



Future Focus

Section 12 Chronic conditions

2010
Population Health | Health Waikato



Chronic conditions

12.1. Introduction

This *Future Focus* section contains data and information related to several major chronic conditions and associated risk factors. The section begins by discussing these conditions and related risk and protective factors in relation to age and ethnicity under the heading 'Population structure'. Next chronic conditions' health priorities for the Waikato DHB population are summarised. This is followed by a very brief comment on health services, and lifestyle factors related to specific chronic conditions. Finally, the 'Evidence-based interventions' section has guidance to support reducing the incidence of chronic conditions with a focus on key settings and guidelines to support effective intervention.

These are discussed under the following headings:

[12.1. Introduction](#)

[12.2. Population structure](#)

[12.3. Health priorities](#)

[12.4. Service networks](#)

[12.5. Living and working conditions](#)

[12.6. Evidence-based interventions](#)

[12.7. References](#)

Where possible, information on inequalities will be highlighted and gaps identified where further data and information is required to make a more meaningful assessment.

12.2. Population structure

12.2.1. Smoking

A comprehensive analysis of the smoking status of Waikato District Health Board's (Waikato DHB's) population using data from the 2006 Census has been prepared by the Population Health. This is available on request from Population Health. The report presents smoking status by age, gender and ethnicity for various areas in the Waikato DHB region, including territorial authorities, wards and the area units of Hamilton City. It also includes a comparison to the 1996 Census information. Below is a summary of that data.

Approximately one-fifth of the Waikato DHB region population are current smokers, which is slightly higher in comparison to the New Zealand population (Table 1).

Table 1: Age standardised(I) percentage smoking for population 15 years and over, by gender, territorial authority, Waikato DHB and New Zealand, 2006.

Area	Male	Female	Total
Thames-Coromandel	25.3	24.6	24.9
Hauraki	27.8	27.5	27.6
Waikato	23.4	23.0	23.2
Matamata-Piako	23.7	22.7	23.1
Hamilton City	19.6	18.4	18.9
Waipa	20.7	20.7	20.7
Otorohanga	25.7	26.0	25.6
South Waikato	28.1	30.4	29.2
Waitomo	28.2	31.1	29.6
Ruapehu (part)	27.2	28.2	27.6
Waikato DHB	22.3	21.7	22.0
New Zealand	20.9	19.0	19.9

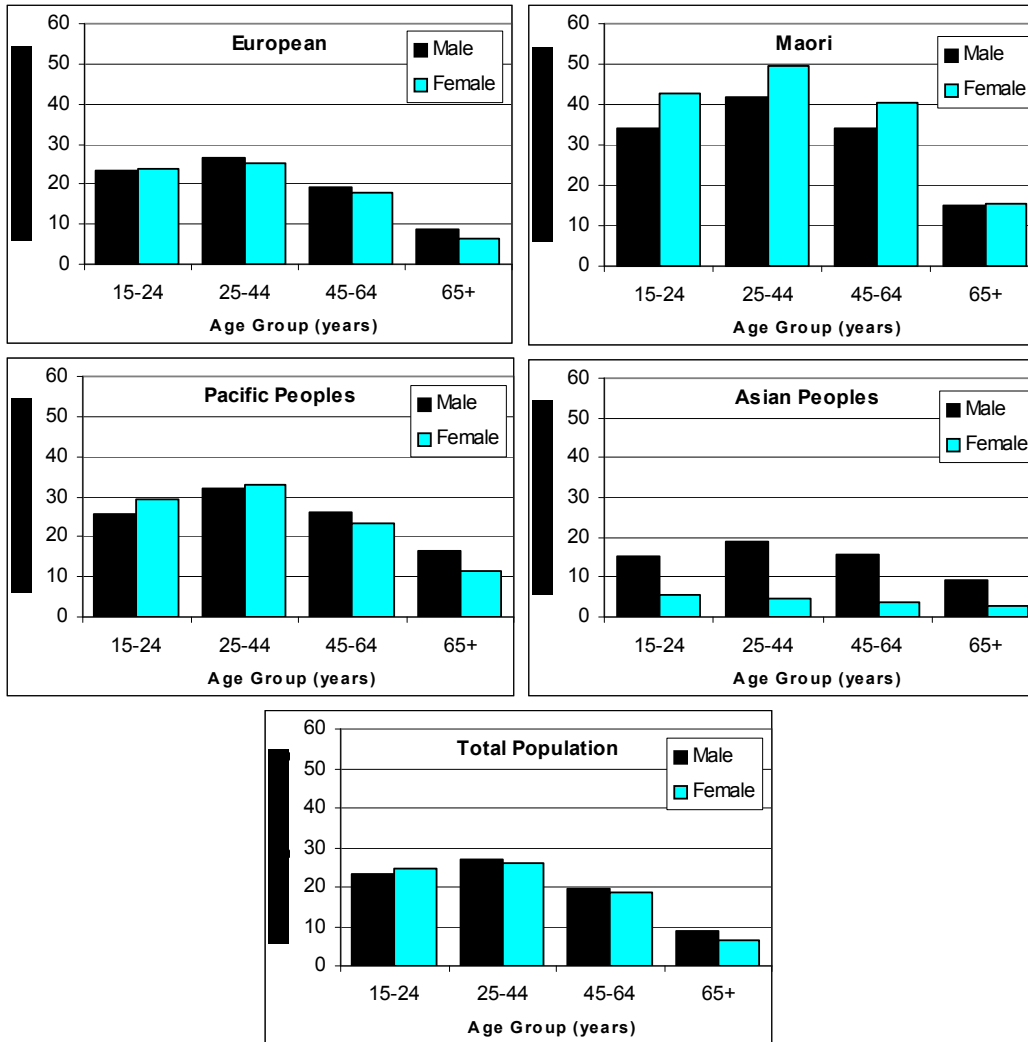
Notes: (I) Standardised to World Health Organisation Standard Population.
Source: Statistics New Zealand, 2006 Census of Population and Dwellings.

Approximately 30% of the population aged 20 - 24 years are smokers in comparison to only 8% of those aged over 65 years. Of the 15 - 19 years age group, 20% are smokers.

Māori, especially female Māori, have the highest rates of smoking. The rates for Pacific people are higher than the European population, but lower than the Māori population.

The Asian population has the lowest levels of smoking overall (Figure 1).

Figure 1: Age specific percentage smoking by age group, gender and ethnicity, Waikato DHB, 2006.



Source: Statistics New Zealand, 2006 Census of Population and Dwellings.

The territorial authorities with the highest smoking rates are Waitomo, South Waikato, Ruapehu (part) and Hauraki. Over half of all females in the 15 - 24 years age group living in Waitomo and Otorohanga smoke. In particular, Māori females in the 25 - 44 years age group living in South Waikato, Hauraki, Waitomo and Ruapehu (part) have very high rates, where over 55% are smokers (Table 2).

Wards of Waikato DHB and area units of Hamilton City territorial authority with the highest smoking rates include Te Kuiti, Ngaruawahia, Kawhia and Huntly (wards); and Crawshaw and Insoll (area units).

Table 2: Age standardised (I) percentage smoking, by gender and ethnicity, territorial authority, Waikato DHB and New Zealand, 2006.

Area	European		Māori		Pacific peoples		Total		
	Male	Female	Male	Female	Male	Female	Male	Female	Total
Thames-Coromandel	25.4	24.5	35.6	43.5	--	--	25.3	24.6	24.9
Hauraki	27.5	26.1	38.7	45.2	--	--	27.8	27.5	27.6
Waikato	23.1	20.7	37.0	42.3	31.7	34.3	23.4	23.0	23.2
Matamata-Piako	23.6	22.5	37.8	43.5	--	--	23.7	22.7	23.1
Hamilton City	19.8	18.7	31.4	37.9	23.6	20.4	19.6	18.4	18.9
Waipa	20.4	19.9	34.0	42.1	--	--	20.7	20.7	20.7
Otorohanga	25.4	22.2	35.6	46.2	--	--	25.7	26.0	25.6
South Waikato	27.9	28.1	37.8	48.4	33.7	36.1	28.1	30.4	29.2
Waitomo	26.2	25.8	38.1	47.8	--	--	28.2	31.1	29.6
Ruapehu (part)	25.9	24.4	39.8	46.9	--	--	27.2	28.2	27.6
Waikato DHB	22.3	21.0	35.1	41.9	27.5	27.2	22.3	21.7	22.0
New Zealand	20.9	19.7	34.7	41.4	30.4	23.9	20.9	19.0	19.9

Notes: -- Numbers too small for meaningful result.

(I) Standardised to World Health Organisation Standard Population.

Source: Statistics New Zealand, 2006 Census of Population and Dwellings.

12.2.2. Obesity

Overall, the prevalence of obesity in adults is increasing in New Zealand. According to projections, by the year 2011 there will be a 73% increase in the prevalence of obesity (from 22% in 2002 to 29%). This increase will dramatically impact on Māori and Pacific peoples and lead to increasingly greater disparities of the burden of diseases such as diabetes¹.

Table 3: Estimated(I) age standardised(II) percentage of the population 15 years and over with risk factors for obesity, Waikato DHB and New Zealand, 2002 - 2003.

Risk factors	All			Māori			Non-Māori		
	All	Male	Female	All	Male	Female	All	Male	Female
	Waikato DHB								
Obese(III)	22.7	23.2	22.1	31.5	33.5	29.5	21.0	21.3	20.7
Overweight(IV)	34.2	40.1	28.3	32.3	32.5	32.0	34.5	41.5	27.6
Overweight or obese(V)	56.9	63.4	50.4	63.8	66.0	61.5	55.6	62.9	48.3
New Zealand									
Obese(III)	20.1	19.2	21.0	28.3	29.0	27.5	19.1	18.0	20.2
Overweight(IV)	34.0	40.5	27.5	35.8	38.0	33.7	33.7	40.8	26.7
Overweight or obese(V)	54.0	59.7	48.5	64.1	67.0	61.2	52.9	58.8	47.0

Notes: * Significantly different from New Zealand.

(i) Figures shown are estimates based on small area estimation and not actual results.

(ii) Age standardisation is used to adjust for the differing age distributions of population subgroups. Age standardisation was performed by the direct method using the WHO World Population as the standard population.

(III) Body mass index (BMI) ≥ 30.0 for European/Other & Asian; BMI ≥ 32.0 for Māori and Pacific.

(IV) BMI 25.0-29.9 for Euro/Other & Asian; BMI 26.0-31.9 for Māori and Pacific.

(V) BMI ≥ 25.0 for European/Other & Asian; BMI ≥ 26.0 for Māori and Pacific.

Source: Ministry of Health, New Zealand Health Survey 2002 - 2003, www.phionline.moh.govt.nz on 25 May 2006.

The 2002 - 2003 New Zealand Health Survey indicated 35% of New Zealand adults were overweight and a further 21% were obese². It is estimated that 57% of Waikato DHB's population are either overweight or obese, while 22.7% of the population are classified as obese. However, approximately 65% of Māori are either obese or overweight

compared to 55% of non-Māori. Of increasing concern is childhood obesity; approximately 20% of New Zealand children are overweight and 9.8% are obese.

Overall, the amount of physical activity and fruit and vegetable consumption is similar for the Waikato DHB population compared to the New Zealand population. Only 50% of the Waikato DHB population have regular physical exercise (Table 4). For Māori and non-Māori, physical activity rates are similar. Rates for males are higher compared to females for both Māori and non-Māori populations.

Table 4: Estimated(I) age standardised(II) percentage of the population 15 years and over with risk factors, Waikato DHB and New Zealand, 2002 - 2003.

Risk factors	All			Māori			Non-Māori		
	All	Male	Female	All	Male	Female	All	Male	Female
	Waikato DHB								
Physically Active(ix)	75.7	78.0	73.6	74.0	82.6	66.4	76.1	77.2	75.0
Regularly physical active(x)	54.4	57.5	51.4	52.8	62.2	44.7	54.7	56.7	52.8
Fruit consumption(xi)	50.3	40.6	59.3	44.7	39.5	49.3	51.3	40.8	61.3
Vegetable consumption(xii)	73.1*	69.6*	76.5	71.9	72.1	71.8	73.4*	69.1*	77.4
New Zealand									
Physically active(ix)	74.0	78.4	69.9	74.9	79.7	70.7	73.9	78.2	69.8
Regularly physical active(x)	52.5	56.7	48.6	55.2	59.7	51.2	52.1	56.3	48.2
Fruit consumption(xi)	53.9	43.3	63.6	46.3	36.8	54.6	54.8	44.1	64.8
Vegetable consumption(xii)	67.3	63.3	71.1	65.6	63.4	67.6	67.6	63.3	71.5

Notes: (ix) At least 150 minutes (2.5 hours) of physical activity per week, with exercise accumulated on one or more days of the week, i.e. Physical activity is not necessarily regular.

(x) At least 150 minutes of physical activity per week, comprising at least 30 minutes on five or more days of the week i.e. Physical activity is regular.

(xi) Average of two or more servings of fruit per day.

(xii) Average of three or more servings of vegetables per day.

Source: Ministry of Health, New Zealand Health Survey 2002 - 2003, www.phionline.moh.govt.nz on May 25, 2006.

Overall, only 50% of the Waikato DHB population consume two or more servings of fruit per day (Table 4). Males (43.3%) have much lower rates of fruit consumption in comparison to females (63.6%) and Māori (44.7%) tend to eat less fruit than non-Māori (51.3%). Māori males have the lowest rates of fruit consumption (40%). Approximately 67% of the Waikato population consume three or more servings of vegetables a day. Rates for ethnicity and gender show similar trends as for fruit consumption.

12.2.3. Hypertension

Hypertension, or raised blood pressure, is a known risk factor for heart disease and stroke. A recent Auckland study estimating blood pressure prevalence, suggested that 1 in 3 Māori and Pacific people had a raised systolic blood pressure compared to one-in-five in the 'other' category. Hence adjusted for age and gender, 37% of Māori and 38% of Pacific people had a higher than average blood pressure. Interestingly when body mass index (BMI) – a measure of obesity – was taken into account, the differences between the ethnic groups became insignificant. Hence, the reason obesity is a major contributor to, and thus a modifiable risk factor for raised systolic blood pressure.

12.2.4. Diabetes

Diabetes presents a serious challenge for New Zealand and is a significant cause of ill health and premature death. New Zealand is currently experiencing a diabetes epidemic –an epidemic of obesity closely shadowed by an epidemic of type 2 diabetes³. Risk factors for type 2 diabetes are obesity and inactivity.

Overall, approximately 4% of the New Zealand and Waikato DHB population, have been diagnosed as having type 2 diabetes, with a higher proportion in males (4.8%) compared to females (3.2%) (Table 5). However, overall the rate is double for Māori (8.1%) compared to non-Māori (3.2%), with Māori males having a prevalence of diabetes three times the national prevalence at 12%. Modelling work by the Ministry of Health estimates the number of people known to be living with diabetes will increase by 80% from 1996 - 2011⁴. This will impact heavily on an already over-utilised health system and needs to be accounted for when planning services.

There is a large burden of type 2 diabetes, approximately one-third, which goes unrecognised, and thus the disparities in prevalence of disease could be even greater for Māori compared to non-Māori.

Table 5: Estimated(I) age standardised(II) percentage of the population 15 years and over with diabetes(III), Waikato DHB and New Zealand, 2002 - 2003.

Area	All			Māori			Non-Māori		
	All	Male	Female	All	Male	Female	All	Male	Female
Waikato DHB	4.0	4.8	3.2	8.1	12.3	4.3	3.2	3.4	3.0
New Zealand	4.1	4.5	3.7	8.0	9.5	6.7	3.6	4.0	3.3

Notes: (I) Figures shown are estimates based on small area estimation and not actual results.

(II) Age standardisation is used to adjust for the differing age distributions of population subgroups. Age standardisation was performed by the direct method using the WHO World Population as the standard population

(III) Diagnosed by doctor.

Source: Ministry of Health, New Zealand Health Survey 2002 - 2003, www.phionline.moh.govt.nz on 25 May 2006.

From July 2001 - June 2006, there has been approximately 3700 hospital discharges for diabetes in the Waikato DHB population; a rate of 180 discharges per 100,000 population (Table 6). Matamata-Piako territorial authority has the lowest discharge rate. The areas with the highest rates (three times the rate of Matamata-Piako) are Waitomo and Ruapehu (part).

Table 6: Number of discharges and age standardised(I) hospitalisation rates per 100,000 people, diabetes(II), by ethnicity, territorial authority, Waikato DHB and New Zealand, July 2001 - June 2006.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
	Number of discharges								
Thames-Coromandel	33	207	(136 - 277)	363	217	(195 - 239)	396	199	(180 - 219)
Hauraki	64	585	(442 - 729)	130	123	(102 - 145)	194	162	(139 - 184)
Waikato	174	529	(450 - 607)	198	98	(84 - 112)	372	155	(139 - 171)
Matamata-Piako	48	420	(301 - 538)	208	111	(96 - 126)	256	125	(110 - 141)
Hamilton	282	469	(414 - 524)	1046	171	(161 - 181)	1328	195	(185 - 206)
Waipa	60	346	(259 - 434)	349	135	(120 - 149)	409	145	(131 - 159)
Otorohanga	52	610	(444 - 776)	48	120	(86 - 154)	100	190	(153 - 227)
South Waikato	77	373	(290 - 456)	198	177	(152 - 201)	275	201	(177 - 225)
Waitomo	130	877	(726 - 1027)	72	167	(128 - 205)	202	350	(302 - 398)
Ruapehu (part)	68	580	(442 - 718)	97	231	(185 - 278)	165	300	(254 - 346)
Waikato DHB	988	487	(457 - 517)	2709	150	(144 - 156)	3697	180	(174 - 186)

Notes: CI – 95% Confidence Interval

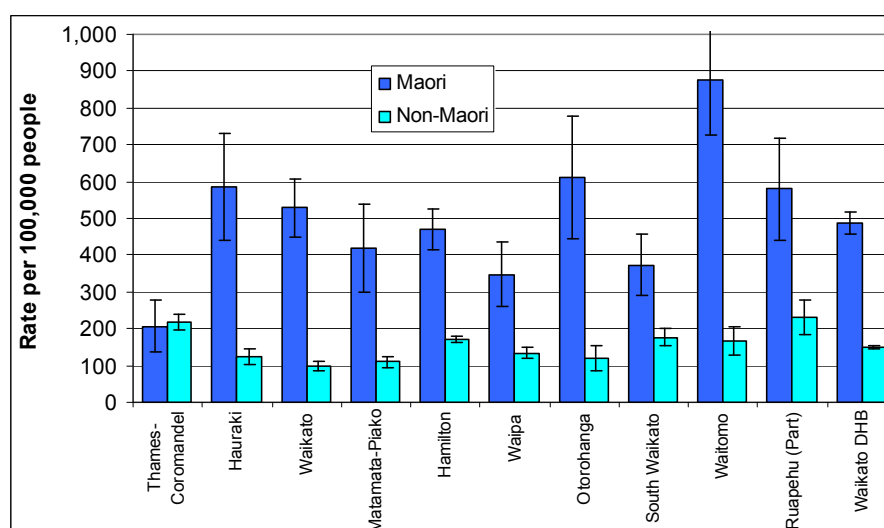
(I) Standardised to World Health Organisation Standard Population using the five-year average for July 2001 to June 2006. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

(II) Primary Diagnosis ICD10 E10-E14.

Source: Waikato DHB, Various Hospital Discharge Collections.

Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

The hospital discharge rate for Māori with diabetes (487 per 100,000) was significantly higher than for non-Māori (150 per 100,000). For all territorial authorities, except Thames-Coromandel, the rate for Māori is over three times that for non-Māori. The Māori rate for Waitomo, at 877 per 100,000, is five times the total rate for the Waikato DHB (Figure 2).

Figure 2: Age standardised(I) hospitalisation rates per 100,000 people, diabetes(II), by ethnicity, territorial authority and Waikato DHB, July 2001 - June 2006.

Notes: Line Indicates 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for July 2001 to June 2006. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

(II) Primary Diagnosis ICD10 E10-E14

Source: Waikato DHB, Various Hospital Discharge Collections. Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

12.2.5. Diabetes mortality

The mortality rate for diabetes for Waikato DHB Māori is over six times that of non-Māori (Table 7). Waitomo had the highest mortality rate (69) of all territorial authorities, followed by Waikato (60). Matamata-Piako had the lowest rate (31).

Table 7: Number of deaths (5 years) and age standardised(I) mortality rate per 100,000 people, diabetes mellitus(II), by ethnicity, territorial authority, Waikato DHB and New Zealand, 1999 - 2003.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
Thames-Coromandel	12	99	(43 -155)	106	34	(27 - 40)	118	37	(30 - 44)
Hauraki	18	286	(154 - 418)	59	40	(30 - 50)	77	52	(41 - 64)
Waikato	70	272	(208 - 336)	85	35	(27 - 42)	155	63	(53 - 73)
Matamata-Piako	16	199	(101 - 296)	62	24	(18 - 30)	78	31	(24 - 38)
Hamilton	70	221	(169 - 272)	281	37	(33 - 42)	351	47	(42 - 52)
Waipa	22	147	(86 - 209)	103	29	(23 - 34)	125	36	(30 - 43)
Otorohanga	20	273	(153 - 392)	14	25	(12 - 39)	34	59	(39 - 79)
South Waikato	29	207	(132 - 282)	50	42	(31 - 54)	79	60	(47 - 74)
Waitomo	31	266	(172 - 359)	12	20	(9 - 32)	43	69	(48 - 89)
Ruapehu (part)	18	164	(88 - 240)	20	31	(17 - 45)	38	60	(41 - 79)
Waikato DHB	306	215	(191 - 239)	792	34	(31 - 36)	1098	47	(44 - 50)
New Zealand	2081	171	(164 - 178)	9463	33	(33 - 34)	11,544	41	(40 - 42)

Notes: CI – 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for 1999 - 2003.

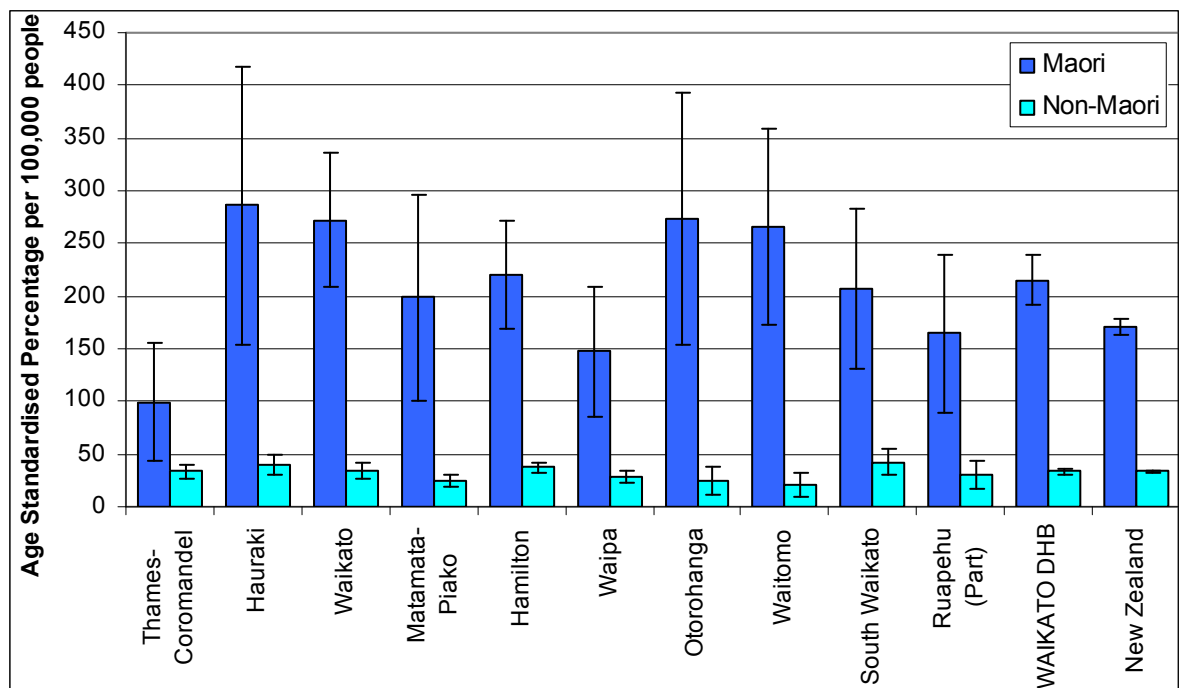
(II) ICD9 250 (1999), ICD10 E10-E14 (2000-2003(III)), Underlying and any contributing cause of death.

Source: New Zealand Health Information Service, National Minimum Data Set – Mortality.

Statistics New Zealand, 2001 Census of Population and Dwellings.

All territorial authorities show over five times the rates for Māori compared to non-Māori in the incidence of diabetes, except for Thames-Coromandel, which shows only three times the rate (Figure 3).

Figure 3: Age standardised(I) mortality rate per 100,000 people, diabetes mellitus(II), by ethnicity, territorial authority, Waikato DHB and New Zealand, 1999 - 2003.



Notes: Lines Indicate the 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for 1999 - 2003.

(II) ICD9 250 (1999), ICD10 E10-E14 (2000 – 2003), Underlying and any contributing cause of death.

Source: New Zealand Health Information Service, National Minimum Data Set – Mortality.

Statistics New Zealand, 2001 Census of Population and Dwellings.

12.2.6. Chronic obstructive pulmonary disease

From July 2001 - June 2006, the overall rate of hospital discharges for chronic obstructive pulmonary disease (COPD) in the Waikato DHB region was 196 per 100,000 (Table 8). The rate of discharges for Māori within the Waikato DHB (643 per 100,000) was four times higher than non-Māori (151 per 100,000).

There are also differences seen amongst the territorial authorities of the DHB region. The territorial authorities with lower rates of chronic obstructive pulmonary disease discharges are Waipa, Thames-Coromandel and Matamata-Piako. The areas with higher chronic obstructive pulmonary disease discharge rates are Ruapehu (part), South Waikato, Waitomo and Hauraki.

For each territorial authority, the rate for Māori is considerable higher than the non-Māori rate.

Table 8: Number of discharges and age standardised(I) hospitalisation rates per 100,000 people, chronic obstructive pulmonary disease(II), by ethnicity, territorial authority and Waikato DHB, July 2001 - June 2006.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
Thames-Coromandel	43	274	(192 - 355)	393	133	(120 - 146)	436	140	(127 - 154)
Hauraki	71	736	(565 - 908)	264	190	(167 - 213)	335	227	(203 - 252)
Waikato	268	835	(735 - 935)	266	118	(104 - 132)	534	212	(194 - 230)
Matamata-Piako	46	410	(291 - 528)	171	74	(63 - 85)	217	94	(82 - 107)
Hamilton	306	601	(533 - 668)	1186	167	(158 - 177)	1492	204	(194 - 214)
Waipa	59	365	(272 - 458)	365	119	(107 - 131)	424	134	(121 - 147)
Otorohanga	43	488	(342 - 634)	51	108	(78 - 137)	94	173	(138 - 208)
South Waikato	96	547	(438 - 656)	241	187	(164 - 211)	337	230	(205 - 255)
Waitomo	116	929	(760 - 1098)	141	283	(236 - 329)	257	412	(362 - 462)
Ruapehu (part)	125	1071	(883 - 1259)	241	482	(421 - 543)	366	612	(550 - 675)
Waikato DHB	1173	643	(606 - 680)	3319	151	(146 - 156)	4492	196	(190 - 201)
New Zealand	43	274	(192 - 355)	393	133	(120 - 146)	436	140	(127 - 154)

Notes: CI – 95% Confidence Interval.

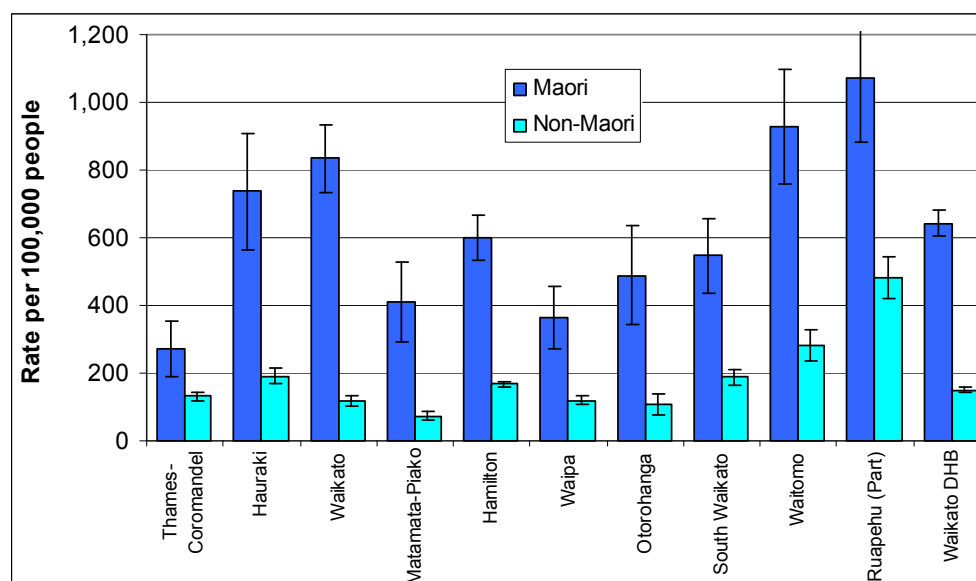
(I) Standardised to World Health Organisation Standard Population using the five year average for 1999 - 2003. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

(II) Primary Diagnosis ICD10 J40-J44.

Source: Waikato DHB, Various Hospital Discharge Collections.

Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

Figure 4: Age standardised(I) hospitalisation rates per 100,000 people, chronic obstructive pulmonary disease (II), by ethnicity, territorial authority and Waikato DHB, July 2001 - June 2006.



Line Indicates 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for 1999-2003. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

(II) Primary Diagnosis ICD10 J40-J44

Source: Waikato DHB, Various Hospital Discharge Collections. Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

Chronic obstructive pulmonary disease mortality

From 1999 - 2003, there were a total of 697 deaths from chronic obstructive pulmonary disease; a mortality rate of 29 per 100,000, which is comparable to the New Zealand

rate. However the total Waikato rate for Māori (65 per 100,000) was three times the total rate for non-Māori (26 per 100,000). The territorial authorities with highest rates are Hauraki (40) and Ruapehu (part) (37). The area with the lowest rate is Matamata-Piako. Waipa (102) has the highest Māori mortality rate, which is five times the total Waikato DHB regional rate.

Table 9: Number of deaths (5 years) and age standardised(I) mortality rate per 100,000 people, chronic obstructive pulmonary disease(II), by ethnicity, territorial authority, Waikato DHB and New Zealand, 1999 - 2003.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
Thames-Coromandel	3	19	(0 - 41)	74	23	(18 - 29)	77	24	(19 - 29)
Hauraki	2	35	(0 - 83)	59	41	(31 - 52)	61	40	(30 - 50)
Waikato	15	72	(35 - 108)	74	30	(23 - 37)	89	34	(27 - 41)
Matamata-Piako	4	75	(1 - 148)	50	19	(14 - 25)	54	20	(15 - 26)
Hamilton	27	80	(50 - 110)	188	24	(21 - 28)	215	28	(24 - 31)
Waipa	14	102	(48 - 155)	84	23	(18 - 28)	98	28	(22 - 34)
Otorohanga	5	53	(7 - 100)	12	22	(10 - 35)	17	29	(15 - 43)
South Waikato	8	58	(18 - 98)	36	29	(20 - 39)	44	33	(23 - 42)
Waitomo	5	39	(5 - 73)	13	24	(11 - 38)	18	29	(16 - 42)
Ruapehu (part)	11	98	(40 - 155)	13	21	(9 - 32)	24	37	(22 - 51)
Waikato DHB	94	65	(52 - 79)	603	26	(24 - 28)	697	29	(27 - 31)
New Zealand	703	64	(59 - 68)	7374	25	(25 - 26)	8,077	27	(26 - 28)

Notes: CI – 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for 1999 - 2003.

(II) ICD9 490-492, 496 (1999), ICD10 J40-J44 (2000 - 2003).

Sources: New Zealand Health Information Service, National Minimum Data Set – Mortality. Statistics New Zealand, 2001 Census of Population and Dwellings.

12.2.7. Asthma

New Zealand has one of the highest prevalences of asthma and the highest rates of hospital admission for asthma in the world, particularly amongst Māori and Pacific adults. In this country, asthma affects 15 - 20% of children and adults and is rated as the number one cause of years lost to disability in males and the third-highest ranking cause in females.

From July 2001 - June 2006, the overall rate of discharges for asthma in the Waikato DHB region was 190 per 100,000 (Table 10). The rate in Māori (373 per 100 000) was four times higher than non-Māori (137 per 100,000). The territorial authorities with the lowest discharge rate for asthma are Thames-Coromandel followed by Hauraki, Matamata-Piako and Otorohanga. Ruapehu (part) has the highest rate of discharges, followed by Hamilton City and Waitomo.

Table 10: Number of discharges and age standardised(I) hospitalisation rates per 100,000 people, asthma(II), by ethnicity, territorial authority, Waikato DHB and New Zealand, July 2001 - June 2006.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
Thames-Coromandel	40	196	(135 - 257)	64	74	(56 - 92)	104	101	(82 - 120)
Hauraki	40	250	(173 - 328)	69	116	(89 - 143)	109	137	(112 - 163)
Waikato	246	425	(372 - 479)	140	104	(87 - 121)	386	193	(174 - 213)
Matamata-Piako	56	272	(201 - 343)	132	116	(96 - 136)	188	138	(119 - 158)
Hamilton	585	474	(435 - 512)	743	171	(158 - 183)	1328	233	(220 - 245)
Waipa	84	274	(216 - 333)	204	126	(109 - 143)	288	152	(134 - 169)
Otorohanga	42	337	(235 - 439)	16	54	(28 - 80)	58	133	(99 - 168)
South Waikato	88	230	(182 - 278)	93	125	(99 - 150)	181	158	(135 - 181)
Waitomo	65	345	(261 - 429)	43	149	(104 - 193)	108	233	(189 - 277)
Ruapehu (part)	88	512	(405 - 619)	64	217	(164 - 270)	152	346	(291 - 400)
Waikato DHB	1334	373	(353 - 393)	1568	137	(130 - 143)	2902	190	(183 - 197)

Notes: CI – 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for 1999 - 2003. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

(II) Primary Diagnosis ICD10 J45, J46.

Sources: Waikato DHB, Various Hospital Discharge Collections.

Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

Asthma mortality

From 1999 - 2003, the number of deaths from asthma in the Waikato DHB area and New Zealand as a whole is low; a rate of 2.2 per 100,000 (Table 11). The burden of disease lies in morbidity. However, for Waikato, the total death rate for asthma was three times higher in Māori (5.3) than non-Māori (1.8).

Table 11: Number of deaths (5 years) and age standardised(I) mortality rate per 100,000 people, asthma(II), by ethnicity, Waikato DHB and New Zealand, 1999 - 2003.

Ethnicity	Waikato DHB			New Zealand		
	#	Rate	CI	#	Rate	CI
Māori	11	5.3	(2.2 - 8.5)	97	6.5	(5.2 - 7.7)
Non-Māori	32	1.8	(1.2 - 2.4)	417	1.6	(1.5 - 1.8)
Total	43	2.2	(1.6 - 2.9)	514	2.0	(1.8 - 2.2)

Notes: CI – 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for 1999-2003.

(II) ICD9 493 (1999), ICD10 J45-J46 (2000-2003).

Sources: New Zealand Health Information Service, National Minimum Data Set – Mortality. Statistics New Zealand, 2001 Census of Population and Dwellings.

12.2.8. Cancer

Breast cancer

The overall rate of breast cancer registrations for the Waikato DHB population is 100 per 100,000 for the female population (Table 12). The Māori registration rate (105 per 100,000) is similar to the non-Māori rate (99 per 100,000). However, the mortality rate for Māori (40 per 100,000) is twice that for non-Māori (20 per 100,000) (Table 13).

Cervical cancer

The overall registration rate for cervical cancer for the Waikato DHB is 6 per 100,000 of female population (Table 12). The Māori rate (10 per 100,000) is slightly higher than the non-Māori rate (6 per 100,000). The cervical cancer mortality rate is very low.

Prostate cancer

The total rate of prostate cancer registration for the male Waikato DHB population is 101 per 100,000 (Table 12). The Māori (98 per 100,000) and non-Māori rates (103 per 100,000) are similar. However, the mortality rate for Māori (43 per 100,000) is double that for non-Māori (26 per 100,000) (Table 13).

Lung cancer

The total lung cancer registration rate for Waikato DHB population is 36 per 100,000 population (Table 12). The Māori rate (97 per 100,000) is three times the non-Māori rate (29 per 100,000) and the mortality rate for Māori (84 per 100,000) is three times that of non-Māori (25 per 100,000) (Table 14).

Colorectal cancer

The total rate of colorectal cancer registration for the Waikato population is comparable to the national rates (Table 12). Ruapehu (part) and Waitomo territorial authorities have the highest rates, but actual numbers are relatively low.

Melanoma

The overall melanoma registration rate for Waikato DHB population is 42 per 100,000 (Table 12). The rate for non-Māori (48 per 100,000) is 10 times the Māori rate (4 per 100,000).

Table 12: Number of registrations, by selected cancer groups and ethnicity, territorial authority and Waikato DHB, 2001 - 2005.

Area	Māori	Non-Māori	Total	Māori	Non-Māori	Total	Māori	Non-Māori	Total
	Breast (C50)			Cervical (C53)			Prostate (C61)		
Thames-Coromandel	6	93	99	1	6	7	4	125	129
Hauraki	6	64	70	0	4	4	2	62	64
Waikato	15	89	104	0	4	4	11	101	112
Matamata-Piako	4	122	126	1	0	1	5	78	83
Hamilton City	42	330	372	7	21	28	12	348	360
Waipa	16	132	148	0	3	3	7	136	143
Otorohanga	7	12	19	0	2	2	0	20	20
South Waikato	16	48	64	0	2	2	14	68	82
Waitomo	7	21	28	1	1	2	9	24	33
Ruapehu (part)	4	20	24	3	0	3	4	32	36
Waikato DHB	123	931	1,054	13	43	56	68	994	1,062
Rate per 100,000 people(l)	105	99	100	10	6	6	98	103	101
Confidence Interval	96 - 114	96 - 102	97-103	7-13	5-7	5-7	86-110	100-106	98-104
	Colorectal (C18-C21)			Lung (C33-C34)			Melanoma (C43)		
Thames-Coromandel	4	147	151	13	82	95	0	117	117
Hauraki	1	84	85	12	59	71	0	52	52
Waikato	10	102	112	38	52	90	0	81	81
Matamata-Piako	8	115	123	12	65	77	0	70	70
Hamilton City	17	350	367	49	204	253	3	335	338
Waipa	6	166	172	9	61	70	1	108	109
Otorohanga	3	21	24	6	9	15	1	16	17
South Waikato	2	62	64	14	36	50	1	39	40
Waitomo	5	30	35	18	21	39	1	20	21
Ruapehu (part)	2	29	31	10	20	30	0	23	23
Waikato DHB	58	1,106	1,164	181	609	790	7	861	868
Rate per 100,000 people(l)	32	53	51	97	29	36	4	48	42
Confidence Interval	28 - 36	51 - 54	49 - 52	90 - 105	28 - 30	34 - 37	3 - 6	46 - 49	41 - 44

Notes: (l) Standardised to World Health Organisation Standard Population. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.
Sources: New Zealand Health Information Service, National Minimum Data Set – Cancer Registrations.
Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

Table 13: Number of deaths (5 years) by selected causes of cancer and ethnicity, territorial authority, Waikato DHB and New Zealand, 1999 - 2003.

Area	Breast			Prostate			Colorectal		
	Māori	Non-Māori	Total	Māori	Non-Māori	Total	Māori	Non-Māori	Total
Thames-Coromandel	2	25	27	2	40	42	1	50	51
Hauraki	2	12	14	0	16	16	1	31	32
Waikato	6	22	28	5	39	44	2	39	41
Matamata-Piako	3	18	21	0	22	22	1	36	37
Hamilton	17	70	87	7	74	81	6	133	139
Waipa	4	33	37	3	34	37	5	58	63
Otorohanga	3	2	5	1	6	7	0	5	5
South Waikato	3	5	8	1	11	12	4	24	28
Waitomo	1	1	2	1	4	5	2	14	16
Ruapehu (part)	1	3	4	2	6	8	1	12	13
Waikato DHB	42	191	233	22	252	274	23	402	425
Waikato DHB rates per 100,000	40	20	22	43	26	27	15	19	19
New Zealand	331	2815	3146	149	2728	2877	248	5450	5698

Source: New Zealand Health Information Service, National Minimum Data Set – Mortality.

Table 14: Number of deaths (5 years) and age standardised(I) mortality rate per 100 000 people, lung cancer(II), by ethnicity, territorial authority, Waikato DHB and New Zealand, 1999 – 2003.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
Thames-Coromandel	11	89	(62 - 116)	65	24	(21 - 27)	76	27	(24 - 30)
Hauraki	11	104	(73 - 135)	41	32	(27 - 37)	52	40	(34 - 45)
Waikato	27	86	(69 - 102)	46	21	(18 - 25)	73	31	(28 - 35)
Matamata-Piako	4	66	(33 - 100)	56	26	(22 - 29)	60	27	(23 - 30)
Hamilton	29	74	(61 - 88)	170	27	(25 - 29)	199	30	(28 - 32)
Waipa	8	47	(30 - 64)	55	19	(17 - 22)	63	22	(19 - 24)
Otorohanga	6	71	(42 - 99)	7	16	(10 - 21)	13	25	(18 - 31)
South Waikato	13	69	(50 - 88)	38	32	(27 - 37)	51	38	(32 - 43)
Waitomo	16	129	(97 - 161)	10	19	(13 - 24)	26	42	(34 - 50)
Ruapehu (part)	14	116	(85 - 147)	11	20	(14 - 26)	25	43	(34 - 51)
Waikato DHB	139	84	(77 - 91)	499	25	(24 - 26)	638	30	(29 - 31)
New Zealand	1103	85	(82 - 87)	6119	25	(24 - 25)	7222	28	(28 - 28)

Notes: CI – 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for 1999-2003.

(II) ICD9 162 (1999), ICD10 C33-C34 (2000-200(III)).

Source: New Zealand Health Information Service, National Minimum Data Set – Mortality

12.2.9. Ischaemic heart disease

From July 2001 - June 2006, the overall Waikato DHB region discharge rate for ischaemic heart disease (IHD) is 390 per 100,000 people, which equates to approximately 1,774 discharges for ischaemic heart disease annually (Table 15). The discharge rate for Māori is significantly higher than for non-Māori; a rate of 445 compared to 380 per 100,000 people.

The Māori rate is higher than non-Māori for all territorial authorities except Thames-Coromandel, Hauraki and South Waikato. Highest rates of discharges for Māori are in Ruapehu (part) (727), Waitomo (587), South Waikato (467) and Otorohanga (502), with the lowest in Matamata-Piako (362) and Waikato (365).

Table 15: Number of discharges and age standardised(I) hospitalisation rates per 100,000 people, ischaemic heart disease(II), by ethnicity, territorial authority, Waikato DHB, July 2001 - June 2006.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
Thames-Coromandel	61	408	(305 - 510)	1242	489	(462 - 516)	1303	480	(454 - 506)
Hauraki	52	433	(315 - 551)	618	463	(426 - 499)	670	472	(436 - 508)
Waikato	128	365	(302 - 429)	648	290	(268 - 313)	776	305	(283 - 326)
Matamata-Piako	38	362	(247 - 477)	689	307	(284 - 330)	727	311	(288 - 334)
Hamilton	219	427	(371 - 484)	2515	366	(351 - 380)	2734	374	(360 - 388)
Waipa	66	375	(284 - 465)	1064	355	(333 - 376)	1130	360	(339 - 381)
Otorohanga	41	502	(348 - 655)	130	282	(233 - 330)	171	312	(265 - 358)
South Waikato	94	467	(372 - 561)	612	483	(445 - 522)	706	491	(455 - 527)
Waitomo	81	587	(459 - 715)	217	429	(371 - 486)	298	476	(422 - 530)
Ruapehu (part)	78	727	(566 - 889)	278	540	(477 - 604)	356	587	(526 - 648)
Waikato DHB	858	445	(415 - 475)	8013	380	(372 - 389)	8871	390	(382 - 398)

Notes: CI – 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for July 2001 to June 2006. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

(II) Primary Diagnosis ICD10 I20-I25

Source: Waikato DHB, Various Hospital Discharge Collections. Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

Coronary operations

From July 2001 - June 2006, approximately 700 coronary artery bypass grafts were carried out on people living within the Waikato DHB region (rate 33.3 per 100,000); an estimated 120 coronary artery bypass grafts per year (Table 16). The rate of coronary artery bypass grafts from Māori (31.4 per 100,000) is similar to that of non-Māori (31.4 per 100,000).

From July 2001 - June 2006, overall 127 percutaneous trans-luminal coronary angioplasties were carried out on Waikato DHB population from July 2001 - June 2006 (rate 7.1 per 100,000); an estimated 15 procedures per year. The percutaneous trans-luminal coronary angioplasty rate for Māori (5.9 per 100,000) is slightly less than that of non-Māori (7.2 per 100,000).

Table 16: Selected coronary operation, number of discharges (5 years) by territorial authority and rate per 100,000 people for Waikato DHB, July 2001 - June 2006.

Area	Coronary artery bypass(I)			Percutaneous transluminal coronary artery(II)		
	Māori	Non-Māori	Total	Māori	Non-Māori	Total
Thames-Coromandel	1	78	79	1	7	8
Hauraki	4	42	46	1	1	2
Waikato	7	69	76	2	13	15
Matamata-Piako	5	69	74	1	20	21
Hamilton	25	197	222	4	49	53
Waipa	9	94	103	1	22	23
Otorohanga	3	14	17	1	1	2
South Waikato	6	40	46	1	11	12
Waitomo	3	13	16	0	8	8
Ruapehu (part)	3	17	20	0	3	3
Waikato DHB	66	633	699	12	135	147
Rate(III)	31.4	33.1	33.3	5.9	7.2	7.1
95% Confidence Interval	(23.8 - 38.9)	(30.5 - 35.7)	(30.8 - 35.8)	(2.6 - 9.2)	(6.0 - 8.4)	(5.9 - 8.2)

Notes: (I) Procedure Code ICD10 384.97, 385.00, 385.03

(II) Procedure Code ICD10 353.04, 353.05

(III) Standardised to World Health Organisation Standard Population using the five year average for July 2001 to June 2006. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

Source: Waikato DHB, Various Hospital Discharge Collections. Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

12.2.10. Cerebrovascular disease

Cerebrovascular disease (stroke) is the third leading cause of death in New Zealand and is the single most important cause of adult disability⁵. Stroke attack rates are significantly higher in Māori, Pacific and Asian/other ethnicities than for New Zealand European. The mean age of incidence of stroke is a full decade earlier for Pacific and Asian and for Māori even earlier at 60.7 years, compared to 75.6 years in European. The same study showed that there has been a decrease in European stroke incidence of about 19% over the past 20 years. However, there has not been a similar decrease noted for Māori and the rates for Pacific peoples have increased by 66%. If there is no change in stroke incidence or fatality, there is expected to be a 57% increase in stroke mortality from 1991 - 2011.

From July 2001 - June 2006, the total number of discharges for stroke in the Waikato DHB population was 146 per 100,000 (Table 17). The Māori rate (256 per 100,000) was twice the non-Māori rate (134 per 100,000). For all territorial authorities, the Māori rate is higher than non-Māori rate. The area Māori and non-Māori rates are seen in Ruapehu (part) and Waitomo.

Table 17: Number of discharges (5 years) and age standardised(I) hospitalisation rates per 100,000 people, cerebrovascular disease(II), by ethnicity, territorial authority, Waikato DHB, July 2001 - June 2006.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
Thames-Coromandel	29	178	(113 - 242)	361	128	(115 - 142)	390	134	(120 - 147)
Hauraki	26	281	(173 - 389)	199	152	(131 - 173)	225	159	(138 - 180)
Waikato	69	216	(165 - 267)	233	105	(91 - 118)	302	119	(105 - 132)
Matamata-Piako	29	296	(188 - 404)	234	95	(83 - 107)	263	105	(92 - 118)
Hamilton	139	277	(231 - 324)	1029	143	(134 - 151)	1168	154	(145 - 162)
Waipa	27	146	(91 - 201)	469	142	(129 - 154)	496	146	(133 - 159)
Otorohanga	13	151	(69 - 234)	57	122	(90 - 153)	70	126	(97 - 156)
South Waikato	52	267	(194 - 340)	183	147	(126 - 169)	235	167	(146 - 188)
Waitomo	38	296	(202 - 391)	97	210	(168 - 252)	135	220	(183 - 257)
Ruapehu (part)	53	527	(385 - 669)	99	199	(160 - 238)	152	258	(217 - 299)
Waikato DHB	475	256	(233 - 279)	2961	134	(129 - 139)	3436	146	(141 - 151)

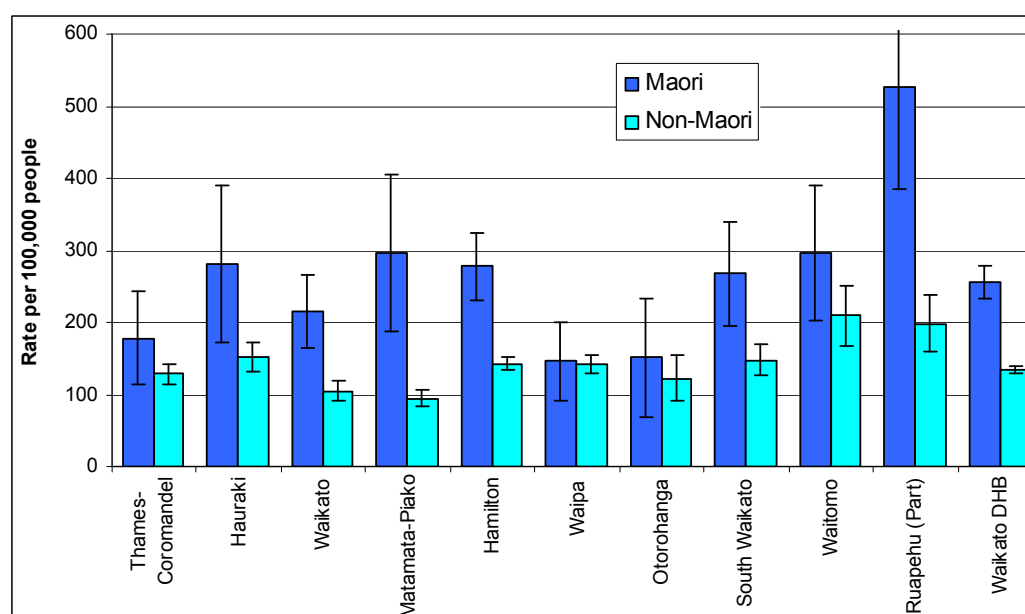
Notes: CI – 95% Confidence Interval.

(I) Standardised to World Health Organisation Standard Population using the five year average for July 2001 to June 2006. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

(II) Primary Diagnosis ICD10 I60-I69.

Source: Waikato DHB, Various Hospital Discharge Collections. Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

Figure 5: Age standardised(I) hospitalisation rates per 100,000 people, cerebrovascular disease(II), by ethnicity, territorial authority, Waikato DHB and New Zealand, July 2001 - June 2006.



Notes: Lines Indicate 95% Confidence Interval.

(I) Standardised to World Health Organisation Standard Population using the five year average for July 2001 to June 2006. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

(II) Primary Diagnosis ICD10 I60-I69.

Source: Waikato DHB, Various Hospital Discharge Collections. Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings

Stroke mortality

From 1999 - 2003, the overall Waikato DHB mortality rate for stroke was 45 per 100,000 (Table 18). The Māori rate (73 per 100,000) is approximately twice the non-Māori (42 per 100,000).

Table 18: Number of deaths (5 years) and age standardised(I) mortality rate per 100,000 people, cerebrovascular disease(II), by ethnicity, territorial authority, Waikato DHB and New Zealand, 1999 - 2003.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
Thames-Coromandel	6	83	(17 - 150)	113	36	(30 - 43)	119	36	(30 - 43)
Hauraki	3	31	(0 - 65)	80	54	(42 - 66)	83	54	(42 - 65)
Waikato	9	31	(11 - 51)	97	38	(30 - 45)	106	39	(32 - 47)
Matamata-Piako	6	161	(32 - 290)	134	48	(40 - 56)	140	49	(41 - 57)
Hamilton	22	71	(42 - 101)	308	36	(32 - 40)	330	38	(34 - 43)
Waipa	7	52	(13 - 90)	201	52	(45 - 59)	208	53	(46 - 60)
Otorohanga	4	48	(1 - 95)	24	46	(28 - 65)	28	48	(30 - 65)
South Waikato	8	66	(20 - 112)	59	51	(38 - 64)	67	52	(39 - 64)
Waitomo	12	113	(49 - 177)	26	46	(28 - 63)	38	59	(40 - 77)
Ruapehu (part)	15	164	(81 - 247)	23	35	(20 - 49)	38	57	(39 - 76)
Waikato DHB	92	73	(58 - 87)	1065	42	(40 - 45)	1157	45	(42 - 47)
New Zealand	679	62	(57 - 67)	13,082	41	(41 - 42)	13,761	43	(42 - 43)

Notes: CI – 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for 1999-2003.

(II) ICD9 430-438 (1999), ICD10 I60-I69 (2000-2003(III)).

Source: New Zealand Health Information Service, National Minimum Data Set – Mortality. Statistics New Zealand, 2001 Census of Population and Dwellings.

12.3. Health priorities

Common modifiable risk factors for the chronic diseases discussed below include smoking, obesity, cancer, hypertension, nutrition and physical activity. Many of these modifiable risk factors are identified health priorities.

12.3.1. Smoking

It is estimated that smoking causes approximately 5000 deaths annually in New Zealand. Cigarette smoking is associated with an increase in the risk of developing ischaemic heart disease, stroke and peripheral vascular disease. It is thought to be the single most preventable cause of heart disease.

Environmental tobacco smoke contributes to illness and death from a number of respiratory diseases including lung cancer, asthma and chronic obstructive pulmonary disease. Smoking causes about 87% of lung cancer deaths and is responsible for most cancers of the larynx, oral cavity, pharynx, oesophagus and bladder⁶. In addition, it is a risk factor for kidney, pancreatic, cervical and stomach cancers and acute myeloid leukaemia.

New Zealand is currently experiencing an epidemic of smoking-related lung diseases and smoking is also a major contributor to inequalities in health. Lung cancer rates among Māori are the highest in the world and it is likely that smoking is a major reason for higher Māori and Pacific rates of respiratory infections and otitis media (glue ear). The relatively high hospitalisation rate for asthma among Māori and Pacific peoples is also likely to be associated with smoking and/or higher exposure to second-hand smoke⁷. In addition, second-hand smoke exacerbates many respiratory conditions such

as asthma, emphysema and cystic fibrosis. Second-hand smoke also increases the chance of hospitalisation in children in their first year of life, increases the susceptibility to coughs, cold and wheezes and increases the chance of children becoming smokers themselves.

Once a person stops smoking, the risk of a coronary event reduces to the level of a non-smoker within five years. In those people with existing heart disease, cessation reduces the risk of death by half^{8, i}.

12.3.2. Obesity

Obesity is the major cause of type 2 diabetes. It is a major cause of heart disease, stroke, kidney disease and some cancers. Research suggests that in women, obesity increases the risk of various types of cancer, including colon, breast (postmenopausal), endometrial (womb), cervical, ovarian and gallbladder cancers. In men, obesity increases the risk of colorectal and prostate cancer. The clearest association is cancer of the colon for which obesity increases the risk by nearly three times in both men and women. Obesity is estimated to account for 20% of cancer deaths in women⁹. It is estimated that the direct cost of obesity to the health system for 2000/01 was at least \$247.1 million.

Obesity has been identified as a major global and New Zealand public health problem. New Zealand is thought to be in the middle of an obesity epidemic. A recent health select committee report and the government's response highlight the need for a joined up approach to halt this increase and reduce this significant burden⁴.

Poor nutrition contributes to 33% of all cancer deaths¹⁰, while poor diet is related to 30% of life years lost in early death and disability¹¹. An increase in physical activity is linked to reduced rates of disease and disability and increased quality of life¹². For most people, the easiest and most acceptable forms of physical activity are those that can be fitted into everyday life; these can include walking or cycling instead of driving and participation in recreational activities such as sport¹².

Better diabetes services and cardiovascular services is one of six health targets issued by the Ministry of Health in 2009¹³. This includes increasing the percentage of people in all population groups:

- Estimated to have diabetes accessing free annual checks

ⁱ This count includes only people who smoke tobacco cigarettes, not those who smoke pipes, cigars or cigarillos.

- On the diabetes register who have good diabetes management
- On the diabetes register who have had retinal screening in the past two years; and
- There will be improved equity for all population groups in relation to diabetes management

12.3.3. Respiratory

Respiratory diseases are a significant contributor to mortality and morbidity in New Zealand (chronic obstructive pulmonary disease in particular). In 1996, respiratory disease represented 6% of all premature mortality in New Zealand and 12% of the non-fatal disease burden¹⁴. Reduction of respiratory disease, particularly as related to tobacco smoking, is also a Ministry of Health and district health board priority.

Chronic obstructive pulmonary disease

Many people with chronic obstructive pulmonary disease suffer acute episodes of exacerbation requiring repeated primary care visits or hospitalisation. Exacerbations may be precipitated by respiratory infection, environmental exposures and co-morbid conditions, but may be reduced through Influenza immunisations and some drugs.

In 1997, chronic obstructive pulmonary disease was ranked third overall in its impact on the health of New Zealanders, after ischaemic heart disease and stroke¹⁵. Each year in New Zealand, chronic obstructive pulmonary disease is responsible for significant morbidity (approximately 1.5% of all hospital bed-days along with GP visits and medications) and years of disability and of greatly reduced quality of life (often as a result of reduced activity levels). Chronic obstructive pulmonary disease also ranks as the fourth most common cause of death for New Zealanders after cancer, heart disease and stroke.

12.3.4. Cancer

Cancer is a leading cause of death and illness in New Zealand. The wide range of cancer treatments and associated services reflects the biological diversity of cancer¹⁶.

Breast cancer

From July 2005 - June 2007, 55% of the eligible Waikato women aged 45-69 years were screened by Breast Screening Midland. However, only 32% of eligible Māori and 38% of eligible Pacific peoples were screened compared to 60% of the 'other' category. Total territorial authority coverage rates for Māori and Pacific (where available) are lower than the rates for 'other' (Table 19). Very low coverage occurs in the territorial authorities of Ruapehu, Matamata-Piako and Waikato. The area with the highest coverage is Waipa at 71% however, this represents the high screening rates for 'other' (79%); the total eligible Māori screened was only 33%.

Table 19: Percentage of eligible women aged 45 - 69 years by ethnicity screened by Breast Screen Midland 1 July 2005 to 30 June 2007 (areas where target of >70% coverage achieved are highlighted in bold).

Area	Māori	Other	Pacific peoples	Total
Hamilton City	31%	62%	36%	57%
Hauraki	39%	65%	48%	61%
Matamata-Piako	17%	38%	20%	36%
Otorohanga	36%	64%	100%	58%
Ruapehu	22%	40%	27%	34%
South Waikato	35%	62%	40%	55%
Thames-Coromandel	46%	58%	53%	56%
Waikato	34%	52%	28%	49%
Waipa	33%	79%	38%	74%
Waitomo	33%	60%	60%	52%
Waikato DHB	32%	60%	38%	55%

Source: Breast Screen Midland, Waikato DHB

12.3.5. Cardiovascular diseases

Cardiovascular diseases are diseases affecting the heart and circulatory system. They include IHD, Rheumatic heart disease, cerebrovascular disease and other forms of vascular and heart disease. Cardiovascular disease is the leading cause of death in New Zealand, accounting for 41% of all deaths in 1999. It is also the leading cause of years lost to premature mortality, accounting for 33% of life years lost between 45 - 64 years of age.

12.3.6. Ischaemic heart disease

Although ischaemic heart disease is declining in New Zealand, it still results in the highest number of deaths (91 per 100,000). It is the second leading cause of death following cancer. Coronary heart disease accounted for 23% of all deaths in 1999, of which just over 52% were attributable to myocardial infarction. Eighty-five percent of ischaemic heart disease deaths occur in those over 65 years¹⁷.

A recent paper suggested that the rate of ischaemic heart disease (age group 35 - 74 years) which has been falling since the 1960s, will slow among sexes and major ethnic groups. Indeed the burden is expected to increase in Māori. This will generally be due to the emergence of the epidemic of obesity and type 2 diabetes.

It is suggested that the rates of interventions for Māori should be higher than— at least twice as high as for non-Māori, considering the higher rates for Māori of ischaemic heart disease risk factors and discharges from hospital (

Table 20). This perceived inequity requires further in-depth analysis.

Table 20: Number of discharges and age standardised(I) hospitalisation rates per 100,000 people, ischaemic heart disease(II), by gender and ethnicity, territorial authority, Waikato DHB, July 2001 - June 2006.

Area	Māori				Non-Māori			
	Males		Females		Males		Females	
	Rate	CI	Rate	CI	Rate	CI	Rate	CI
	Number of Discharges							
Thames-Coromandel	512	(338 - 687)	351	(221 - 481)	649	(603 - 694)	330	(299 - 360)
Hauraki	475	(296 - 654)	390	(237 - 542)	656	(592 - 720)	279	(241 - 316)
Waikato	362	(270 - 455)	371	(284 - 459)	395	(357 - 433)	189	(164 - 213)
Matamata-Piako	425	(229 - 621)	304	(171 - 437)	403	(364 - 442)	216	(191 - 241)
Hamilton	531	(437 - 624)	358	(286 - 430)	540	(513 - 567)	217	(204 - 231)
Waipa	564	(396 - 733)	228	(135 - 321)	501	(463 - 539)	220	(199 - 242)
Otorohanga	531	(309 - 753)	626	(344 - 907)	346	(269 - 423)	227	(166 - 289)
South Waikato	558	(408 - 708)	401	(278 - 523)	635	(573 - 697)	326	(282 - 369)
Waitomo	773	(550 - 997)	474	(317 - 631)	558	(463 - 653)	293	(231 - 356)
Ruapehu (part)	770	(545 - 996)	710	(468 - 953)	750	(639 - 861)	381	(307 - 454)
Waikato DHB	521	(474 - 568)	384	(345 - 422)	530	(515 - 544)	242	(234 - 251)

Notes: CI – 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for July 2001 to June 2006. Population used as denominator is the average of 2001 and 2006 Censuses that gives an estimate of September 2003 population.

(II) Primary Diagnosis ICD10 I20-I25

Source: Waikato DHB, Various Hospital Discharge Collections. Statistics New Zealand, 2001 and 2006 Censuses of Population and Dwellings.

Ischaemic heart disease mortality

From 1999 - 2003, the overall Waikato DHB mortality rate for ischaemic heart disease was 108 per 100,000 population, which is comparative to the national rate (Table 21).

This implies that 526 people in Waikato die from ischaemic heart disease each year.

The overall Māori mortality rate (242) for ischaemic heart disease was 2.5 times larger than that of non-Māori (97). This is similar to the national trend, although the Waikato Māori rate was higher than the national Māori rate (215). Waitomo (136) and South Waikato (144) have the highest overall territorial authority mortality rates. The highest Māori area rates are seen in Otorohanga (308) and Waitomo (327), where the mortality rates are three times that of the non-Māori population.

Table 21: Number of Deaths (5 years) and Age Standardised(I) Mortality Rate per 100,000 people, Ischaemic Heart Disease(II), by Ethnicity, Territorial Authority, Waikato DHB and New Zealand, 1999-2003.

Area	Māori			Non-Māori			Total		
	#	Rate	CI	#	Rate	CI	#	Rate	CI
Thames-Coromandel	30	281	(181 - 382)	263	86	(75 - 96)	293	94	(83 - 105)
Hauraki	16	234	(119 - 349)	173	117	(99 - 134)	189	124	(106 - 141)
Waikato	62	258	(194 - 322)	245	102	(90 - 115)	307	120	(107 - 133)
Matamata-Piako	14	151	(72 - 230)	244	92	(81 - 104)	258	97	(85 - 109)
Hamilton	78	234	(182 - 286)	732	93	(86 - 100)	810	102	(95 - 109)
Waipa	24	180	(108 - 252)	336	92	(82 - 102)	360	97	(87 - 107)
Otorohanga	14	308	(146 - 469)	36	73	(49 - 97)	50	90	(65 - 114)
South Waikato	34	259	(172 - 346)	154	129	(109 - 150)	188	144	(123 - 164)
Waitomo	37	327	(221 - 432)	61	114	(85 - 142)	98	156	(125 - 187)
Ruapehu (part)	27	272	(169 - 374)	51	85	(62 - 109)	78	121	(94 - 148)
Waikato DHB	336	242	(217 - 268)	2295	97	(93 - 100)	2631	108	(104 - 112)
New Zealand	2528	215	(207 - 223)	28,688	96	(95 - 98)	31,216	103	(102 - 104)

Notes: CI – 95% Confidence Interval

(I) Standardised to World Health Organisation Standard Population using the five year average for 1999 - 2003.

(II) ICD9 410-414 (1999), ICD10 I20-I25 (2000-2003(III)).

Source: New Zealand Health Information Service, National Minimum Data Set – Mortality. Statistics New Zealand, 2001 Census of Population and Dwellings.

12.4. Service networks

Health services related to chronic conditions across the Waikato DHB region include services at primary, secondary and tertiary services. The majority of services targeting chronic conditions are provided at a primary care level. Refer to the *Future Focus Appendix* section for a stocktake of current Ministry of Health funded health services helping reduce the incidence of chronic conditions across the Waikato DHB region.

12.5. Living and working conditions

12.5.1. Chronic obstructive pulmonary disease

In most cases, chronic obstructive pulmonary disease is a direct result of long term inhalation of tobacco smoke and it is largely preventable by not smoking. Environmental tobacco smoke, indoor cooking smoke in developing countries, air pollution (particularly environmental particulate matter) and genetic pre-disposition are also contributing factors^{18, 19, 20}.

12.5.2. Asthma

The economic consequences of asthma, as the number one cause of years lost and disability in males (and the third-highest ranking cause in females) in terms of time lost from work and school are significant and the economic burden of asthma to New Zealand has been estimated as \$800 million per year²¹.

Main risk factors for asthma are smoking, second-hand smoke exposure, environmental air pollution and exposure to allergens including house dust mite.

12.5.3. Cancer

It is estimated that about 80% of cancers are due to environment or lifestyle and are therefore potentially preventable²². Major risk factors include smoking, obesity and nutrition and UV light exposure.

12.5.4. Ischaemic heart disease

The major risk factors for ischaemic heart disease are smoking, obesity, nutrition, physical activity, hypertension and high cholesterol.

12.5.5. Cerebrovascular disease

The major risk factors for cerebrovascular disease are smoking, hypertension and obesity.

12.6. Evidence-based interventions

A brief review of public health guidance suggests a comprehensive approach that includes effective community engagement is most effective in interventions to address smoking, obesity, Diabetes, cardiovascular disease, ischaemic heart disease, chronic obstructive pulmonary disease, asthma, and cancer^{23, 24}.

Best practice prevention recommendations and strategies that are applicable across many of these chronic diseases include, but are not limited to:

12.6.1. Individuals

- Eat at least five portions of a variety of fruit and veges each day
- Eat plenty of fibre-rich foods
- Limit fried foods, drinks and confectionary high in added sugar and other food high in fat and sugar
- Watch portion size of meals and snacks
- For adults, minimise alcohol intake
- Get regular exercise; and
- Minimise sedentary activities.

12.6.2. Primary healthcare

- Tailor advice to address potential barriers (such as cost, availability, time, views of family and community members)
- Ensure effective engagement with target communities
- Provide long-term support where possible
- On-site catering should promote healthy food and drink choices; and
- Promote policies and facilities that promote physical activity

12.6.3. Partnerships

- Education settings: use a whole school approach (incorporating a range of components that are integrated into school environment and culture -short-term interventions and one-off events are insufficient on their own).

12.6.4. Workplaces

- Integrate initiatives into workplace objectives, develop local partnerships, ensure staff involvement and communication and activities target root causes

12.6.5. Communities

- Set up multidisciplinary teams with support from a broad range of organisations (such as territorial authorities, industry, government agencies, voluntary organisations)
- Engage with local community(s)
- Involve local community at all stages (in planning, implementation and evaluation); and
- Integrate sustainable approaches into existing community practices.

12.6.6. National resources

- New Zealand National Health Committee: Guidelines for smoking cessation, 2002
- Ministry of Health New Zealand: New Zealand Smoking Cessation Guidelines, 2004
- Ministry of Health: Health Eating - Healthy Action (HEHA) Implementation Plan
- Education programmes promoting self-management have proven effective for Asthma, and may have potential for chronic obstructive pulmonary disease; and
- Ministry of Health: Food and Nutrition Guidelines, 1998.

12.6.7. Cancer

The risk factors for some cancers have been identified, but for others, further research is needed. Based on current evidence, at least 30% of future cancer cases are preventable by comprehensive and carefully considered action, taken now²⁵.

The burden of cancer within the Waikato region falls heavily on Māori, in particular mortality. These inequalities need to be considered and addressed further across the continuum of care focussing in particular on work around prevention of risk factors and access barriers to screening, primary, and secondary care services.

12.6.8. Ischaemic heart disease

New Zealand Guideline Group:

- The Assessment and Management of Cardiovascular Risk, 2003
- Cardiac Rehabilitation, 2002
- New Zealand Cardiovascular Guidelines Handbook: Developed for primary care, 2005
- New Zealand Medical Association
- Non ST-elevation Acute Coronary Syndromes: New Zealand management guidelines, 2005
- ST-elevation Myocardial Infarction: New Zealand management guidelines
- Use of Evidence-based Management for Acute Coronary Syndrome

- Cardiac Society of Australia and New Zealand
- Guidelines for Pre-hospital Administration of Fibrinolytic Therapy, 2004

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