own state of health. Subjective, or self reported health status is not a substitute for more objective indicators but rather complements these measures: self reports of health introduce a consumer perspective into population health monitoring and reveal dimensions of health that may be inaccessible to the more traditional measures.

The SF-36 is one of the most widely used instruments, an internationally recognised and validated health status assessment questionnaire. It was used in the Northern Region Health Survey<sup>4</sup> and the New Zealand Health Survey 1996-97<sup>5</sup>. Once collected, the answers to '36 questions' that are designed to measure physical and mental health status

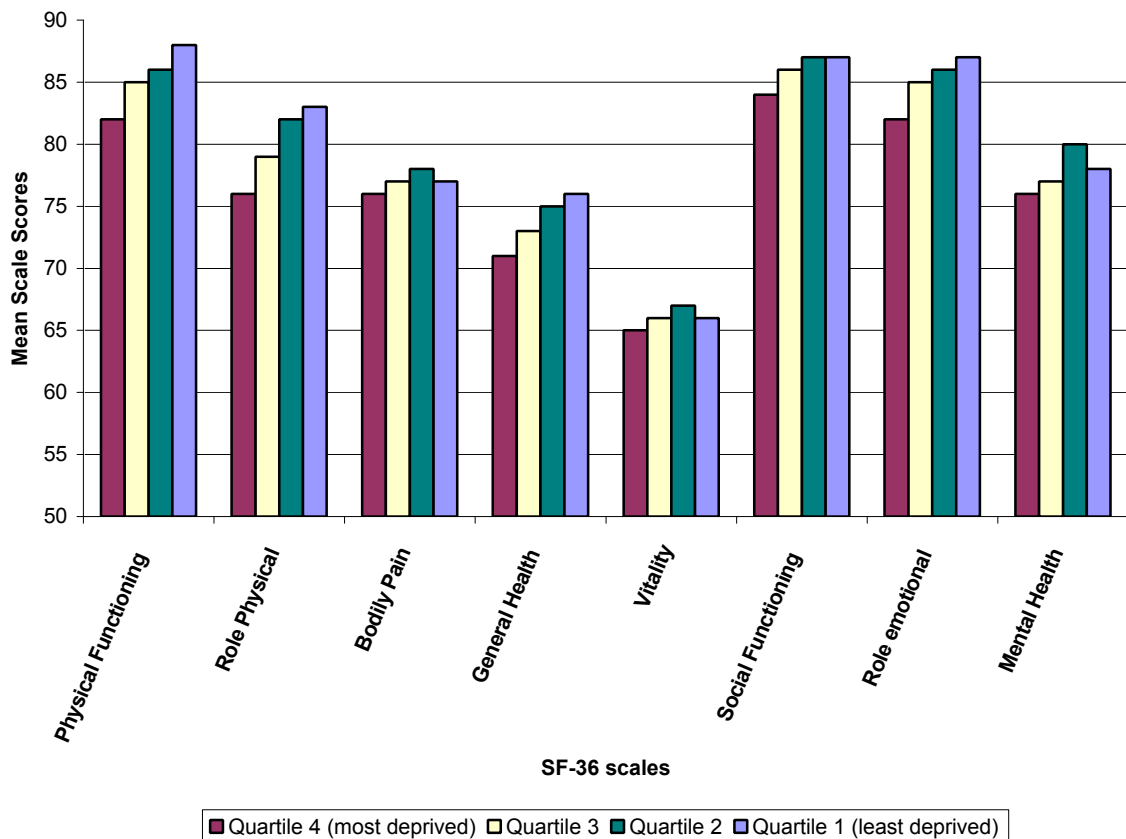
<sup>4</sup> Parr A, Whittaker R, Jackson G. *The Northern Region Health Survey 1996/97*. Auckland: HFA Northern Office, 1998.

<sup>5</sup> Ministry of Health. *Taking the pulse: The 1996/97 New Zealand Health Survey*. Wellington: MOH, 1999.

within eight health scales are processed according to a standardised protocol.<sup>6</sup> The SF-36 can be used as a measure of community health status.

In the Northern Region Health Survey Counties Manukau people had the lowest average score on 6 of the 8 scales, scoring particularly low on the physical functioning scale. The lower scores are strongly correlated to relative levels of deprivation – the New Zealand Health Survey used the NZDep96 as a surrogate measure of socio-economic status (see Chapter 3) to show this very clearly (Figure 14).

Figure 14. SF-36 profiles by NZDep96 quartile, New Zealand 1996-97



Source *Our Health, Our Future 1999*, p158 - base data: NZHS 1996-97. Age and gender standardised

## Potentially avoidable hospitalisations

The concept of avoidability can be extended from fatal to non-fatal outcomes. A potentially avoidable hospitalisation (PAH) signals the occurrence of a severe illness or injury that could, theoretically, have been avoided. Potentially avoidable hospitalisations fall into two subcategories<sup>7</sup>:

- Preventable hospitalisations - hospitalisations resulting from diseases preventable through population based health promotion strategies.
- Ambulatory sensitive hospitalisations - hospitalisations resulting from diseases sensitive to prophylactic or therapeutic interventions deliverable in the primary health care setting.

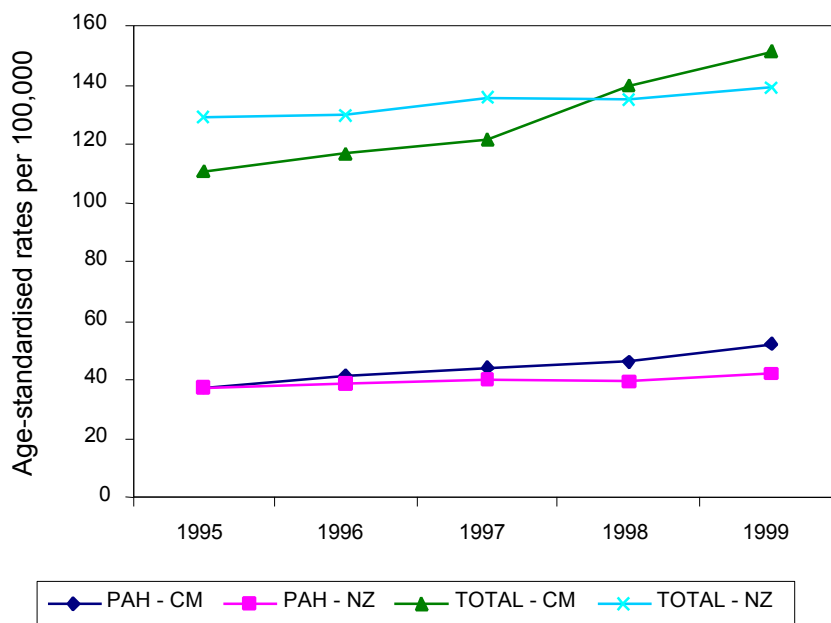
One can also add hospitalisations due to injury (often avoidable) to PAH. That has not been done here; injuries are covered in Chapter 4 The life cycle.

<sup>6</sup> A more detailed description appears in *Our Health, Our Future 1999* (p.150)

<sup>7</sup> More detail in *Our Health, Our Future 1999* (chapter 10), including a full listing of conditions in the appendix.

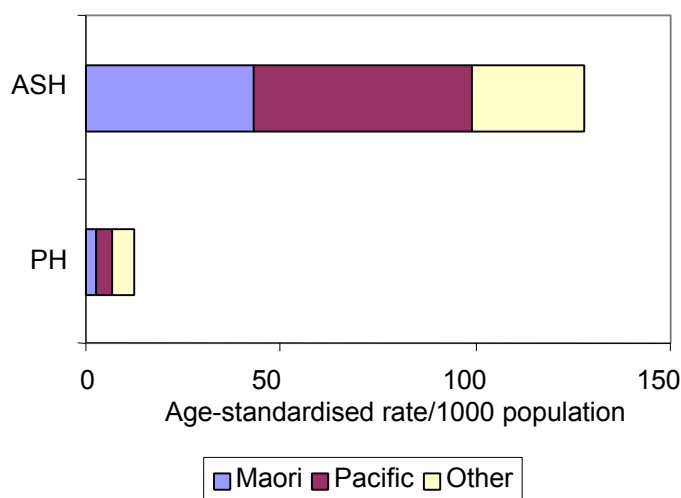
Overall hospitalisation has increased in Counties Manukau between 1995 and 1999, rising well above the rate for New Zealand as a whole in 1999 (Figure 15). From 1995-1999 the rate of potentially avoidable hospitalisation in Counties Manukau has risen, and appears to be diverging from New Zealand.

**Figure 15. Age-standardised rate of total and potentially avoidable hospitalisations for Counties Manukau and New Zealand, 1995-99.**



The proportion of ambulatory sensitive admissions in Counties Manukau (as in the rest of New Zealand) is much higher than preventable hospitalisations<sup>8</sup>. There are a disproportionate number of Maori and Pacific people represented among the number of ambulatory sensitive admissions (Figure 16).

**Figure 16. Ambulatory sensitive (ASH) and preventable (PH) hospitalisations by ethnic group**



<sup>8</sup> More detail in *Our Health, Our Future 1999* (chapter 10 p326 & appendix p427)

Maori and Pacific people in Counties Manukau have a high proportion of their hospital stays classified as potentially avoidable - 38% of all Maori hospitalisations are PAH, and 40% of all Pacific hospitalisations (Table 16).

**Table 16. Number and percentage of PAH discharges, Counties Manukau residents, 1999 by age and ethnicity**

	Number of PAH hospitalisations in CM, 1999				
	0-14	15-44	45-64	65+	Total
Maori	1,652	956	726	307	3,641
Pacific	2,229	937	811	542	4,519
Other	2,096	1,893	2,528	4,358	10,875
Total CM	5,977	3,786	4,065	5,207	19,035
<b>as % of all discharges</b>					
Maori	50%	25%	39%	44%	38%
Pacific	54%	23%	42%	47%	40%
Other	38%	20%	32%	38%	32%
Total CM	46%	22%	35%	39%	34%
Rest of NZ	42%	18%	30%	35%	30%

Interpretation example: of all hospitalisations to Maori aged 0-14, 1,652 or 50% were PAH, dropping to 956 or 25% in the 15-44 age group.

The rate of potentially avoidable hospitalisations is highest in infancy, although avoidable causes account for less than 20% of the total hospitalisations in infancy (Table 17). For children aged 1-14 the rates of avoidable and unavoidable hospitalisations are much lower, yet avoidable causes account for a high proportion of the total. Cellulitis is a surprisingly common cause of PAH for people aged 15-44. From middle age the PAH rate begins to rise with the emergence of chronic diseases reflecting cumulative exposure to smoking, poor diet and physical activity over many decades. This is explored further in Chapter 4 within each age group.

**Table 17. Potentially avoidable hospitalisations, age-specific rates per 1000 population, 1999**

	<1	1-14	15-44	45-64	65+	Total
Northland	473	108	112	222	460	185
North Shore	160	66	72	91	301	105
West Auckland	234	79	84	124	329	114
<b>Counties Manukau</b>	<b>426</b>	<b>105</b>	<b>100</b>	<b>151</b>	<b>394</b>	<b>143</b>
Central Auckland	230	86	74	112	338	113
Waikato	386	98	94	160	445	152
New Zealand	330	96	89	140	382	140

Definition of PAH as per *Our health our future*, Chapter 10 p326 and appendix p427.

The top 20 conditions that account for over 90% of the total avoidable hospitalisations are listed below. Pneumonia is the condition with the highest rates for both the Maori and Pacific people (see also Chapter 7, page 134). Angina is the condition with the highest admission rates for the Other group (see Chapter 7, page 124). Counties Manukau has higher rates than New Zealand for all conditions apart from ischaemic heart disease and dental conditions.

**Table 18. Age-standardised potentially avoidable hospitalisation rates for top twenty conditions, Counties Manukau & rest of New Zealand 1999**

	Counties Manukau rate/100,000				Rest NZ
	Maori	Pacific	Other	Total	Total
Angina	994	745	783	810	638
Respiratory infections – pneumonia	1037	1304	315	508	287
Cellulitis	460	656	252	355	240
Gastroenteritis	243	439	288	291	226
ENT infections	273	249	313	282	265
CORD	548	727	209	276	229
Asthma	400	529	180	261	233
Ischaemic heart disease	259	339	233	248	258
Skin cancers	21	2	276	246	174
Congestive heart failure	565	457	142	199	175
Stroke	189	309	157	174	159
Respiratory infections - bronchiolitis	216	291	50	164	101
Kidney/urinary infection	230	361	123	159	124
Respiratory infections – other	160	257	121	152	124
Dental conditions	128	168	131	139	151
Epilepsy	150	198	100	124	127
Diabetes	309	369	73	116	89
Sexually transmitted diseases/ectopic pregnancy	165	152	72	105	76
Peptic ulcer	135	210	71	87	43
Lung cancer	134	82	56	65	54

Rates per 100,000 age-standardised to NZ population. CORD = chronic obstructive respiratory disease.

## Hospital Utilisation Expectancy

Public hospital discharge data in conjunction with mortality rates can be used to calculate Hospital Utilisation Expectancies (HUE). This measure estimates expected lifetime hospital utilisation and can be used as an indicator of both health status and resource use. It yields the number of days while still surviving, that a person of a particular age can expect to spend in hospital should they experience the then current age-specific hospitalisation rate<sup>9</sup>.

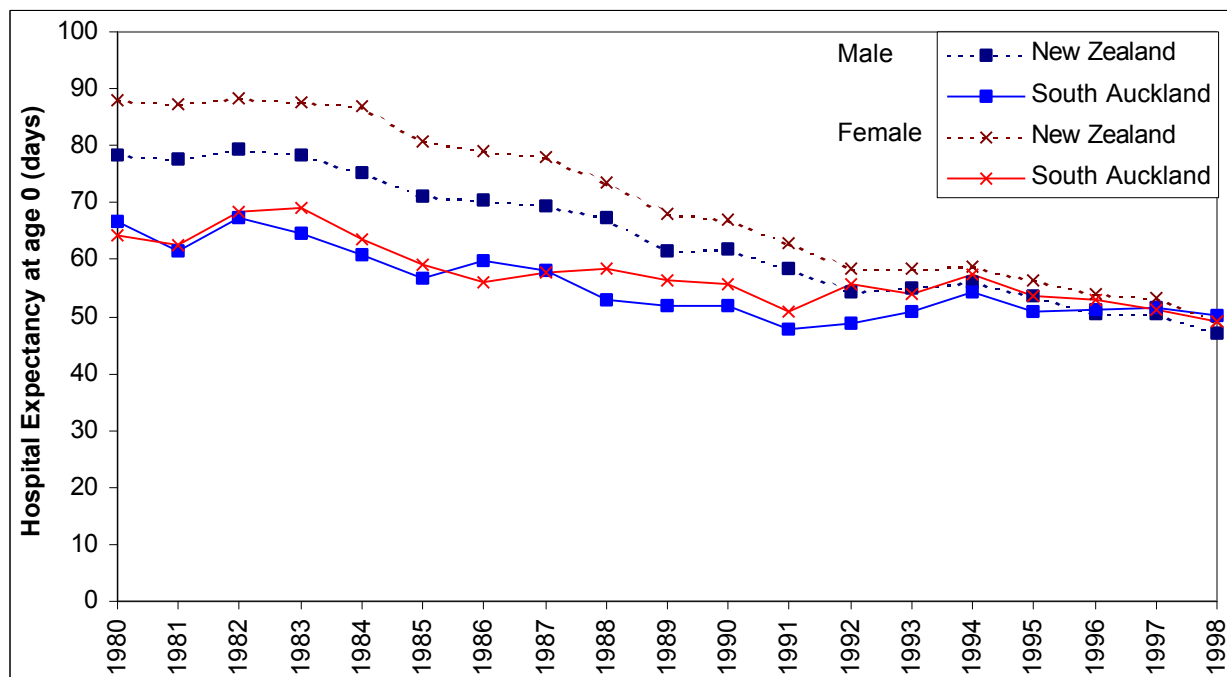
At the beginning of the 1980s, on average a Counties Manukau resident might expect to spend around 65 days in a public hospital over the course of their lifetime (Figure 17). This dropped to less than 50 days by 1998, despite the increase in life expectancy over that period (see page 21). The main reasons are improving medical technology, medication and treatments over that period. This has resulted in a markedly reduced length of stay per episode of care, and fewer inpatient episodes as ambulatory care continues to increase. The coming together of the male and female rates is a further illustration of this. Maternity confinements have reduced markedly, with the average length of stay for all maternity patients at South Auckland Health now at 2.0 days. Reducing fertility rates will also be playing a part as women have fewer pregnancies over the course of a lifetime.

It is also worth examining Figure 17 as an illustration of macro health politics. In the early 1980s there was a gross health funding disparity between the rapidly growing Auckland metropolitan area and the rest of the country (particularly the South Island). This led to a marked difference in hospital bed supply, and thence utilisation, with no

<sup>9</sup> Data from Katzenellbogen J, et al. Hospital Utilisation Expectancies. In press. Our thanks to the Population Studies Unit of Waikato University for the use of this work.

apparent difference in health outcomes like mortality. With the introduction of the Population Based Funding Formula (PBFF) in 1983, with a gradual move to equitable funding by 1994 or so, the HUE lines between the rest of NZ converge. By the time the Regional Health Authorities took over the health purchasing function from the Area Health Boards in 1993 the inequity in hospital bed supply was largely over. The final chapter in the story was elective surgery rates, which is discussed further in the surgical utilisation section.

Figure 17. Lifetime Hospital Utilisation Expectancy, 1980-1998



Source: Katzenellbogen et al; base data from NZHIS. HUE is the number of days a person would expect to spend in hospital should they experience the current age-specific hospitalisation rate and mortality rate. "South Auckland" here excludes Otahuhu

## Summary

Health indicators between Counties Manukau and New Zealand differ, as do health indicators within Counties Manukau itself. People living in Counties Manukau can expect to live about a year less than in New Zealand as a whole. People living in Otara live 5-6 years less than those living in the rest of New Zealand do. Gender and ethnic differences exist in life expectancy. Using the DALY health indicator it becomes clear that the burden of disease for Maori and Pacific peoples falls disproportionately on the young. The other ethnic groups have a large proportion of their burden of disease in the elderly (over 65 years). Although potentially avoidable mortality rates are similar in Counties Manukau and New Zealand as a whole potentially avoidable hospitalisation rates vary greatly. Counties Manukau have more hospitalisations than New Zealand for almost all potentially avoidable conditions. Maori and Pacific people have particularly high hospitalisation rates. Over the past 20 years the amount of time Counties Manukau people might expect to spend in hospital over the course of their lifetime has dropped by 25%.

## Chapter 3. Health Inequalities

### Introduction

Good health is not evenly spread throughout our society. Research on health inequalities suggests that despite the influence of a range of factors it is low socio-economic status that accounts for most of the differences in health. Poor people get ill more often and die sooner.

New Zealand's most definitive reference on such matters, *The Impact of Economic and Social Factors on Health*<sup>10</sup> is in agreement finding that the major determinants of health status in New Zealand, as in every other country, are economic and social in origin. This 1992 publication was followed by work from North Health<sup>11</sup> and the National Health Committee<sup>12</sup>. Cancer deaths due to smoking occur more than three times as often amongst New Zealand men in the lowest education and income bracket as those with the highest income and education<sup>13</sup>. In the 1992/3 Household Health Survey, people with incomes of less than \$20,000 per year were more than three times as likely as people earning more than \$30,000 a year, to report their health was "not so good" or "poor"<sup>14</sup>. The range of socio-economic variables impacting on community health status include income, education, social class, unemployment, gender, family structure, geographical area, housing, and transport. This can be a two-way relationship - health status can affect socio-economic status.

Inequalities in life expectancy have remained unchanged or even widened in recent decades in New Zealand, the UK and the USA. Even when there is a commitment to reduce inequalities ways of doing so have proved elusive. Programmes to reduce inequalities have been wide-ranging and have focused on different areas including promoting healthy lifestyles; improving living conditions; increasing empowerment; increasing social networks and integration; improving access to essential facilities and services and finally encouraging macro-economic and cultural change.

The report of an independent inquiry into inequalities in health in the UK (1998) made the following recommendations:

- All policies likely to have a direct or indirect effect on health should be evaluated in terms of their impact on health inequalities
- All those policies should be formulated to favour the less well off and so where possible will reduce health inequalities.
- Priority should be given to the health of women of child-bearing age, expectant mothers and young children.
- Further steps should be taken to reduce income inequalities and improve the living standards of poor households.

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<sup>10</sup> Nuthall J (ed) *The impact of economic and social factors on health*. Wellington: Public Health Association of New Zealand, 1992 and its companion volume *The Bibliography of relationships between economic and social factors in health*.

<sup>11</sup> Jackson G, Kelsall L, Parr A, Papa D. *Socio-economic inequalities in health care*. North Health; 1998

<sup>12</sup> National Health Committee. *The social, cultural and economic determinants of health in New Zealand: Action to improve health*. National Health Committee 1998.

<sup>13</sup> Pearce N, Bethwaite P. Social class and male cancer mortality in New Zealand. *NZ Med J* 1997; 110:200-2.

<sup>14</sup> Ministry of Health. *Healthy New Zealanders. Briefing papers for the Minister of Health*. 1996.

Health services interventions to tackle health inequalities have to date been poorly evaluated. Most of these interventions have been directed at improving both access to and uptake of preventive health care or the promotion of healthy lifestyles. Despite the lack of evidence in this area some conclusions can be drawn. Providing information alone appears to be effective in improving health, but only in people with already higher socio-economic status. Combining the provision of information with personal support appears more effective in lower socio-economic groups.

## Socio-economic factors

*The Impact of Economic and Social Factors on Health* makes reference to the ground breaking research of Reinken and others<sup>15</sup> who were the first in New Zealand to use a set of census variables and census data, to describe what they called ‘pockets of misery and pockets of bliss’. Thus with geographically defined areas of need so clearly delineated other New Zealand researchers were able to demonstrate the clear and uncontested correlation between lower socio-economic status and lower personal health status.

An updated spatial method to derive a census-based small area index of deprivation, the New Zealand Deprivation Index 1991 (NZDep91), is the successor to this work, closely followed by the ‘NZDep96’<sup>16</sup> NZDep96 is a census based small area index of deprivation, with a relative deprivation score assigned to each meshblock in New Zealand. A meshblock is the smallest geographic unit defined by Statistics New Zealand and contains a median of 90 people.<sup>17</sup> The variables that make up NZDep96 are listed in order of importance in Table 19.

**Table 19. Census variables included in the NZDep96**

Domain of deprivation	Description – Census96 variable used in assessment
Communication	Proportion of people with no access to a telephone
Income	Proportion of people aged 18-59 receiving a means tested benefit
Employment	Proportion of people aged 18-59 who are unemployed
Income	Proportion of people living in households with equivalised household income below a defined income threshold.
Transport	Proportion of people with no access to a car
Support	Proportion of people aged < 60 living in a single parent family
Qualifications	Proportion of people aged 18-59 without any qualifications
Own Home	Proportion of people not living in own home
Living Space	Proportion of people living in households below equivalised bedroom occupancy threshold

The deprivation index applies to areas, not people, and is thus useful in including the contextual as well as compositional variables affecting socio-economic status. The area index is also used as a proxy for individual socio-economic status when individual level data on income, education and occupation are not available. Caution must be exercised when used in this way – heterogeneity within meshblocks, and certainly within Census Area Units (perforce the unit of analysis for hospital data for example) mean that any socio-economic gradient present will be under-estimated. NZDep96 may also be less effective in the elderly population (as are many socio-economic status measures). Also

<sup>15</sup> Reinken J et al. *Health and equity*. Wellington: Dept of Health, 1985.

<sup>16</sup> Salmond C et al. *NZDep96 index of deprivation - instruction book*. Wellington: Health Services Research Centre 1998

<sup>17</sup> Ministry of Health. *Our health our future. The health of New Zealanders 1999*. Wellington: Ministry of Health.

note that the scores derived by the NZDep96 process are relative not absolute - they are rankings rather than exact measures.

### Counties Manukau compared to rest of New Zealand

The NZDep96 can be used to analyse deprivation by area (Table 20).

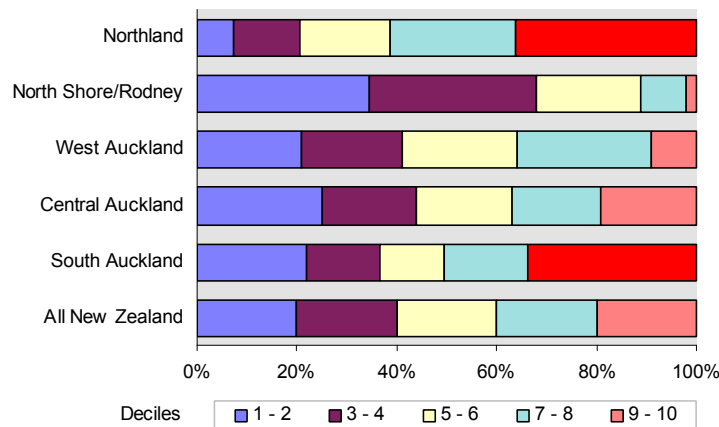
**Table 20. All New Zealand by NZDep96 decile - percentage within each locality. 1996**

locality	NZDep96 deciles* (%). 10 = most deprived					
	1-2	3-4	5-6	7-8	9	10
Northland	7	13	18	25	15	21
North Shore/Rodney	35	34	21	9	1	1
West Auckland	21	2	23	27	7	2
Central Auckland	25	19	19	18	9	10
<b>Counties Manukau</b>	<b>22</b>	<b>15</b>	<b>13</b>	<b>17</b>	<b>13</b>	<b>21</b>
Waikato	17	18	19	22	13	12
Bay of Plenty	13	16	19	21	14	15
Tairāwhiti/Hawkes Bay	12	16	19	22	13	18
Taranaki	12	23	24	22	12	7
Wanganui/Manawatu	13	19	23	22	13	10
Wellington	30	19	17	17	7	9
Nelson/Marlborough	19	21	27	26	6	2
Canterbury/ West Coast	24	23	22	19	8	4
Otago/Southland	20	24	22	21	9	5
All New Zealand	20	20	20	20	10	10

\*Deciles are 10% groupings at the total NZ level, with the same cut-off points used for each area. For this table groups are combined in pairs apart from 9 & 10 (most deprived areas) for ease of reading table.

For decile groups 9 and 10 (by definition the 20% of New Zealand people living in the most deprived areas) Counties Manukau has 117,000 people, that is 34% of the Counties Manukau population, living in areas classified as very deprived. For all District Health Boards this is the highest absolute number, and highest proportion after Tairāwhiti and Northland. Counties Manukau also has a slightly larger proportion of people living in least deprived areas (Deciles 1-2: 22% of 20%), so has more than its equitable share of both rich and poor people. A more marked contrast appears when one compares Counties Manukau with the Waitemata DHB area. North Shore/Rodney has the lowest number of people living in areas with a deprivation score of 9 or more in the country (2%), followed closely by West Auckland (9%).

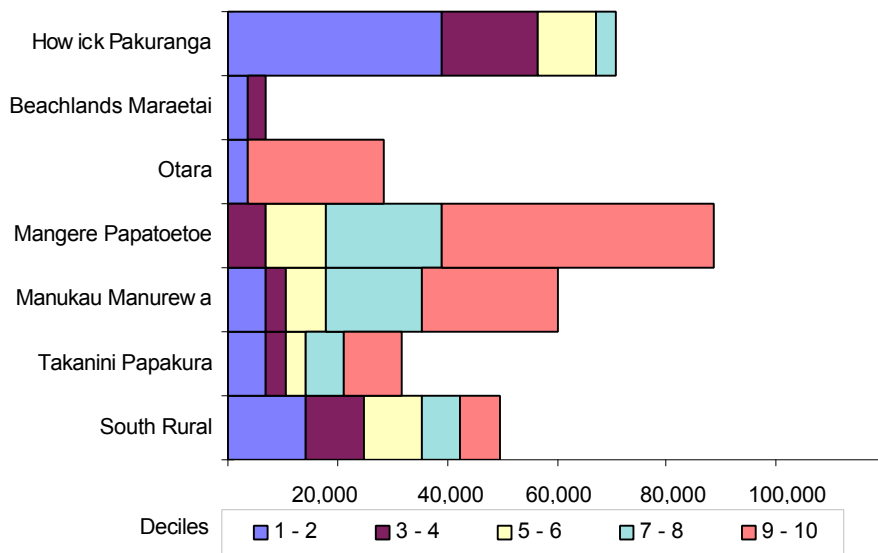
**Figure 18. Selected localities by NZDep96 - percentage within each locality**



### Socio-economic status and area

The map on the facing page shows NZDep96 deciles at meshblock level for the population of Counties Manukau. The results by each of the seven 'catchment zones' (map 2 p6) are summarised in Figure 19. Figure 19 also takes account of the differing numbers of people living in each catchment, showing clearly where the advantage of affluence and disadvantage of deprivation fall.

**Figure 19. Counties Manukau population within each catchment by NZDep96, 1996**



Otahuhu included with Mangere Papatoetoe, 1996 resident population excluding underenumeration

Clear spatial patterns emerge -

- Mangere, Otahuhu, and Otara show as particularly deprived areas, with Papatoetoe between them being more of a mixture. About two thirds of Counties Manukau's decile 9 - 10 population of 117 000 live in these areas, with over 48 000 of these 75 000 people being Maori or Pacific people. Middlemore Hospital is well sited to cater for these people.
- Manukau Manurewa and Takanini Papakura show a more mixed pattern, having areas with very high deprivation scores towards the centre of each suburb and areas with very low deprivation scores towards the outskirts. A further 16% of Counties Manukau's decile 9 - 10 population live in these two catchments combined, with over 19 000 of these 36 000 people being Maori or Pacific people. Manukau SuperClinic and to lesser extent Middlemore Hospital are well sited to cater for these people.
- Howick Pakuranga as well as Beachlands, Maraetai and Clevedon feature as some of the least deprived areas in New Zealand. Clevedon displays the influence of development of lifestyle blocks. Though not numerically large in population terms, all these areas score very low in the deprivation index.
- South Rural also has a range of deprivation scores, from very deprived in parts of Pukekohe and Tuakau to least deprived in Kingseat, Karaka and Hingaia.

## Other socio-economic measures

There are many direct measures of socio-economic status. These can reflect income, education, job status, or a host of other inter-related indicators. Without attempting to be exhaustive some selected measures as they pertain to Counties Manukau are shown in Table 21.

**Table 21. Information on various socio-economic characteristics by wards, 1996.**

	Mangere	Papatoetoe/ Manurewa	Pakuranga Howick	Otara	Clevedon	Waiuku	Papakura	New Zealand
Usually Resident Population	42,750	94,603	74,498	32,335	16,992	13,810	20,173	3,618,302
Median Age	26	29	35	23	34	33	32	32
% European	19%	47%	74%	12%	82%	81%	70%	72%
% with tertiary qualifications	<b>21%</b>	28%	41%	<b>19%</b>	39%	33%	32%	35%
Avg. no. of people per household	<b>4.1</b>	3.2	3.0	<b>4.5</b>	2.9	2.9	3.0	2.8
Median household income	<b>\$36,420</b>	\$39,071	\$51,095	<b>\$35,891</b>	\$49,310	\$42,500	\$41,539	\$34,707
% of households with a telephone	<b>79%</b>	89%	97%	<b>74%</b>	92%	93%	92%	91%
Avg no. of vehicles per household	1.4	1.5	1.8	1.3	2.0	1.8	1.7	1.5

Source: Auckland Regional Council from Census96. Based on local authority wards. These differ slightly from the catchment areas used earlier. Not all wards are shown.

Otara had the lowest median income, Howick/Pakuranga the highest. In Otara only 74% of households have a telephone compared to Howick where 97% of households do. This measure is important when programmes are being planned to improve, for example, access to health care. Planning a telephone-based outreach service might prove difficult, even with the increase in the use of pre-paid mobile phones.

## Socio-economic status and schools

All New Zealand schools are given a Targeted Funding for Educational Achievement (TFEA) decile number, depending on the socio-economic status of the area they serve. A procedure similar to that used in the health sector's NZDep96 classification is used, except here pupils' home addresses are 'meshblock-referenced', then used to develop a composite deprivation score for each school. Scores are then rank ordered into 10 sets. Schools with lower decile numbers are allocated higher funds to help children from low socio-economic areas to achieve better results.<sup>18</sup>

A South Auckland Health analysis of 1999 school roll statistics provided to the Ministry of Education confirms the neediness of children living in Counties Manukau –

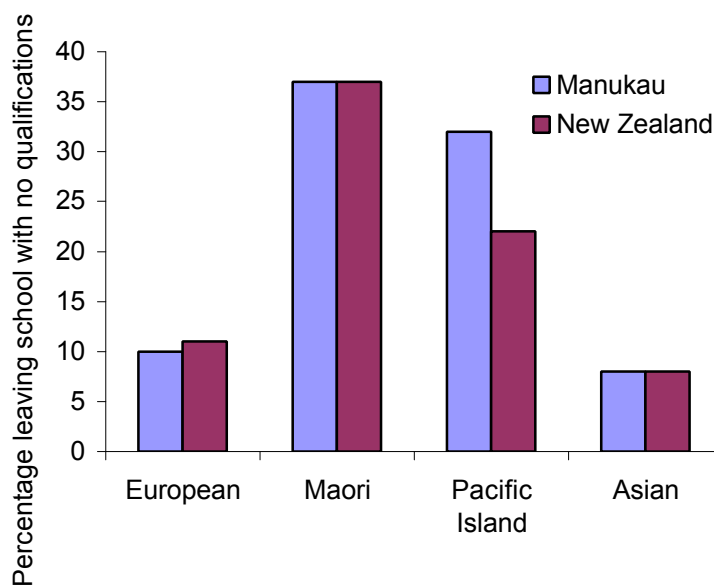
- In 1999 just over 6% of all New Zealand schools were in Counties Manukau, but 19% of the TFEA1 schools - more than three times that proportion of the most needy schools. Of the 173 schools in Counties Manukau 53 (31%) were classified TFEA 1.

<sup>18</sup> Ministry of Education website, April 2000 - [www.moe.govt.nz](http://www.moe.govt.nz). Note that the education sector ranks in ascending order (most needy school 1) whereas the health sector ranks in descending order (most needy areas 10).

- In 1999 just over 10% of all pupils attending New Zealand schools were doing so in Counties Manukau, but 31% of all New Zealand TFEA1 pupils were attending schools in Counties Manukau. Of the total 75 701 pupils attending schools in Counties Manukau, 22 457 (30%) were attending schools classified TFEA 1.

Whereas in 1999 the mean school roll for TFEA 1 schools in Counties Manukau was 424, the comparable statistic for the remaining TFEA 1 schools in New Zealand was 265. Obviously school environments for the most needy children in Counties Manukau are grossly different to those experienced by the majority of comparable pupils throughout New Zealand. The percentage of school leavers with no qualification varies considerably by socio-economic status. Figure 20 shows the stark difference in school-leavers attaining qualifications by ethnicity.

**Figure 20. Percentage leaving school with no qualification by ethnicity, 1999**



Source: Manukau City Council.

Further data on the different qualifications achieved are shown in the table below. In general the areas with the poorest achievements are found in Counties Manukau. Much of this difference will be accounted for by the relatively younger population structure and low socio-economic make up of the Counties Manukau area.

**Table 22 . Data on qualifications obtained by area, 1996.**

	New Zealand	Auckland Region	North Shore City	Waitakere City	Auckland City	Manukau City	Papakura District	Franklin District
Higher Degree or Bachelor Degree	8%	10%	11%	6%	<b>15%</b>	6%	<b>4%</b>	<b>4%</b>
Vocational Qual.	18%	17%	<b>20%</b>	18%	16%	<b>15%</b>	17%	19%
Post School Qual. not specified	<b>6%</b>	7%	7%	7%	7%	7%	7%	<b>6%</b>
School Qual.	31%	31%	<b>35%</b>	32%	<b>30%</b>	30%	29%	30%
Not Specified	5%	7%	<b>4%</b>	6%	8%	7%	<b>6%</b>	<b>5%</b>
No Qualification	32%	28%	<b>22%</b>	32%	23%	35%	<b>36%</b>	<b>36%</b>
Total	100%	100%	100%	100%	100%	100%	100%	100%

Source: Auckland Regional Council. The highest and lowest figures for each row are shown in bold.

## Job-seekers

The information collated below is collated from Work and Income New Zealand (WINZ) offices. The data covers the following offices:- Clendon, Hunters Corner, Mangere, Manukau, Manurewa, Otahuhu, Otara, Papakura, Papatoetoe, Pukekohe and Waiuku. Most job-seekers are between 20 and 39 years of age (Table 23). Counties Manukau has slightly higher proportion of youth unemployed than all New Zealand, as might be expected given the relatively youthful Counties Manukau population.

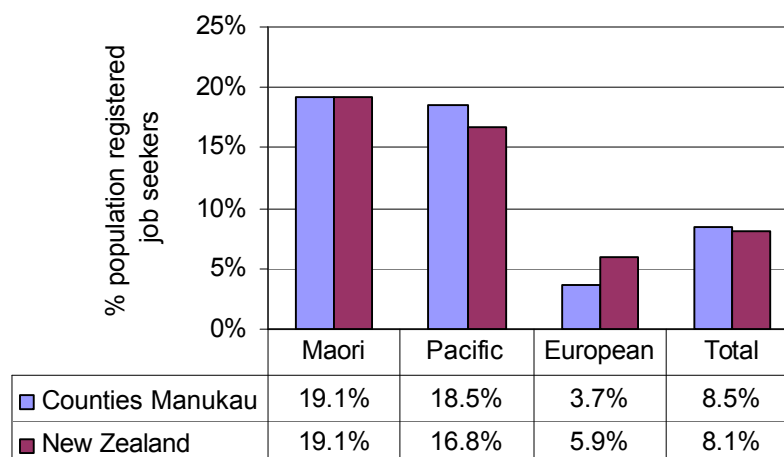
**Table 23. Registered job-seekers by age group, Counties Manukau June 2000.**

	15-19 yrs	20-29 yrs	30-39 yrs	40-49 yrs	50-59 yrs	>=60
<b>Number</b>	2,562	7,567	6,761	4,373	2,503	272
<b>Population</b>	29,033	56,435	62,488	53,494	41,238	48,335
<b>% of age-group</b>	9	13	11	8	6	1
<b>% of total</b>	11	31	28	18	10	1
<b>% of total all NZ</b>	10	30	27	20	12	2

Source: WINZ centres as of 20 June 2000. All percentages are related to projected 2000 populations

Maori and Pacific people are very over-represented as job seekers (Figure 21). Counties Manukau Pacific people have a higher rate of unemployment than their New Zealand counterparts, while Counties Manukau 'European and Other' group has a lower rate than New Zealand.

**Figure 21. Percentage job-seekers by ethnicity, Counties Manukau compared with New Zealand, June 2000**



Source: WINZ. Note not age-standardised. Population 15-74 used as denominator. CM includes Otahuhu. "European" = European and Other

The duration of unemployment among job-seekers is shown in Table 24. The median amount of time unemployed was 26-51 weeks. Counties Manukau job seekers had slightly shorter spells of unemployment than nationally.

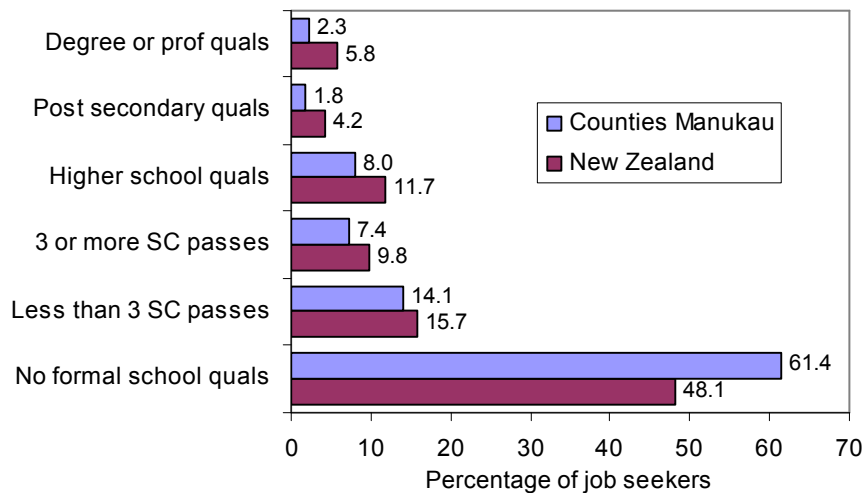
**Table 24. Duration of unemployment among job-seekers, Counties Manukau, 2000**

	Under 26 weeks	26 - 51 weeks	52 - 103 weeks	104 - 207 weeks	208 + weeks
<b>Number</b>	7,509	5,481	5,851	4,115	1,082
<b>CM %</b>	31	23	24	17	5
<b>NZ %</b>	32	20	26	17	5

Source: WINZ

Most job seekers have left school without qualifications. In the previous section on education it was identified that Maori and Pacific people are much more likely to leave school without qualifications than Europeans or Asians, and this shows through in job seekers. A much higher proportion of Counties Manukau job seekers have no qualifications as compared with all New Zealand.

**Figure 22. Percentage of job-seekers with qualifications, Counties Manukau compared with New Zealand 2000**



Source: WINZ. Not age standardised.

## Benefits

The percentage of people receiving benefits varies considerably in Counties Manukau depending on the ward in which people live. Howick has the lowest percentage of people claiming unemployment benefit (2.1%) and Otara Ward the highest (10.8%). If all benefits are included then Howick again has the lowest figure (18.1%) and Papatoetoe the highest (29.7%).

**Table 25 . Percentage of population receiving benefits 1999**

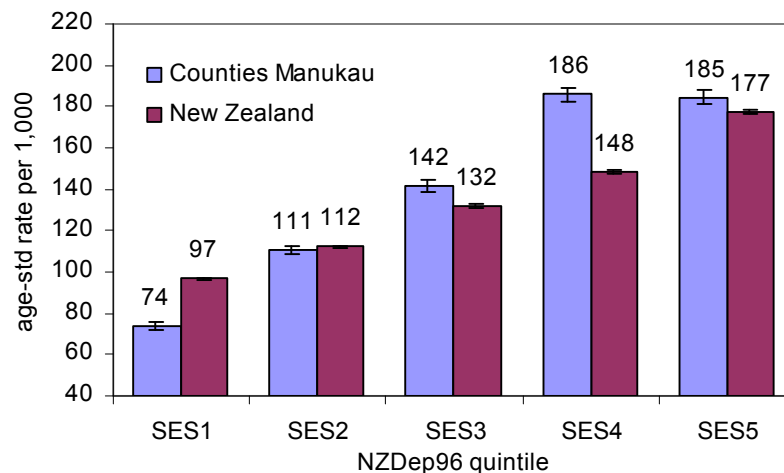
	National Superannuation	Unemployment benefit	Other benefits	Total
Clevedon Ward	10.1	2.2	7.1	19.4
Howick Ward	10.3	2.1	5.7	18.1
Mangere Ward	5.1	8.3	13.3	26.6
Manurewa Ward	6.4	6.1	12.4	24.8
Otara Ward	2.6	10.8	14.6	28.0
Pakuranga Ward	11.4	2.8	7.0	21.3
Papatoetoe Ward	11.6	6.3	11.8	29.7
Manukau City	7.9	5.9	10.7	24.5
Auckland Region	9.7	5.0	9.9	24.6
New Zealand	12.2	6.2	11.9	30.3

Source: Manukau City Council.

## Deprivation and hospitalisation

The association between hospitalisation and deprivation is more marked for Counties Manukau than for New Zealand as a whole (Figure 23). The data has been compiled by taking the Counties Manukau population and dividing it into roughly equal bands based on the NZDep96 deprivation level of the area of residence within Counties Manukau (at the Census Area Unit level). "SES1" represents the least deprived 20% of the population through to "SES5" the most deprived 20%. The New Zealand comparison has been done using the same break points (so do not directly equate to the deciles used elsewhere in the report).

**Figure 23. Age-standardised hospitalisation rates for New Zealand and Counties Manukau by area of deprivation, 1999.**

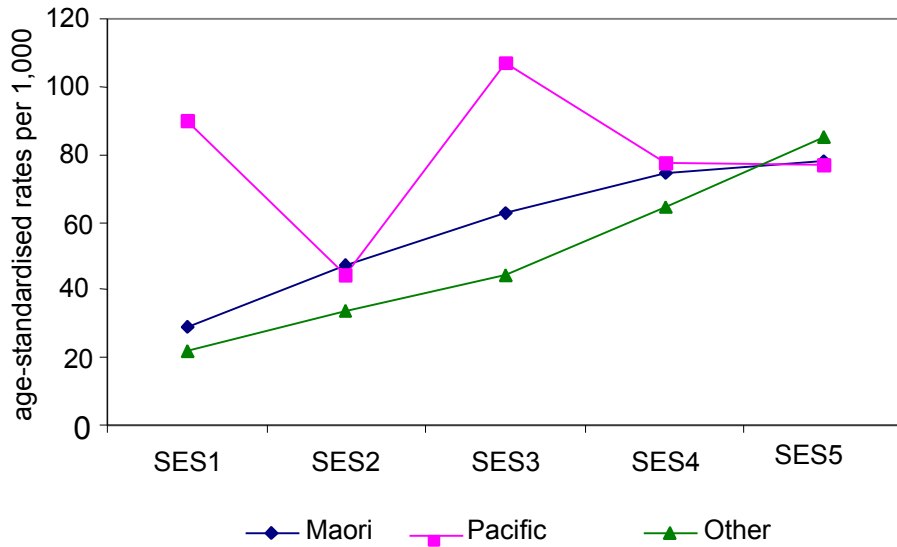


Note. All medical surgical public hospital discharges included. NZDep96 scores within Counties Manukau have been divided into quintiles - the 20% of the population living in the lowest deprivation areas, next 20% etc. SES1 = least deprived, SES5 = most deprived. NZ scores based on the same NZDep96 break-values.

Hospitalisations by ethnicity and deprivation area are shown overleaf for PAH and total for Counties Manukau (Figure 24 and 25). The derivation of PAH is described in Chapter 2 page 28. Hospitalisations increase as area of deprivation worsens in both Maori and 'Other' ethnic groups, with a similar gradient for PAH and for total. This relationship is not shown for Pacific peoples - either cultural factors overwhelm the deprivation measure used here, or there are problems with the NZDep96 measure itself.

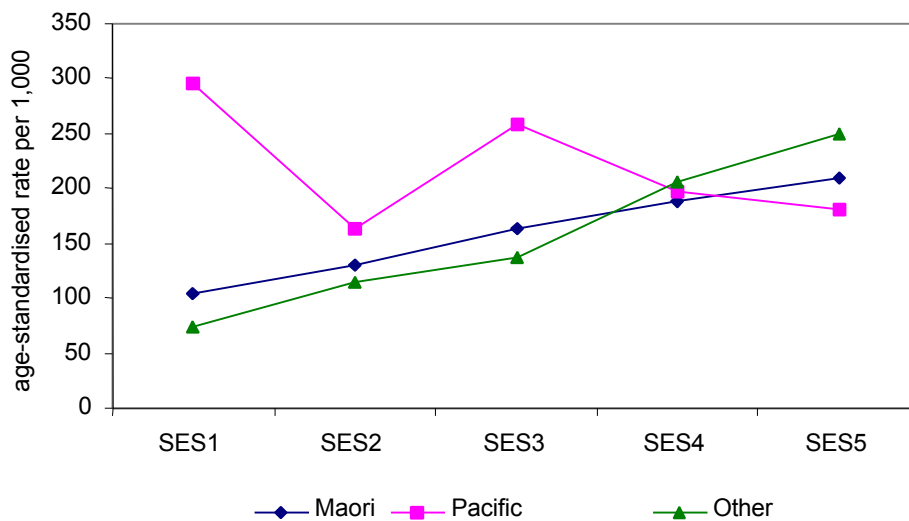
There are low numbers of Pacific people of living in less deprived areas (with only 1400 Pacific people in SES1 and 2000 in SES2) so the numbers will be quite unstable. Low numbers also increase the possibility of a misclassification bias – for example less deprived Pacific families might choose to stay in the communities where they grew up rather than move to an apparently more affluent suburb. Also, although living in a less deprived suburb people may be living several households to a house. While the relationship with Maori and 'Other' shows the usefulness of the area deprivation proxy for socio-economic status, the Pacific figures remind us of the pitfalls in this approach.

**Figure 24. Potentially avoidable hospitalisations by ethnicity and deprivation level, 1999 for Counties Manukau**



Note. NZDep96 scores within Counties Manukau have been divided into quintiles - the lowest 20%, next 20% etc. SES1 = least deprived, SES5 = most deprived. PAH described on page 28.

**Figure 25. Total hospitalisations by ethnicity and socio-economic status in Counties Manukau, 1999**



Note. All medical-surgical discharges. NZDep96 scores within Counties Manukau have been divided into quintiles - the 20% living in the least deprived areas, next 20% etc. SES1 = least deprived, SES5 = most deprived.

It is interesting to note that, in Figures 24 and 25, for the people living in the most deprived areas the hospitalisation rates are similar across all ethnic groups. The following tables (26-28) illustrate the impact in terms of the reduction in potentially avoidable hospitalisations (PAH) that might be possible if all ethnicities and socio-economic groups had the same PAH rate as the least deprived 20%. Results are age-standardised as the population in each area of deprivation and each ethnicity have quite different age structures. Massive reductions in hospitalisation would be possible if that benchmark were achieved, a benchmark all the more powerful for being set locally.

**Table 26. The number of Maori PAH in excess of the least deprived group of 'Other', Counties Manukau 1999.**

	<b>0-14</b>	<b>15-44</b>	<b>45-64</b>	<b>65+</b>
SES1	20	16	1	-4
SES2	79	46	14	13
SES3	235	111	97	43
SES4	472	236	226	52
SES5	341	224	217	78
<b>Total</b>	<b>1,148</b>	<b>632</b>	<b>555</b>	<b>182</b>

Note. NZDep96 scores within Counties Manukau have been divided into quintiles - the 20% living in the least deprived areas, next 20% etc. SES1 = least deprived, SES5 = most deprived. PAH = potentially avoidable hospitalisation - see page 28 et seq, most common conditions covered are listed in Table 29 overleaf. Difference calculated by comparing age-standardised rates to that of the least deprived 'other' group.

Over 1000 Maori child and over 1300 adult discharges might have been averted in 1999 had the Maori age-standardised hospitalisation rate been the same as the least deprived non-Maori non-Pacific rate (Table 26). Many of the PAH conditions are selected with a primary care focus - access to primary care will be an important health care intervention for Maori.

**Table 27. The number of Pacific PAH in excess of the least deprived group of 'Other', Counties Manukau 1999.**

	<b>0-14</b>	<b>15-44</b>	<b>45-64</b>	<b>65+</b>
SES1	31	20	4	7
SES2	33	14	7	0
SES3	260	109	98	89
SES4	391	142	136	61
SES5	1028	330	377	216
<b>Total</b>	<b>1744</b>	<b>615</b>	<b>623</b>	<b>374</b>

See note to Table 26

Over 1700 Pacific child and over 1600 adult discharges might have been averted in 1999 had the Pacific age-standardised hospitalisation rate been the same as the least deprived non-Maori non-Pacific rate (Table 27). As with Maori access to primary care will be an important health care intervention for Pacific people.

**Table 28. The number of 'Other' PAH in excess of the least deprived group of 'Other', Counties Manukau 1999.**

	<b>0-14</b>	<b>15-44</b>	<b>45-64</b>	<b>65+</b>
SES1	0	0	0	0
SES2	178	113	204	523
SES3	297	209	378	564
SES4	386	329	364	537
SES5	284	183	302	257
<b>Total</b>	<b>1146</b>	<b>834</b>	<b>1249</b>	<b>1881</b>

See note to Table 26

Although rate differences are not as large within the non-Maori non-Pacific population as compared with differences between the ethnic groups the larger numbers of European and Others give clear incentives to health care planners. Over 1000 child and nearly 4000 adult discharge might have been prevented (Table 28). Summing over tables 26 to 28 the approximate excess cost to the public hospital system was \$25m.

Data on hospitalisation rates for different conditions for Counties Manukau are presented below. All the conditions listed show a marked gradient between people living in the most deprived areas and people living in the least deprived areas. The people living in the least deprived areas have considerably lower rates for all conditions. Individual conditions are explored in more detail in Chapter 7.

**Table 29. Hospitalisation rates for 1995-9 by area of deprivation.**  
**Age adjusted rates per 100,000 for PAH conditions, Counties Manukau**

Condition	SES1 (wealthiest)	SES2	SES3	SES4	SES5 (poorest)	Ratio SES5:1	
Angina	424	550	817	876	814	1.9	
Pneumonia	170	208	362	521	742	4.4	**
Cellulitis	115	159	289	377	504	4.4	**
Ischaemic heart disease	174	237	309	354	323	1.9	
Asthma	117	160	276	347	370	3.2	*
CORD	80	135	262	348	544	6.8	**
Skin cancers	119	198	306	355	170	1.4	
Gastroenteritis	129	164	238	260	285	2.2	*
ENT infections	102	140	231	254	216	2.1	
Congestive heart failure	103	126	185	265	374	3.6	**
Stroke	104	139	160	223	241	2.3	**
Kidney/urinary infection	73	87	146	145	209	2.9	*
Acute bronchiolitis	33	42	109	147	215	6.5	*
Diabetes	36	61	140	164	287	8.0	*
Dental conditions	57	86	136	140	156	2.7	*
Epilepsy	61	82	115	137	181	3.0	**
Sexually transmitted diseases	34	59	86	117	132	3.9	*
Respiratory infections – Other	39	56	84	99	133	3.4	**
Peptic ulcer	41	56	83	100	130	3.2	**
Lung cancer	31	46	62	95	118	3.8	**
<b>PAH Total</b>	<b>2,231</b>	<b>3,067</b>	<b>4,829</b>	<b>5,844</b>	<b>6782</b>	<b>3.0</b>	*
Other (all non-PAH)	4,904	6,792	9,428	10,972	10,861	2.2	*
Grand Total	7,135	9,859	14,257	16,816	17,643	2.5	*

Source: NMDS. NZDep96 scores within Counties Manukau have been divided into quintiles - the lowest 20%, next 20% etc. F statistic test for trend, \*p<0.05, \*\*p<0.01. PAH = potentially avoidable hospitalisation - see page 28 et seq. Excludes maternity and neonates and mental health services. Injury causes not included in PAH total. CORD = chronic obstructive respiratory disease

### Age, hospitalisation and deprivation area

The tables and graphs below show public hospital discharges for different age groups and their association with area of deprivation as defined by the NZDep96. The relationship between increasing rate of discharges and high deprivation is present in all age-ranges, weakening in older age groups. More about each age group is presented in Chapter 4 The Life Cycle, and in the discussions about individual conditions in Chapters 7 to 11.

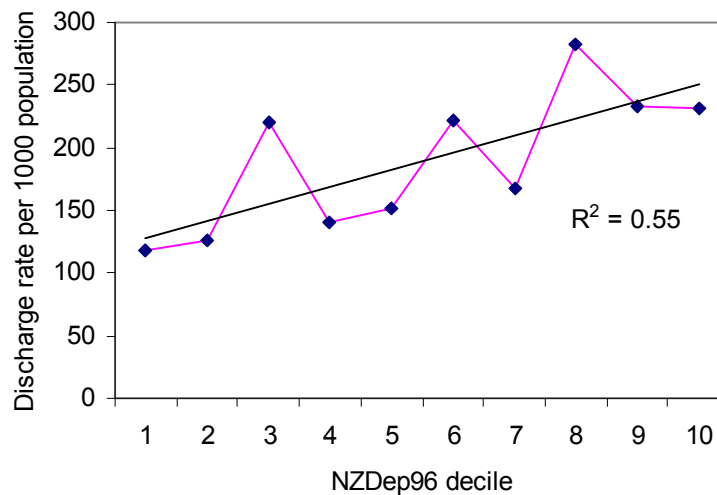
**Table 30. Counties Manukau children (0-14yrs), public hospital discharges 1998-9 by NZDep96 decile**

	1	2	3	4	5	6	7	8	9	10	Total
SAH Treated	695	785	883	221	576	635	763	2,426	2,010	6,317	15,311
Non SAH treated	669	367	601	132	256	200	239	715	606	1,715	5,500
Total	1,364	1,152	1,484	353	832	835	1,002	3,141	2,616	8,032	20,811
Population	11,591	9,130	6,733	2,505	5,501	3,774	5,965	11,109	11,246	34,630	102,184
Rate/1000	<b>118</b>	<b>126</b>	<b>220</b>	<b>141</b>	<b>151</b>	<b>221</b>	<b>168</b>	<b>283</b>	<b>233</b>	<b>232</b>	<b>204</b>
% SAH treated	51%	68%	60%	63%	69%	76%	76%	77%	77%	79%	74%

Source: NMDS. Excludes maternity and neonates. 1 = least deprived NZDep96 decile, 10 = most deprived. SAH = South Auckland Health. Population = estimated 1999. Rate is per 1000 age-specific population.

Children living in areas of NZDep96 decile 10 have twice the hospitalisation rate of children living in decile 1. Hospitalisation rates do not rise from deciles 8-10 as might be expected. This might be due to some sort of absolute level being reached, or it may be an artefact of the mapping of deprivation scores by meshblock to hospital discharge data at a Census Area Unit (CAU) level. The heterogeneity apparent at a CAU level will serve to diminish the measured impact of deprivation on hospitalisation. The tertiary services provided by Starship Hospital show in the relatively high proportion of Counties Manukau children treated in hospitals other than South Auckland Health. However three-quarters of all hospitalisations take place in South Auckland Health.

**Figure 26. Counties Manukau 0-14 yr olds, public hospital discharges by NZDep96 decile, 1998-9.**



Source: NMDS. Rate is per 1000 0-14 population. Linear regression using Microsoft Excel.

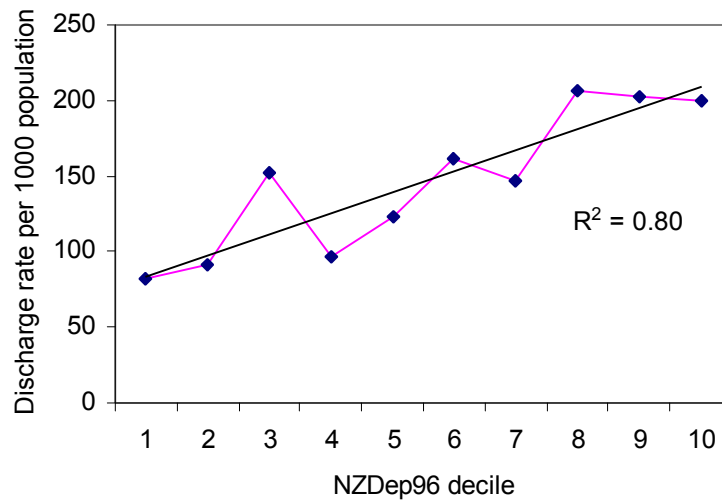
**Table 31. Counties Manukau 15-44yr olds, public hospital discharges 1998-9 by NZDep96 decile**

	1	2	3	4	5	6	7	8	9	10	Total
SAH Treated	1,251	1,285	1,589	379	1,043	992	1,302	3,456	3,121	8,150	22,568
Non SAH treated	678	404	576	83	227	208	229	716	479	1,343	4,943
Total	1,929	1,689	2,165	462	1,270	1,200	1,531	4,172	3,600	9,493	27,511
Population	23,475	18,515	14,205	4,785	10,318	7,441	10,425	20,283	17,796	47,628	174,872
Rate/1000	<b>82</b>	<b>91</b>	<b>152</b>	<b>97</b>	<b>123</b>	<b>161</b>	<b>147</b>	<b>206</b>	<b>202</b>	<b>199</b>	<b>157</b>
% SAH treated	65%	76%	73%	82%	82%	83%	85%	83%	87%	86%	82%

See note to Table 30

For young adults the relationship between deprivation and hospitalisation is even stronger – a 2.5-fold difference between people living in decile 10 and decile 1 areas. The same fall-off to a lesser extent from decile 8 to 10 is evident. A higher proportion than for 0-14 year olds, 82%, are treated at South Auckland Health – most adult tertiary services are provided locally, meaning less need for people to travel out of catchment for treatment.

**Figure 27. Counties Manukau 15-44 year olds, public hospital discharges by NZDep96 decile, 1998-9.**



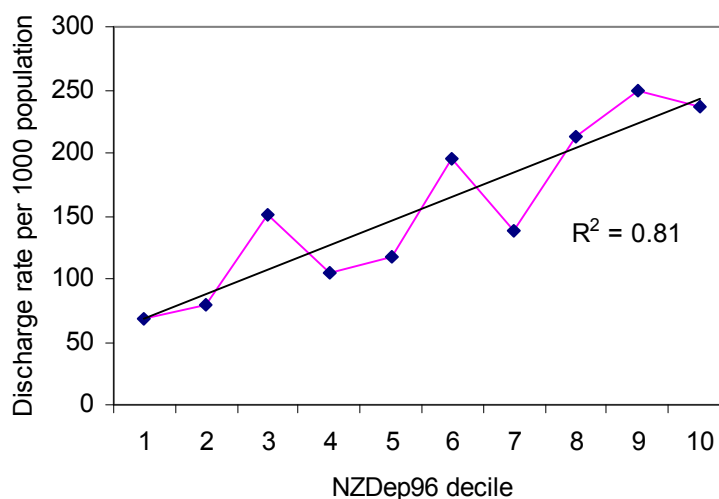
Source: NMDS. Rate is per 1000 15-44 population. Linear regression using Microsoft Excel.

**Table 32. Counties Manukau 45-64 year olds, public hospital discharges 1998-9 by NZDep96 decile**

	1	2	3	4	5	6	7	8	9	10	Total
SAH treated	665	622	832	203	478	496	480	1,284	1,241	3,040	9,341
Non SAH treated	305	204	282	56	156	126	166	391	340	715	2,741
Total	970	826	1,114	259	634	622	646	1,675	1,581	3,755	12,082
Population	14,112	10,332	7,352	2,475	5,377	3,183	4,670	7,864	6,346	15,848	77,558
Rate/1000	<b>69</b>	<b>80</b>	<b>152</b>	<b>105</b>	<b>118</b>	<b>195</b>	<b>138</b>	<b>213</b>	<b>249</b>	<b>237</b>	<b>156</b>
% SAH treated	69%	75%	75%	78%	75%	80%	74%	77%	78%	81%	77%

See note to Table 30

**Figure 28. Counties Manukau 45-64 year olds, public hospital discharges by NZDep96 decile, 1998-9.**



Source: NMDS. Rate is per 1000 45-64 population. Linear regression using Microsoft Excel.

Older adults show a similar picture to younger adults, with a 3.3-fold difference from decile 10 to decile 1. This might be characterised as the accumulation of disadvantage taking its toll as chronic diseases like cardiovascular and respiratory start to make their

presence felt. It is only in this age group that deciles 9 and 10 have a higher discharge rate than decile 8.

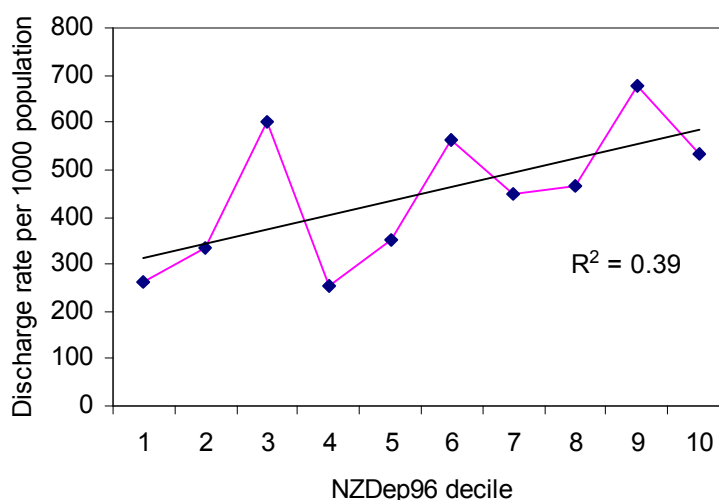
**Table 33. Counties Manukau 65+ year olds, public hospital discharges 1998-9 by NZDep96 decile**

	1	2	3	4	5	6	7	8	9	10	Total
SAH Treated	1,127	1,011	1,629	255	896	949	1,035	1,461	1,687	2,310	12,360
Non SAH treated	302	292	373	64	182	138	177	332	316	472	2,648
Total	1,429	1,303	2,002	319	1,078	1,087	1,212	1,793	2,003	2,782	15,008
Population	5,485	3,909	3,337	1,253	3,071	1,926	2,697	3,849	2,965	5,209	33,701
Rate/1000	<b>261</b>	<b>333</b>	<b>600</b>	<b>255</b>	<b>351</b>	<b>564</b>	<b>449</b>	<b>466</b>	<b>675</b>	<b>534</b>	<b>445</b>
% SAH treated	79%	78%	81%	80%	83%	87%	85%	81%	84%	83%	82%

See note to Table 30

For the elderly the relationship between hospitalisation and deprivation is muted. Measures of deprivation in the elderly are less related to current income and benefit status, and one could argue that premature mortality reduces the number of people living in more deprived areas.

**Figure 29. Counties Manukau 65+ year olds, public hospital discharges by NZDep96 decile, 1998-9.**



Source: NMDS. Rate is per 1000 65+ population. Linear regression using Microsoft Excel.

**Table 34. Counties Manukau residents, all ages, public hospital discharges by NZDep 96 decile, 1998-9.**

	1	2	3	4	5	6	7	8	9	10	Total
SAH Treated	3,738	3,703	4,933	1,058	2,993	3,072	3,580	8,627	8,059	19,817	59,580
Non SAH Treated	1,954	1,267	1,832	335	821	672	811	2,154	1,741	4,245	15,832
Total	5,692	4,970	6,765	1,393	3,814	3,744	4,391	10,781	9,800	24,062	75,412
Population	54,662	41,885	31,627	11,018	24,267	16,325	23,758	43,105	38,353	103,315	388,316
Rate/1000	<b>104</b>	<b>119</b>	<b>214</b>	<b>126</b>	<b>157</b>	<b>229</b>	<b>185</b>	<b>250</b>	<b>256</b>	<b>233</b>	<b>194</b>
% SAH Treated	66%	75%	73%	76%	78%	82%	82%	80%	82%	82%	79%

See note to Table 30

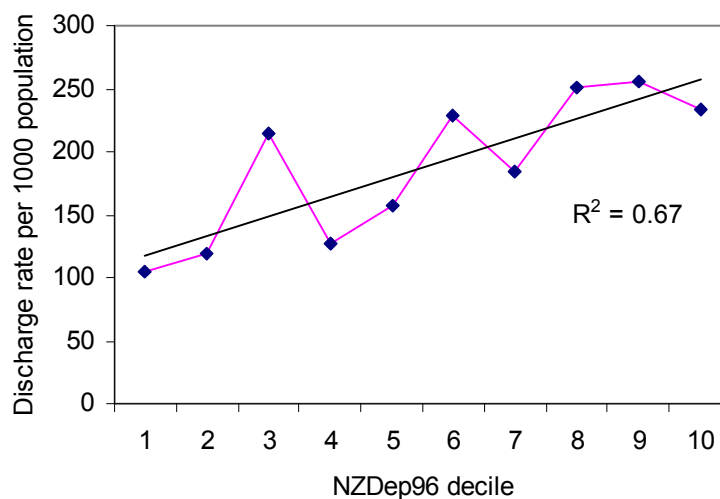
Over all ages the public hospital discharge rate for those living in decile ten areas is 2.3 times that for those in decile 1. These differences are found despite the fact that those in

the wealthier deciles would probably be older and are therefore could be expected to be ill more often.

A higher proportion of less deprived people received care in public hospitals outside South Auckland Health than more deprived people. This is in part due to people living in the Howick/Pakuranga area using Auckland Healthcare services. The specific reasons for this have not been investigated, but will relate to:

- the tertiary services being delivered at Auckland Healthcare that are not at South Auckland Health (eg cardiothoracic surgery) which are weighted towards the elderly
- established referral patterns to specialists in the Central Auckland area, at a GP level and at an individual patient level
- central city workplaces - acute care being delivered by the closest hospital
- lack of handover of cases to the (relatively) newly set up tertiary services in SAH (eg cardiology, respiratory)
- people living in more deprived areas being more likely to be admitted with preventable conditions which are treated in a secondary care setting.

**Figure 30. Counties Manukau residents, public hospital discharges by NZDep deciles, all ages 1998-9.**



Source: NMDS. Rate is per 1000 age-standardised to the NZ population. Linear regression using Microsoft Excel.

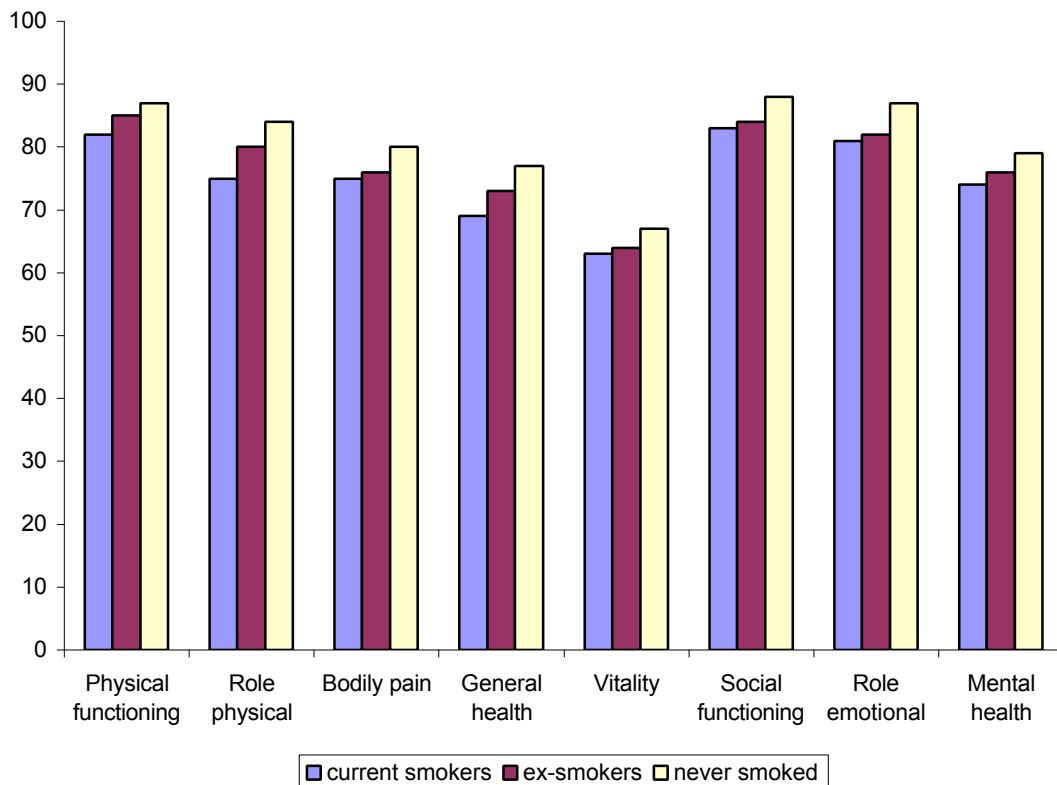
## Lifestyle Factors

Although people have a certain amount of choice about the lifestyle they lead, lifestyles are strongly influenced by socio-economic status. People on low incomes tend to have less choice about where they live or the food they buy. Often people struggling to manage their lives from day to day do not take a long-term view of their health. The risk factors below are all linked in some way to socio-economic status.

### Smoking

Tobacco smoking and exposure to tobacco smoke are well-recognised risk factors for poorer health because of their strong associations with respiratory and cardiovascular disease, and higher rates of many cancers (specific diseases are explored in more detail in Chapter 7). Census96 reported nearly 25% of New Zealand's adult population overall as current tobacco smokers, with an equal proportion being ex-smokers.<sup>19</sup> *Our Health Our Future 1999* contains an all-New Zealand SF-36 profile by smoking status. Its importance is such it is copied here (Figure 31).<sup>20</sup>

**Figure 31. All NZ SF-36 profiles by smoking, adjusted for age and gender, 1996-97**



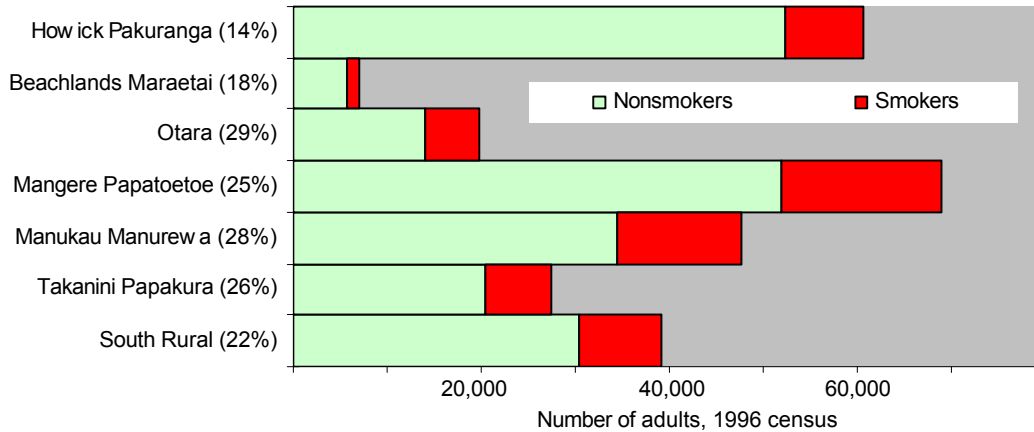
Highest rates of smoking were observed among Maori women (47% current smokers overall, and well over 50% at younger ages). Maori men (40% overall) and Pacific men (35%) were further cohorts with higher than expected prevalence. Strongly linked is the association between smoking and socio-economic status - whether measured in terms of family income, education or NZDep96, people in lower socio-economic groups are more likely to be smokers.

<sup>19</sup> Ministry of Health. *Our health our future*. 1999. p344. After *New Zealand Health Survey 1996-7*.

<sup>20</sup> Note that the analysis does not control simultaneously for age, gender and socio-economic standing but it is apparent that those who cease smoking, as well as those who have never smoked, report enhanced personal health status.

Census 1996 data show over 23% of Counties Manukau's adult population, or 17% of the total population currently smoke - **smoking rates are highest in the most deprived areas**. The Northern Health Region Survey (1996/7) suggested that rate in Counties Manukau reached as high as 28% in adults. This was second only to Northland where the rates reached 30%. Smoking was most common in this survey among Maori (47%) then Pacific people (34%).

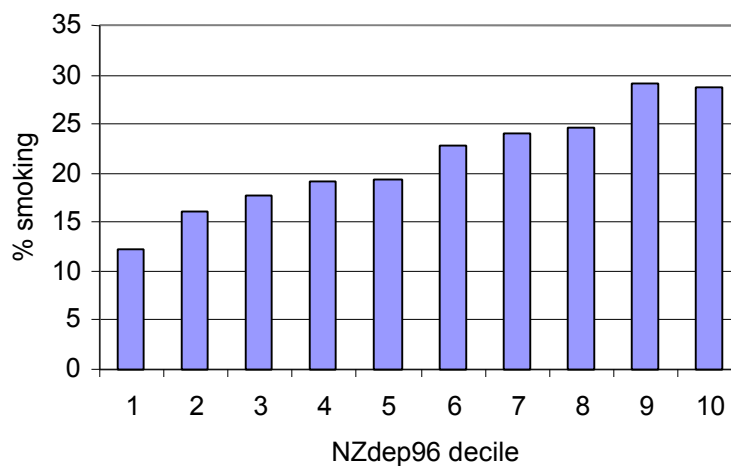
**Figure 32. Numbers of adult nonsmokers and current smokers by Counties Manukau catchment, 1996**



Source: Census96 usually resident population data

Smoking rates among the people living in the most deprived areas in Counties Manukau reach 29% (deciles 9 and 10 in Figure 32a). This is lower than the rates stated above for Maori and Pacific people, suggesting that there is a significant ethnic component to smoking rates over and above socio-economic effects.

**Figure 33. Percentage of smokers among Counties Manukau adults by NZDep96.**



Source: Census96 usually resident population data

## Nutrition

Data on nutrition specifically for Counties Manukau is difficult to obtain. The National Nutrition Survey 1996/7 included data on Counties Manukau (defined as subregion 5) but the numbers surveyed were small - only 96 males and 159 females. The nutrition issues in New Zealand identified by the survey were diet-related cardio-vascular diseases, obesity, food poverty, and nutrients. Obesity is associated with increased total mortality, and cardiovascular stroke and diabetes specific mortality. Many conditions worsen with increasing body mass, including blood pressure, cholesterol, gallstones, sleep apnoea, osteoarthritis and some cancers<sup>21</sup>.

Around half the adult New Zealand population would be considered to be overweight and obese, nearer 60% for Maori and 80% for Pacific people (Table 35). Overweight is defined as a body-mass index (BMI which is height in metres squared divided by weight in kg) between 25 and 30, and obesity is over 30. The Maori and Pacific rates use slightly higher BMI cut-offs of 26 and 32, reflecting the different body composition of the Polynesian frame. With the very high rates of diabetes attendant on obesity, nutrition is one of the most important health problems for Counties Manukau people into the 21<sup>st</sup> century.

**Table 35. Prevalence of obese and overweight people in New Zealand by ethnicity, 1996-97**

	Overweight	Obese	Total
Male			
Maori	30.0	<b>27.0</b>	57.0
Pacific	<b>59.2</b>	<b>26.2</b>	<b>85.4</b>
Other	41.0	12.6	53.6
Female			
Maori	32.7	<b>27.9</b>	60.6
Pacific	28.8	<b>47.2</b>	<b>76.0</b>
Other	29.8	16.7	46.5

Source: Boyd Swinburn: Heart Foundation from National Nutrition Survey 1996-7. Note: Definition of obese is BMI over 32 and overweight BMI over 26 for Maori and Pacific people, and BMI over 30 and 25 respectively for Other. BMI = body-mass index = height in metres squared divided by weight in kg.

The Northern Region Health Survey 1996/7 examined the dietary intake of fat using as indicators milk consumption and cooking practices. People were asked about the type of milk they usually consume and the type of fat or oil they usually use in cooking (Table 36).

Counties Manukau and West Auckland residents had relatively high rates of whole usage, and relatively low low fat usage as compared with Central and North Auckland. The extent of the change from traditional New Zealand patterns is seen in comparison with the Northland figures. One might consider a continuum from rural to relatively poor urban to relatively wealthy urban in the uptake of the healthy message "low fat milk is better for you health".

There were marked differences in the type of oil/fat used in cooking across the region with Counties Manukau residents using a high proportion of lard/dripping and lower proportion of olive oil than the other areas within Auckland.

<sup>21</sup> Ministry of Health. *Our health our future*. 1999. Pages 351-2.

**Table 36. Type of milk consumed by health district (weighted percentage), 1996/7**

District	Low Fat	Half Fat	Whole Milk
Northland	16.9	11.7	56.9
North Auckland	32.7	20.8	43.6
West Auckland	26.3	22.9	50.0
Central Auckland	30.6	29.3	37.2
<b>Counties Manukau</b>	<b>25.5</b>	<b>20.4</b>	<b>48.7</b>

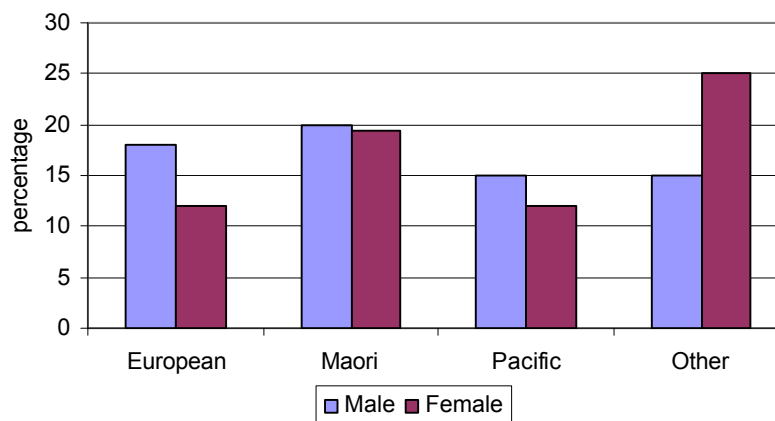
**Prevalence of type of oil/fat used in cooking (weighted percentage), 1996/7**

	Lard/ dripping	Butter/ ghee	Margarine	Vegetable oil	Olive oil
Northland	7.5	22.6	23.5	41.6	28.1
North Auckland	3.8	16.5	17.2	47.8	31.8
West Auckland	4.7	18.9	16.9	55.6	32.8
Central Auckland	1.4	9.1	9.6	47.6	34.1
<b>Counties Manukau</b>	<b>5.5</b>	<b>11.0</b>	<b>11.0</b>	<b>54.1</b>	<b>18.3</b>

Source: Northern Region Health Survey 1996/7. Weighted percentage of those who responded to each question.

### Physical activity

Regular moderate physical activity can improve health and wellbeing. Most of the information we have on physical activity relates to New Zealand as a whole. Overall 61% of adults in the 1996/7 National Health Survey could be described as physically active: that is they took part in 2.5 hours or more of leisure time physical activity in the previous week. A similar proportion of men and women of all ages up to the age of 75 years fell into the physically active category. Fifteen percent of all adults were sedentary (had participated in no leisure time physical activity in the previous week). Men of all ages and people over the age of 75 were more likely to be sedentary. Younger people were more likely to participate in rigorous physical activity than older people. European, Maori and Pacific people were almost equally likely to fall into the physically active category. Maori and people from other ethnic backgrounds were more likely to be sedentary.

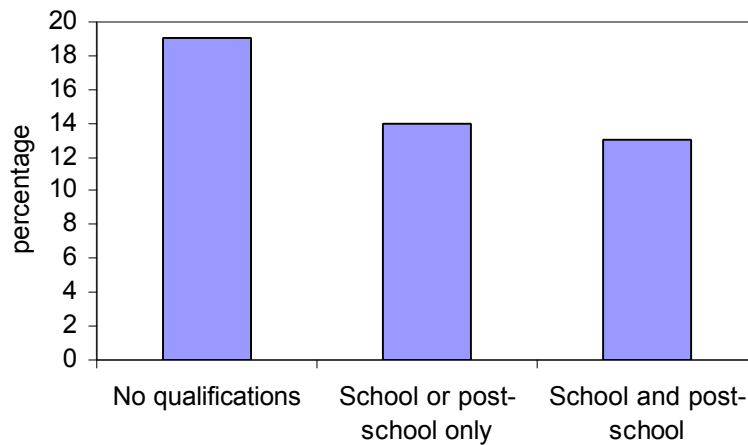
**Figure 34. Proportion of people in New Zealand who are sedentary by ethnicity and sex, 1996/7 (age-standardised).**

Source: New Zealand Health Survey, 1996/7.

Participation in vigorous activity was associated with all three measures of socio-economic status used (family income, level of education, and area of residence using NZDep96 score). Those with higher levels of income and education and those living in less deprived areas tended to participate in rigorous physical activity. Duration of physical activity was not significantly associated with either level of family income or

the NZDep96 score. There was a relationship however with level of education - those with lower levels of education tended to participate in less physical activity.

**Figure 35. Proportion of people who are sedentary, by education (age and sex standardised) 1996/7.**

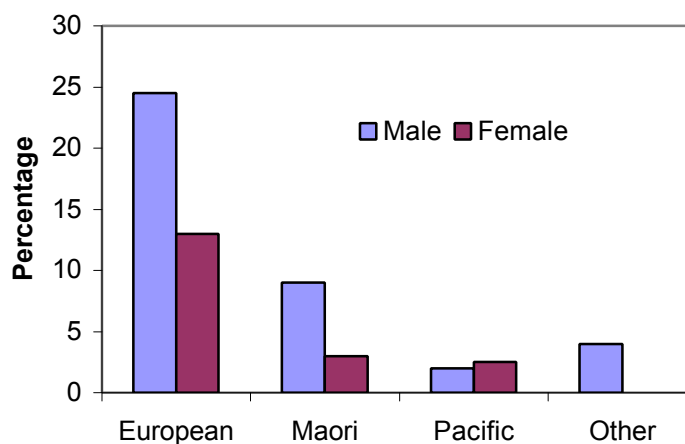


Source: New Zealand Health Survey, 1996/7.

## Alcohol

Alcohol is the most commonly used recreational drug in New Zealand. Total consumption of alcohol has fallen by 25% since 1980 although there has been a slight increase in recent years<sup>22</sup>. Total consumption does not provide information on harmful drinking patterns. Episodes of heavy drinking are more likely to lead to adverse health outcomes than drinking small amounts of alcohol regularly which may in fact be protective in those at risk of coronary heart disease.

**Figure 36. Proportion of New Zealand adults who drink four or more times a week**



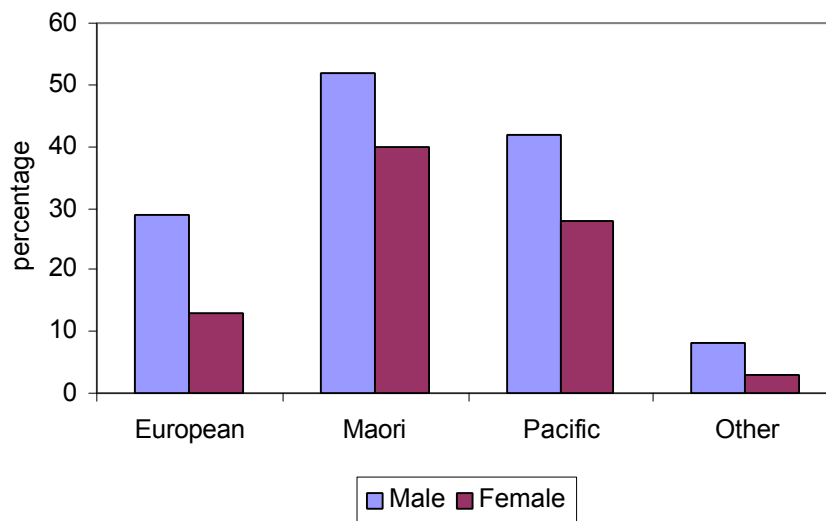
Source: New Zealand Health Survey 1996/7. Percentages are of people age 15+

<sup>22</sup> Ministry of Health. *Progress on Health Targets 1999*. On [www.moh.govt.nz](http://www.moh.govt.nz)

From the 1996/7 Health Survey 17.3 percent of New Zealand adults indicated a pattern of drinking that put them at risk of future physical or mental negative effects from alcohol. People aged between 15 and 24 years, especially men, were more likely to fall into this category. Older people tended to drink more regularly than younger people but drank less on each occasion. Alcohol consumption patterns vary across ethnic groups. European/Pakeha adults were the most likely to have drunk any alcohol in the previous year, and to drink alcohol four or more times a week (Figure 36).

Maori adults were more likely to indicate a hazardous pattern of drinking (AUDIT score of eight or more<sup>23</sup>), to drink five or more drinks on a typical day when drinking and to drink six or more drinks on one occasion at least weekly (Figure 37). Pacific people and 'Other' were most likely to report not drinking any alcohol in the previous year. However Pacific drinkers were more likely than Europeans to drink more on a typical day.

**Figure 37. Proportion of people who drink five or more drinks on a typical day when drinking, by ethnicity and sex (age-standardised).**



Source: New Zealand Health Survey, 1996/7. Percentages are age-standardised of people age 15+

South Auckland Health recorded a total of 117 discharges for alcohol-related conditions for 1999 and a total of 437 for the period 1995-9. The table below shows the rates for admissions for alcohol related conditions in Counties Manukau compared to New Zealand as a whole. The rates are similar to each other and do not differ statistically.

**Table 37. Discharge rates for alcohol related conditions 1995-9**

	Maori	Pacific	Other	Total
<b>Counties Manukau</b>	30 (20-40)	10 (6-14)	27 (24-30)	25 (22-27)
<b>New Zealand</b>	29 (27-32)	14 (11-17)	30 (29-30)	29 (28-30)

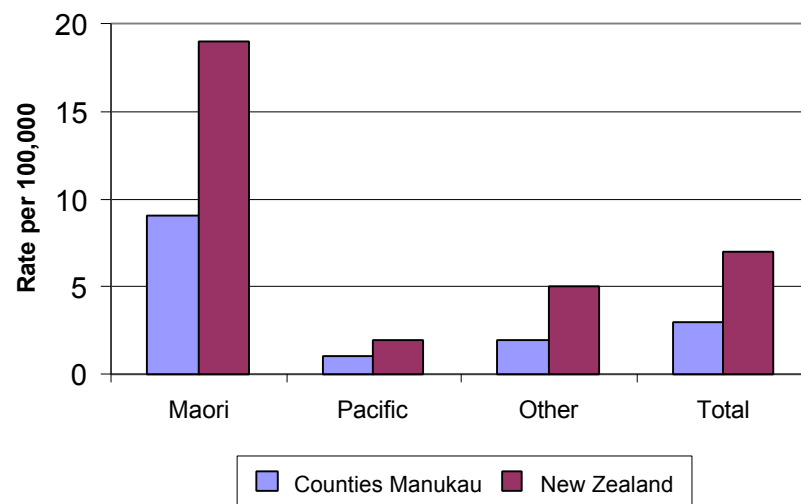
Note: age-standardised rates per 100,000 (95% confidence intervals) for public hospitals

<sup>23</sup> The AUDIT questionnaire asks a number of questions about hazardous alcohol consumption, abnormal drinking behaviour and adverse effects of drinking - see *Taking the Pulse, The 1996/7 New Zealand Health Survey*. Ministry of Health, 1999, p71.

## Recreational drug use

The Christchurch Psychiatric Epidemiology Study (CPES) assessed both the use of drugs and clinical indicators of drug dependence. The lifetime prevalence of drug dependence was estimated to be 5.7% of the population with most of these (4.7%) relating to cannabis use. Lifetime prevalence of dependence on all other drugs was found to be less than 1%. The first major New Zealand survey of drug use was that of Black and Casswell<sup>24</sup> (1993). In 1990 they undertook a telephone survey of over 5000 people aged 15-45 years drawn from the Auckland and Bay of Plenty areas. Cannabis was the most commonly used illicit drug with about 3% reporting regular use (10 or more times a month). Hallucinogens were the next most commonly used drug followed by stimulants. About 1% of the sample reported having tried heroin. Treatment for drug dependence is available on an in-patient basis and through drug and alcohol centres in the community. Treatment for drug dependence is also available through a range of community based agencies, but no information is systematically collected on client numbers. Observational reports suggest that the numbers have increased considerably in recent years.

**Figure 38. Hospitalisations for drug intoxication and withdrawal, 1999**



Source: NMDS. Rate per 100,000, age standardised to NZ population

Counties Manukau residents have lower hospitalisation rates for drug intoxication and other disorders than New Zealand as a whole (Figures 38 and 39). It is not clear why this should be the case, but probably relates to the outpatient-based nature of most such services in Auckland. In general Maori are much more likely and Pacific people far less likely to be admitted for drug dependence or abuse. The Maori rate has been consistently high over the past twenty years, particularly for Maori women (Figure 40).

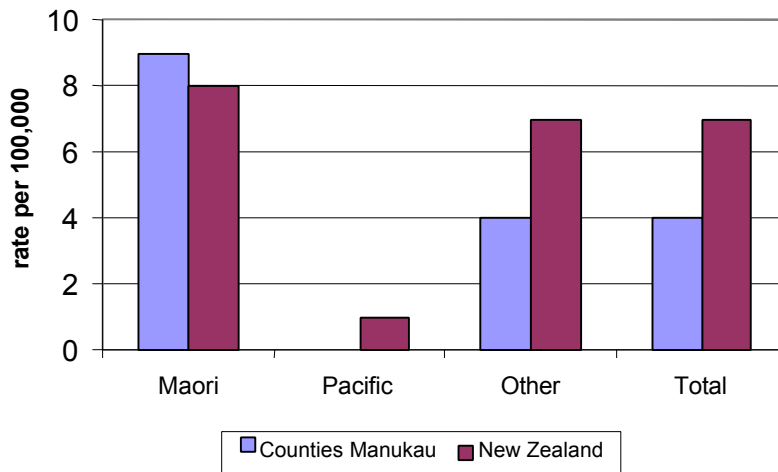
Drug dependence is often accompanied by a range of psychological problems, for example - depression, anxiety and personality disorders. Analysis from a large multi-site study of over 20,000 people in the United States found that among those with a lifetime history of drug dependence over half had also had a mental disorder<sup>25</sup>.

<sup>24</sup> Black D, Casswell S. Recreational drug use in New Zealand. *Drug and Alcohol Review* 1993; 12:37-48

<sup>25</sup> Robins L, Regier D A (eds) *Psychiatric disorders*. New York: American Free Press, 1991.

An additional public health concern is the prevalence of infectious disease among injecting drug abusers, in particular the spread of HIV and hepatitis B and C. A recent study of injecting drug users attending the Christchurch Methadone Clinic found a serum prevalence of 87% for hepatitis C and this is thought to be similar in other parts of the country.

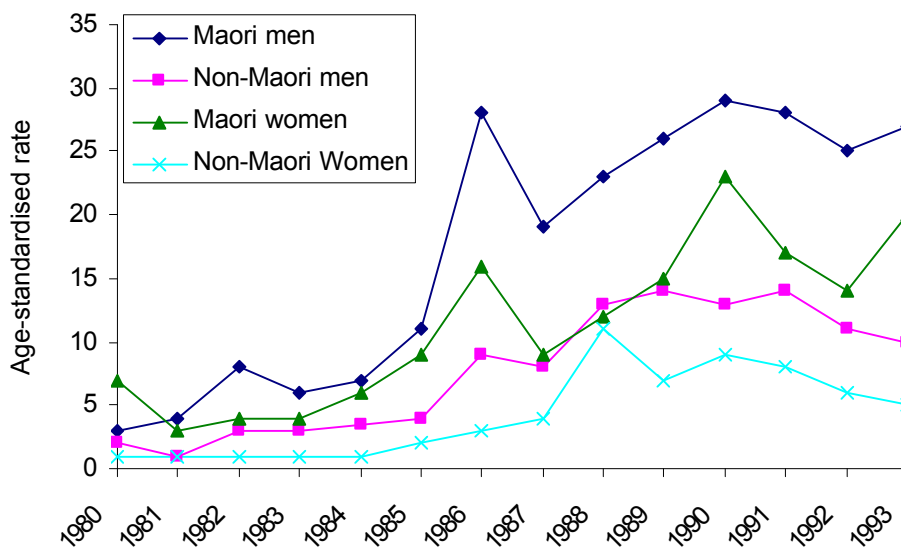
**Figure 39. Hospitalisations for other drug disorders and dependence, 1999**



Source: NMDS. Rate per 100,000, age standardised to NZ population

Fortunately it appears that the HIV has not become established among the drug using population in New Zealand. In the latest report on the HIV/AIDS statistics, only 2% of those testing positively for HIV in the last 12 months reported a history of injecting drug use. (AIDS Epidemiology Group, 1996).

**Figure 40. First admissions to psychiatric hospitals throughout New Zealand due to drug dependence or abuse, by sex and ethnicity, 1980-1993.**



Source: NZHIS. Rate per 100,000, age standardised to Segi's world population

## Sexual behaviour

Teenage pregnancy is discussed in the Women's Health chapter, other consequences of sexual behaviours are discussed briefly here.

Surveillance of sexually transmitted infections (STIs) disease in New Zealand has been based on data supplied by sexual health clinics. Since the surveillance is limited to clinics the results may not be representative of the epidemiology of STIs in the New Zealand population. Table 38 shows the number of STIs recorded in a selection of clinics across New Zealand in 1998.

**Table 38. Number of cases (rates\*) of sexually transmitted infection across selected sexual health clinics across New Zealand, 1998.**

Disease	Whangarei	Auckland	Wellington	Christchurch	Total
Chlamydia	53 (4.0)	523 (2.6)	208 (1.7)	161 (1.9)	2,268 (3.0)
Gonorrhoea	4 (0.3)	137 (0.7)	39 (0.3)	11 (0.1)	329 (0.4)
Genital Herpes	11 (0.8)	160 (0.8)	130 (1.1)	68 (0.8)	731 (1.0)
Syphilis	0 (0)	8 (0)	5 (0)	1 (0)	24 (0)
Genital Warts	64 (4.8)	996 (4.9)	389 (3.2)	416 (5.0)	3,479 (4.7)
<b>Total patient visits</b>	<b>1,336</b>	<b>20,452</b>	<b>12,260</b>	<b>8,398</b>	<b>74,716</b>

\*Rates are based on cases diagnosed expressed as a percentage of all patient visits

Ectopic pregnancy has been used as a marker of the prevalence of sexually transmitted infections<sup>26</sup> where direct estimation is not available. Although ectopic pregnancy provides a limited marker of the burden of sexually transmitted diseases at least half of all ectopic pregnancies can be attributed to past chlamydial or gonococcal infection. Maori and Pacific women have significantly higher ectopic pregnancy rates than European and Other women – more than twice (Table 39). The predominately urban Maori and Pacific population within Counties Manukau have significantly higher rates than their counterparts elsewhere in the country. In contrast the European and Other group has a significantly lower rate than the total New Zealand rate.

**Table 39. Discharge rates for ectopic pregnancy & sexually transmitted disease by ethnicity 1995-99**

	Maori	Pacific	Other	Total
<b>Counties Manukau</b>	146 (129-163)	122 (110-135)	62 (58-66)	86 (82-90)
<b>New Zealand</b>	113 (108-117)	107 (100-104)	69 (68-70)	77 (76-79)

Source: NMDS. Public hospital discharges, age-standardised rates per 100,000 per year (95% confidence intervals), 5 years combined

Discharge rates for the region show highest rates in Counties Manukau with the 15-44 year old age group having predictably the bulk of the discharges (Table 40). Counties Manukau rates have been consistently higher over the 1995-9 period (not shown).

<sup>26</sup> Ministry of Health. *Progress on Health Outcome Targets*. 1997

**Table 40. Age-specific discharge rates for ectopic pregnancy and sexually transmitted infection, Auckland region and New Zealand, 1995-9**

	<b>0-14</b>	<b>15-44</b>	<b>45-64</b>	<b>65+</b>	<b>Total</b>
Northland	7	150	36	28	73
North Shore	6	111	22	11	57
West Auckland	6	144	40	11	79
Central Auckland	7	136	36	7	78
<b>Counties Manukau</b>	<b>9</b>	<b>158</b>	<b>30</b>	<b>11</b>	<b>82</b>
Waikato	6	144	30	10	73
<b>New Zealand</b>	<b>6</b>	<b>136</b>	<b>35</b>	<b>14</b>	<b>72</b>

Source: NMDS. Public hospital discharges, age-specific rates per 100,000 per year for the 5 years combined.

## Summary

Thirty four percent of the population of Counties Manukau - 117,000 people – live in areas classified as very deprived. Out of all the New Zealand regions this is the highest absolute number, and highest proportion after Tairāwhiti and Northland. However Counties Manukau also has a slightly larger proportion of people living in least deprived areas (Deciles 1 - 2: 22% of 20%), so has more than its equitable share of both rich and poor people. In Otara only 74% of households have a telephone compared to Howick where 97% of households do. Counties Manukau has a higher percentage of people without any qualifications than other parts of Auckland and New Zealand as a whole. In general hospitalisation rates are highest for those from the most deprived areas and fall as socio-economic status increases (eg Table 29). High risk lifestyle factors, an important potentially malleable determinant of health, are more common among the most deprived.