



Southern
District Health Board

Māori Health Profile 2015

Te Rei Puta

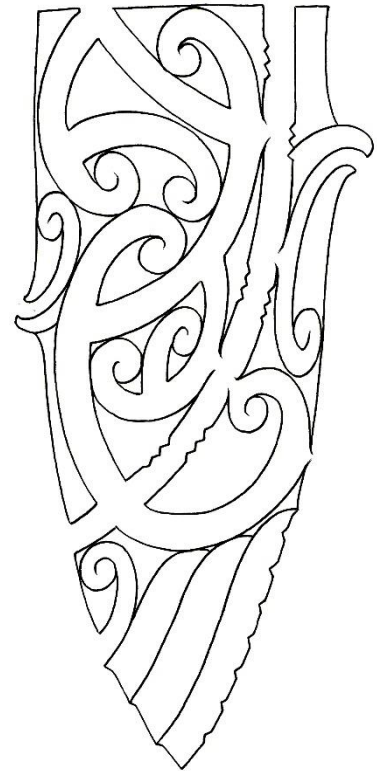
The cover design represents the journey of data from its production to its use by the health sector. The overall shape of the design is the prized rei puta. This signifies the importance of information and the acknowledgement that knowledge is a taonga.

At the centre of the design interwoven kowhaiwhai represent the complexity of data that underpins the reports. The ngutu kākā represents the verbal mechanisms for passing on knowledge and the mangopare design symbolises strength and the application of knowledge.

The reports focus on the health status of Māori, and in particular where there are inequalities compared to non-Māori. Niho taniwha represents the strength required to meet adversity and persist through to a successful end, the koru symbolises the growth that results from access to information. The retention of knowledge is embodied in the pātaka kai.

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He Mihi

Tūi Tuia i Te Herenga Tangata

Te tangi a Te Rōpū Rangahau Hauora a Eru Pōmare.

Tui Tui Tui Tuia

E ngā maunga whakahii, ngā pū kōrero huri noa

Tēnā koutou, tēnā koutou, tēnā tātou katoa.

Ngā mate huhua e hinga mai nei i runga i o tātou marae maha

Haere atu rā, okioki ai.

Ngā whakaaro, ngā kōrero aroha, ngā tautoko i awahi nei i te kaupapa

Anei te mihi ki ngā kaimahi hauora

Whakapiki te kaha

Whakapiki te ora

Whakapiki te māramatanga

Kia eke tātou katoa ki Te Pae Ora.

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Ngā mihi nui ki a koutou katoa.

Nā,

Te Rōpū Rangahau Hauora a Eru Pōmare (Eru Pōmare Māori Health Research Centre)
University of Otago Wellington



Tiro whānui

– Southern District at a glance

Southern District population

- In 2013, 29,200 Māori lived in the Southern District Health Board region, 10% of the DHB's total population.
- The Southern Māori population is youthful, but showing signs of ageing. The median age in 2013 was 23.8 years. Eighteen percent of the DHB's children under 15 years and 13% of the DHB's youth aged 15 to 24 years are Māori. The Māori population aged 65 years and over will increase by 54% between 2013 and 2020.

Whānau ora – Healthy families

- In 2013, most Southern Māori adults (84%) reported that their whānau was doing well, but 6% felt their whānau was doing badly. One in ten found it hard to access whānau support in times of need, but most found it easy (80%). One in five found it hard to get help with Māori cultural practices.
- Being involved in Māori culture was important to three out of five Māori adults (61%) and spirituality was important just over one in two (53%).
- Most Southern Māori (92%) had been to a marae at some time. Two-fifths (42%) had been to their ancestral marae, with three-fifths (62%) stating they would like to go more often.
- Seven percent had taken part in traditional healing or massage during the previous 12 months.
- One in seven Māori could have a conversation about a lot of everyday things in te reo Māori in 2013.

Wai ora – Healthy environments

Education

- In 2013, 95% of Southern Māori children had participated in early childhood education.
- In 2013, 53% of Māori adults aged 18 years and over had at least a Level 2 Certificate, a higher proportion than in 2006 (45%). However the proportion was a fifth less than that of non-Māori.

Work

- In 2013, 7% of Māori adults aged 15 years and over were unemployed, compared to 5% of non-Māori.
- Most Māori adults (89%) do voluntary work.
- In 2013, Māori were more likely than non-Māori to look after someone who was disabled or ill, within or outside the home.

Income and standard of living

- In 2013, one in four children and adults in Māori households (defined as households with at least one Māori resident) were in households with low equivalised household incomes (under \$15,172), compared to one in six children and one in five adults not in Māori households.
- In 2013, 10% of Māori adults in Southern reported having put up with feeling the cold a lot to keep costs down during the previous 12 months, 9% had gone without fresh fruit and vegetables, and 13% had often postponed or put off a visit to the doctor.
- Residents of Māori households were less likely than residents of other households to have access to a motor vehicle (7% compared to 4%).

- People in Māori households were less likely to have access to telecommunications than those living in other households: 20% had no internet, 24% no telephone, 10% no mobile phone, and 2% had no access to any telecommunications.

Housing

- The most common housing problems reported to be a big problem by Māori adults in 2013 were finding it hard to keep warm (14%), needing repairs (9%), and damp (8%).
- Forty-four percent of children in Māori households were living in rented accommodation, compared to 27% of children in other households.
- Southern residents living in Māori households were twice as likely as others to be in crowded homes (i.e. requiring at least one additional bedroom) (9% compared to 5%).
- In 2013, 165 Māori households (1%) and 537 non-Māori households (less than 1%) in Southern had no form of heating.

Area deprivation

- Using the NZDep2013 index of small area deprivation, 44% of Māori in the Southern DHB lived in the four most deprived decile areas compared to 30% of non-Māori.

Mauri ora – Healthy individuals

Pepi, tamariki – Infants and children

- On average 731 Māori infants were born per year during 2009–2013, 20% of all live births in the DHB. Around 7% of Māori and 5% of non-Māori babies had low birth weight.
- In 2013, 69% of Māori babies in Southern were fully breastfed at 6 weeks.
- Three quarters of Māori infants were enrolled with a Primary Health Organisation by three months of age.
- In 2014, 92% of Māori children were fully immunised at 8 months of age, 95% at 24 months.
- In 2013, over half (55%) of Southern Māori children aged 5 years and a third of non-Māori children had caries. At Year 8 of school, half of Māori children and two out of five non-Māori children had caries. Māori and non-Māori children aged 0–14 years had similar rates of hospitalisations for tooth and gum disease.
- During 2011–2013, on average there were 94 hospital admissions per year for grommet insertions among Māori children (at a similar rate to non-Māori), and 24 admissions per year for serious skin infections (with a rate 43% higher than for non-Māori children).
- Just over 470 hospitalisations per year of Māori children were potentially avoidable through population-based health promotion and intersectoral actions, with a rate 12% higher than that of non-Māori children.
- Around 340 hospitalisations per year of Māori children were potentially avoidable through preventive or treatment intervention in primary care (ambulatory care sensitive hospitalisations, or ASH). The rate was similar to the rate for non-Māori children.

Rangatahi – Young adults

- There has been a significant increase in the proportion of Māori aged 14 and 15 years who have never smoked, and a decrease in the proportion of Māori aged 15–24 years who smoke regularly.
- By September 2013, the proportions of Māori girls aged 14 to 17 years in 2014 who had received all three doses of the human papilloma virus (HPV) vaccine ranged from 65% (17 year olds) to 75% (14 year olds). Coverage was higher for Māori than for non-Māori.
- Rates of hospitalisation for injury from self-harm were 48% higher for Māori women than for non-Māori women at ages 25–44 years, but similar at ages 15–24 years.

Pakeke – Adults

- Over half of Māori adults (57%) in Southern reported having excellent or very good health in 2013. One in six (16%) reported having fair or poor health.
- Smoking rates are decreasing, but remain nearly twice as high for Māori as for non-Māori.

Circulatory system diseases

- Māori adults aged 25 years and over were 14% more likely than non-Māori to be hospitalised for circulatory system diseases (including heart disease and stroke) in 2011–2013.
- In general Māori males in Southern were less likely than non-Māori males to be admitted to hospital for ischaemic heart disease (IHD) or revascularisation procedures. Māori females were more likely than non-Māori females to be admitted for IHD and acute coronary syndrome.
- Heart failure admission rates were over twice as high for Māori as for non-Māori.
- Stroke admission rates were 45% higher for Māori than for non-Māori.
- Māori under 75 years were twice as likely as non-Māori to die from circulatory system diseases during 2007–2011.

Diabetes

- In 2013, 3% of Māori and 5% of non-Māori were estimated to have diabetes. Just over half of Māori aged 25 years and over who had diabetes were regularly receiving metformin or insulin, 81% were having their blood sugar monitored regularly, and 57% were being screened regularly for renal disease.
- In 2011–2013 Māori males with diabetes were 2.5 times as likely as non-Māori males to have a lower limb amputated.

Cancer

- Among females, overall cancer incidence was similar for Māori and non-Māori but cancer mortality was 54% higher for Māori. Breast, lung, and colorectal cancers were the most frequent among Māori women, with lung cancer rates 4.4 times as high as for non-Māori.
- Breast screening coverage of Māori women aged 45–69 years was 60% compared to 75% of non-Māori women at the end of 2014.
- Cervical screening coverage of Māori women aged 25–69 years was 60% over 3 years and 73% over five years (compared to 81% and 95% of non-Māori respectively).
- Among males, overall cancer incidence and mortality were similar for Māori and non-Māori. Lung, colorectal, prostate, and testicular cancer were the most common cancers among Māori men. Lung cancer rates were twice as high for Māori as for non-Māori, while prostate cancer registration rates were half as high.
- Lung and breast cancers were the most common causes of cancer death among Māori females (with lung cancer mortality 4.8 times the non-Māori rate).
- Lung, colorectal, and pancreatic cancers were the most common causes of death from cancer among Māori males (with pancreatic cancer mortality 2.9 times the non-Māori rate).

Respiratory disease

- Māori aged 45 years and over were 2.5 times as likely as non-Māori to be admitted to hospital for chronic obstructive pulmonary disease (COPD) during 2011–2013.
- Asthma hospitalisation rates were higher for Māori than non-Māori in each age group.
- Māori females under 75 years had twice the non-Māori rate of death from respiratory disease in 2007–2011.

Mental disorders

- Māori were a third more likely than non-Māori to be admitted to hospital for a mental disorder during 2011–2013. Schizophrenia type disorders were the most common disorders, followed by mood disorders and substance use disorders.

Gout

- In 2011 the prevalence of gout among Māori in Southern was estimated to be 5%, compared to 3% among non-Māori.
- Forty-three percent of Māori with gout regularly received allopurinol, a preventive therapy to lower urate levels. Of those who received allopurinol, only 28% had a lab test for serum urate levels in the following six months.
- In 2011–2013 the rate of hospitalisations for gout was 3.5 times as high for Māori as for non-Māori, indicating a higher rate of flare-ups.

All ages

Hospitalisations

- The all-cause rate of hospital admissions was 5% lower for Māori than for non-Māori during 2011–2013.
- On average 1,320 Māori hospital admissions per year were potentially avoidable, with the rate 11% higher for Māori than for non-Māori. The ASH rate was 18% higher.

Mortality

- Life expectancy at birth during 2012–2014 was higher for Māori in the Otago Region than in the Southland Region. For Otago residents, life expectancy at birth was 82.3 years for Māori females (one year lower than for non-Māori), and 78.4 years for Māori males (1.2 years lower than for non-Māori). For Southland residents, life expectancy at birth was 78.7 years for Māori females (4.1 years lower than for non-Māori) and 74.6 years for Māori males (4.4 years lower than for non-Māori).
- The all-cause mortality rate for Māori in Southern in 2008–2012 was 36% higher than the non-Māori rate.
- Leading causes of death for Māori females were lung cancer, IHD, COPD, stroke, suicide, and diabetes. Leading causes of death for Māori males were IHD, accidents, suicide, lung cancer, and COPD.
- Potentially avoidable mortality was 62% higher for Māori than for non-Māori in Southern during 2007–2011. Mortality amenable to health care was 54% higher.

Injuries

- The rate of hospitalisation due to injury was similar for Māori and non-Māori. Over 600 Māori per year were admitted for injury.
- The leading causes of injury resulting in hospitalisations among Māori were falls, exposure to mechanical forces, complications of medical and surgical care, transport accidents, assault, and intentional self-harm.
- Rates of hospital admission for injury caused by assault were 2.4 times as high for Māori as for non-Māori.
- Injury mortality was 33% higher for Māori than for non-Māori.

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Introduction

The Ministry of Health commissioned Te Rōpū Rangahau Hauora a Eru Pōmare to produce a Māori Health Profile for each District Health Board (DHB) in Aotearoa New Zealand. Each profile report is accompanied by an Excel® data file. The profiles are intended to be used by the health sector for planning purposes. They build on and update the previous Health Needs Assessments produced by Massey University in 2012 which can be viewed [here](#).

The overall aim of the Māori Health Strategy, He Korowai Oranga, is Pae Ora or Healthy Futures. Pae Ora is a holistic concept that includes three interconnected elements; whānau ora, wai ora and mauri ora. Further detail on He Korowai Oranga can be found [here](#). Health indicators contained in the Māori Health Profiles are arranged according to these three elements. Whānau ora, healthy families, includes indicators of whānau wellbeing and support, participation in Māori culture and reo. Wai ora, or healthy environments, encompasses indicators on education, work, income, housing and deprivation. Mauri ora, healthy individuals, includes individual level indicators of health status. Mauri ora indicators are ordered according to life stage from pepi/tamariki to rangatahi then pakeke, and also a section on indicators that affect individuals of all ages.

This document presents data for residents of the **Southern District Health Board**.

Data sources and key methods

The main data sources for this report are: the 2013 Census of Population and Dwellings, Te Kupenga 2013 (the Māori Social Survey), mortality registrations, public hospital discharges, cancer registrations, the national immunisation register, the community oral health service, the Health Quality and Safety Commission's Atlas of Healthcare Variation, Action on Smoking and Health (ASH) Year 10 Snapshot Survey of tobacco smoking among 14 and 15 year olds, and data from the Well Child/Tamariki Ora Quality Improvement Framework indicators.

Most data are presented for Māori and non-Māori residents of Southern DHB. Accompanying Excel tables also include data for the total Southern DHB population and the total New Zealand population for reo speakers, socioeconomic indicators, mortality, cancer registrations, and hospital discharges.

The unequal distribution of the social determinants of health is an important driver of health inequities between Māori and non-Māori. Information from the 2013 Census on living conditions that influence health has been analysed by individual, household, and neighbourhood. A household was classified as Māori if there was at least one Māori resident. The 2013 NZ Deprivation Index was used for classifying neighbourhoods. The index combines eight dimensions of deprivation, including access to telecommunications and internet, income, employment, qualifications, home ownership, support, living space, and access to transport.

Māori models of health encompass cultural vitality and whānau wellbeing. Indicators of these dimensions of health have been included in these Profiles, sourced from Te Kupenga 2013, the Māori Social Survey conducted in 2013 by Statistics New Zealand (SNZ). Further information on Te Kupenga can be found [here](#). Data from Te Kupenga is presented for Māori only.

Hospitalisation, cancer registration, and mortality rates and Census data were age–sex-standardised to the 2001 Māori population¹.

Ninety-five percent confidence intervals (95% CI) were calculated for crude and age-standardised hospitalisation and mortality rates and ratios using the log-transformation method (Clayton and Hills 1993). Confidence intervals for data from Te Kupenga were calculated by Statistics New Zealand. Confidence intervals have not been calculated for data from other sources.

For ambulatory care sensitive admissions and admission rates for specific causes, transfers are only included as an admission if the principal diagnosis is not in the same diagnostic group as the initial admission.

¹ The use of the 2001 Māori population standard makes the age-standardised data in this report comparable to the Ministry of Health's Māori health chartbooks, but not to other Ministry of Health documents which use the World Health Organisation's world population.

Average numbers of events per year have been rounded to the nearest whole number.

Further technical notes and methods are provided in Appendix 2.

Further sources of data

Risk factors common to several chronic conditions such as diabetes, cardiovascular disease, cancer, respiratory disease, or vascular dementia, include smoking, alcohol and drug use, nutrition, body size, and physical activity. Improvements in these indicators require public health and intersectoral action to support healthy environments and living conditions for Māori communities, as well as primary care interventions designed for individuals and whānau. The 2012/13 New Zealand Health Survey provides evidence of inequities between Māori and non-Māori in the prevalence of these risks factors at the national level ([Ministry of Health 2013](#)).

Other useful data sources include the Ministry of Health's [publications](#) on Māori health, the Health Quality and Safety Commission's [Atlas of Healthcare Variation](#), the [DHB](#) reports and [Te Ohonga Ake](#) reports of the New Zealand Child and Youth Epidemiology Service, the [Trendly](#) health performance monitoring website, and the Māori Health Plan Indicator reports provided to DHBs.



Te Tatauranga o te Iwi

– Key demographics

In 2013, approximately 4% (29,200) of the country’s Māori population lived in the Southern District Health Board region. The total population of the DHB (306,400) made up 7% of the national population. In 2015, the Māori population is estimated to be 30,400 and the total population 312,100.²

Table 1: Population by age group, Southern DHB, 2013

Age group (years)	Māori			Non-Māori		Total DHB Number
	Number	Age distribution	% of DHB	Number	Age distribution	
0–14	9,820	34%	18%	46,420	17%	56,240
15–24	6,000	21%	13%	41,320	15%	47,320
25–44	6,930	24%	9%	67,740	24%	74,670
45–64	4,950	17%	6%	75,580	27%	80,530
65+	1,470	5%	3%	46,200	17%	47,670
Total	29,200	100%	10%	277,200	100%	306,400

Source: Statistics NZ Population projections for the Ministry of Health (2013 Census base) 2014 update

In 2013, Māori residents constituted 10% of the Southern DHB population. The Māori population is relatively young, with a median age in 2013 of 23.8 years, compared with 38.9 years for the total DHB population. Māori comprised 18% of the DHB’s children aged 0–14 years and 13% of those aged 15–24 years.

Table 2: Population projections, Southern DHB, 2013 to 2033


Year	Māori							Total DHB			NZ	
	Residents	% of DHB	% of NZ Māori	% 0–14 years	% 15–64 years	% 65+ years	Median age	Residents	Median age	% of NZ pop	NZ Māori	Total NZ
2013	29,200	9.5	4	34	61	5	23.8	306,400	38.9	7	692,300	4,442,100
2018	31,900	10.1	4	33	61	7	24.7	316,600	39.2	7	734,500	4,726,200
2023	34,500	10.7	5	31	61	8	25.9	322,900	39.6	7	773,500	4,935,200
2028	37,200	11.3	5	30	60	10	26.8	328,700	40.1	6	811,700	5,139,700
2033	40,100	12	5	30	60	11	27.6	333,400	40.9	6	850,700	5,327,700

Source: Statistics NZ Population projections for the Ministry of Health (2013 Census base) 2014 update

Note: Detailed population projections are provided in Appendix 1.

The proportion of Māori who are aged 65 years and over in 2013 was 5% but is projected to increase to 11% in 2033 (Table 2). Between 2013 and 2020 the number of Māori aged 65 and over will increase by 54% from 1,470 to 2,260 (see Appendix 1). In 2013, there were 460 Māori aged 75 years and over in the Southern District, with 153 living alone (see accompanying Excel tables).

² Population projections are provided in Appendix 1.



Whānau ora

– Healthy families

The refreshed Māori health strategy, He Korowai Oranga (Ministry of Health, 2014) defines whānau ora as Māori families supported to achieve their maximum health and wellbeing. It aims to support families to be self-managing, leading healthy lifestyles, confidently participating in te ao Māori and society. This section reports selected findings from Te Kupenga 2013 on whānau well-being and support and engagement with Māori culture and reo.

Whānau well-being

Table 3: Whānau well-being reported by Māori aged 15 years and over, Southern DHB, 2013

How the whānau is doing	Southern DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Well / Extremely well	24,500	83.8	(78.7, 88.8)	83.4	(82.5, 84.4)
Neither well nor badly	3,000*	10.1*	(6.4, 13.8)	10.3	(9.4, 11.2)
Badly / Extremely badly	2,000**	6.2**	(2.8, 9.5)	6.3	(5.6, 7.0)

Source: Te Kupenga 2013, Statistics New Zealand customised report.

Notes: An asterisk (*) shows the sampling error is 30% or more but less than 50%. ** sampling error is 50% or more but less than 100%.

The majority of Southern Māori adults (84%) reported that their whānau was doing well or extremely well in 2013. However 6% felt their whānau was doing badly or extremely badly.

Table 4: Whānau composition reported by Māori aged 15 years and over, Southern DHB, 2013

Whānau description	Southern DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Size of whānau					
10 or less	19,500	67.4	(60.9, 73.9)	53.7	(52.1, 55.3)
11 to 20	5,000	17.4	(12.5, 22.4)	22.6	(21.3, 24.0)
More than 20	4,500*	15.1*	(10.2, 20.0)	23.6	(22.4, 24.8)
Groups included in whānau					
Parents, partner, children, brothers & sisters	29,000	97.3	(95.1, 99.6)	94.6	(94.0, 95.2)
Aunts & uncles, cousins, nephews & nieces, other in-laws	10,500	36.0	(28.8, 43.1)	41.3	(39.8, 42.8)
Grandparents, grandchildren	9,500	32.6	(25.8, 39.3)	41.9	(40.5, 43.4)
Friends, others	4,000*	14.2*	(9.9, 18.5)	12.4	(11.5, 13.3)

Source: Te Kupenga 2013, Statistics New Zealand customised report

Note: * Sampling error is 30% or more but less than 50%.

Table 4 shows the size and composition of whānau, with 15% reporting whānau sizes of more than 20 people. Fourteen percent included friends in their description of whānau.

Whānau support

Table 5: Access to whānau support, Māori aged 15 years and over, Southern DHB, 2013

How easy is it to get help	Southern DHB			New Zealand		
	Estimated number	%	(95% CI)	%	(95% CI)	
Support in times of need						
Easy, very easy	23,500	79.9	(74.2, 85.7)	81.2	(80.1, 82.4)	
Sometimes easy, sometimes hard	3,000*	10.3*	(6.6, 14.1)	12.7	(11.7, 13.6)	
Hard / very hard	3,000**	9.8**	(4.6, 14.9)	6.1	(5.4, 6.8)	
Help with Māori cultural practices such as going to a tangi, speaking at a hui, or blessing a taonga						
Easy, very easy	17,500	59.1	(51.9, 66.3)	64.1	(62.7, 65.6)	
Sometimes easy, sometimes hard	6,000	19.8	(14.2, 25.4)	16.9	(15.9, 18.0)	
Hard / very hard	6,000*	19.5*	(13.3, 25.6)	14.7	(13.5, 15.9)	
Don't need help	S	S	.	4.2	(3.7, 4.7)	

Source: Te Kupenga 2013, Statistics New Zealand customised report.

Note: * Sampling error is 30% or more but less than 50%. ** Sampling error is 50% or more but less than 100%. S shows the data was suppressed.

In 2013, the majority of Māori adults in the Southern District (80%) reported having easy access to whānau support in times of need. However, an estimated 3,000 (10%) had difficulty getting help. A smaller proportion found it easy to get help with Māori cultural practices (59%), with 20% finding it hard or very hard.

Importance of participation in Māori culture

Table 6: Importance of Māori culture and spirituality, Māori aged 15 years and over, Southern DHB, 2013

	Southern DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Importance of being involved in Māori culture					
Very / quite	11,500	38.6	(31.9, 45.2)	46.3	(44.9, 47.6)
Somewhat	7,000	22.8	(17.3, 28.4)	24.2	(22.9, 25.6)
A little / not at all	11,500	38.6	(32.2, 45.0)	29.5	(28.3, 30.7)
Importance of spirituality					
Very / quite	11,000	37.5	(31.0, 44.1)	48.7	(47.4, 49.9)
Somewhat	4,500	15.7	(11.2, 20.2)	17.0	(16.0, 18.0)
A little / not at all	14,000	46.8	(39.8, 53.8)	34.3	(33.1, 35.5)

Source: Te Kupenga 2013, Statistics New Zealand customised report.

Being involved in Māori culture was very or quite important to two-fifths (39%) of Southern Māori adults, and somewhat important to a further quarter (23%). Spirituality was very, quite, or somewhat important to just over half of Southern Māori (53%).

Te Reo Māori

Table 7: People who can have a conversation about a lot of everyday things in te reo Māori, Southern DHB, 2013

Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage	
Number	%	(95% CI)	Number	%	(95% CI)			
3,558	13.8	(13.4, 14.3)	1,629	0.7%	(0.7, 0.7)	19.52	(18.31, 20.81)	13.1

Source: 2013 Census, Statistics New Zealand

Notes: Percentages are age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

According to the 2013 Census, 14% of all Māori in the Southern DHB area (Southern) and 1% of non-Māori could have a conversation about a lot of everyday things in te reo Māori.

Table 8: Use of te reo Māori in the home, Māori aged 15 years and over, Southern DHB, 2013

Language spoken at home	Southern DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Māori is main language	S	S		2.6	(2.2, 3.0)
Māori is used regularly	3,500*	13.8*	(8.5, 19.1)	20.5	(19.2, 21.8)

Source: Te Kupenga 2013, Statistics New Zealand customised report.

Notes: * Sampling error is 30% or more but less than 50%. S shows the data was suppressed.

Fourteen percent of Māori adults reported that te reo Māori was used regularly in the home in 2013.

Access to marae

Table 9: Access to marae, Māori aged 15 years and over, Southern DHB, 2013

Been to marae	Southern DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
At some time	27,000	91.9	(88.5, 95.4)	96.0	(95.5, 96.6)
In previous 12 months ⁽¹⁾	11,500	41.9	(34.5, 49.4)	58.2	(56.6, 59.7)
Ancestral marae at some time ⁽²⁾	12,500	42.2	(36.0, 48.5)	62.3	(60.9, 63.7)
Ancestral marae in previous 12 months ⁽³⁾	5,000*	17.0*	(11.4, 22.5)	33.6	(32.3, 34.9)
Like to go to ancestral marae more often ⁽²⁾	10,500	61.9	(52.9, 71.0)	58.7	(56.7, 60.7)

Source: Te Kupenga 2013, Statistics New Zealand customised report.

Notes: (1) Those who had been to a marae at some time.

(2) Both those who knew and did not know their ancestral marae.

(3) Those who had been to any of their ancestral marae in the last 12 months.

* Sampling error is 30% or more but less than 50%.

In 2013, 92% of Māori adults in Southern had been to a marae, with two out of five (42%) having been in the last 12 months. Just over 40% had been to at least one of their ancestral marae, with 17% having been in the previous 12 months. A high proportion (62%) reported they would like to go more often.

Traditional healing or massage

Table 10: Māori aged 15 years and over who took part in traditional healing or massage in last 12 months, Southern DHB, 2013

Southern DHB			New Zealand	
Estimated number	%	(95% CI)	%	(95% CI)
2,000**	7.1**	(3.1, 11.1)	10.9	(10.0, 11.7)

Source: Te Kupenga 2013, Statistics New Zealand customised report.

Note: ** Sampling error is 50% or more but less than 100%.

In 2013, an estimated 2,000 Māori adults (7%) in the Southern DHB had taken part in traditional healing or massage during the previous 12 months.

Wai ora

– Healthy environments

This section focuses on those aspects of social and physical environments that influence our health and well-being. Data is presented on individuals, households, and individuals living in households. A household that includes at least one Māori usual resident on Census night is categorised as a Māori household, and other households are categorised as non-Māori.

Education

Table 11: Adults aged 18 years and over with a Level 2 Certificate or higher Southern DHB, 2006 and 2013

Year	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
2006	6,114	45.3	(44.5, 46.1)	104,934	60.1	(59.9, 60.4)	0.75 (0.74, 0.77)	-14.8
2013	8,049	52.6	(51.8, 53.4)	116,061	65.0	(64.7, 65.2)	0.81 (0.80, 0.82)	-12.4

Source: 2006 and 2013 Censuses, Statistics New Zealand

Notes: Percentages are age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

The proportion of Māori adults aged 18 years and over with at least a Level 2 Certificate increased from 45% to 53% between 2006 and 2013, with the absolute difference between Māori and non-Māori decreasing by 2%. However Māori adults remained less likely than non-Māori adults to have a Level 2 Certificate or higher qualification.

Work

Table 12: Labour force status, 15 years and over, Southern DHB, 2006 and 2013

Labour force status	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
2006								
Employed full-time	7,673	52.4	(51.7, 53.1)	104,394	54.8	(54.6, 55.1)	0.96 (0.94, 0.97)	-2.4
Employed part-time	2,428	15.7	(15.2, 16.3)	33,408	17.4	(17.2, 17.6)	0.91 (0.87, 0.94)	-1.6
Unemployed	915	5.8	(5.5, 6.2)	5,628	3.6	(3.5, 3.7)	1.61 (1.51, 1.73)	2.2
Not in the labour force	4,059	26.0	(25.4, 26.7)	66,084	24.2	(24.0, 24.4)	1.08 (1.05, 1.11)	1.9
2013								
Employed full-time	8,217	50.0	(49.4, 50.7)	103,572	53.1	(52.9, 53.3)	0.94 (0.93, 0.96)	-3.0
Employed part-time	2,709	15.4	(14.9, 16.0)	33,882	16.8	(16.6, 17.0)	0.92 (0.89, 0.95)	-1.4
Unemployed	1,215	7.2	(6.8, 7.6)	7,023	4.5	(4.4, 4.6)	1.61 (1.52, 1.71)	2.7
Not in the labour force	5,049	27.3	(26.7, 27.9)	69,687	25.7	(25.5, 25.9)	1.06 (1.04, 1.09)	1.6

Source: 2006 and 2013 Censuses, Statistics New Zealand

Notes: Percentages are age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Employed part-time includes people working 1 hour per week or more. Employed full-time includes people who usually work 30 or more hours per week. Unemployed people are without a paid job, available for work and actively seeking work. People not in the labour force includes people in the working age population who are neither employed nor unemployed.

Between 2006 and 2013 there was a decrease in the proportion of Māori adults employed full-time and an increase in the unemployment rate (from 6% to 7%). Māori remained 61% more likely than non-Māori to be unemployed, as the non-Māori unemployment rate also increased. The Māori and non-Māori populations who were not in the labour force increased between 2006 and 2013.

Table 13: Leading industries in which Māori were employed, Southern DHB, 2013

ANZSIC Industry	Southern DHB						New Zealand	
	Māori			Non-Māori				
	Number	%	Rank	Number	%	Rank	%	Rank
Females								
Health Care and Social Assistance	756	15.5	1	11,052	17.4	1	17.1	1
Retail Trade	639	13.1	2	8,382	13.2	2	11.6	3
Accommodation and Food Services	624	12.8	3	6,552	10.3	4	7.3	5
Education and Training	600	12.3	4	8,199	12.9	3	12.9	2
Agriculture, Forestry and Fishing	474	9.7	5	5,376	8.5	5	4.6	8
Males								
Manufacturing	1,053	20.4	1	9,033	13.1	3	13.4	1
Agriculture, Forestry and Fishing	888	17.2	2	11,286	16.3	1	8.7	4
Construction	762	14.8	3	9,183	13.3	2	13.2	2
Retail Trade	342	6.6	4	5,649	8.2	4	8.3	5
Transport, Postal and Warehousing	309	6.0	5	4,035	5.8	5	5.9	7

Source: 2013 Census, Statistics New Zealand

Australian and New Zealand Standard Industrial Classification (ANZSIC)

Service industries were the main employers of Māori women in Southern, including health care and social assistance; retail; accommodation and food services; and education and training. For Māori men, leading industries were manufacturing; agriculture, forestry, and fishing; and construction.

Table 14: Leading occupations of employed Māori, Southern DHB, 2013

ANZSCO Occupation	Southern DHB						New Zealand	
	Māori			Non-Māori				
	Number	%	Rank	Number	%	Rank	%	Rank
Females								
Labourers	975	19.4	1	7,101	11.3	6	8.3	6
Professionals	933	18.6	2	14,523	23.1	1	26.7	1
Community and Personal Service Workers	798	15.9	3	8,871	14.1	4	12.9	4
Clerical and Administrative Workers	666	13.3	4	11,124	17.7	2	19.5	2
Managers	612	12.2	5	9,465	15.0	3	14.4	3
Sales Workers	609	12.1	6	7,557	12.0	5	11.7	5
Technicians and Trades Workers	336	6.7	7	3,423	5.4	7	5.0	7
Machinery Operators and Drivers	90	1.8	8	900	1.4	8	1.5	8
Males								
Labourers	1,536	29.0	1	11,754	17.1	3	13.6	4
Technicians and Trades Workers	1,074	20.3	2	13,107	19.1	2	18.5	3
Managers	759	14.3	3	16,677	24.3	1	22.7	1
Machinery Operators and Drivers	561	10.6	4	6,531	9.5	5	9.1	5
Professionals	558	10.5	5	10,050	14.7	4	18.6	2
Community and Personal Service Workers	372	7.0	6	3,546	5.2	7	5.4	7
Sales Workers	261	4.9	7	4,314	6.3	6	7.1	6
Clerical and Administrative Workers	174	3.3	8	2,616	3.8	8	5.1	8

Source: 2013 Census, Statistics New Zealand

Australian and New Zealand Standard Classification of Occupations (ANZSCO), major grouping

Among employed Māori women, the leading occupational groupings were labourers (19%), professionals (19%), and community and personal service workers (16%). The next most common occupations were clerical and administrative workers; managers; and sales workers.

Māori men were most likely to be employed as labourers (29%), technicians and trade workers (20%), and managers (14%). The next most common occupations were machinery operators and drivers; professionals; and community and personal service workers.

Table 15: Unpaid work, 15 years and over, Southern DHB, 2013

Unpaid work	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)			
Any unpaid work	14,337	89.4	(89.0, 89.9)	180,207	89.4	(89.2, 89.5)	1.00	(1.00, 1.01)	0.0
Looking after disabled/ill household member	1,528	9.8	(9.3, 10.2)	12,819	6.0	(5.9, 6.1)	1.62	(1.54, 1.70)	3.7
Looking after disabled/ill non-household member	1,756	10.7	(10.2, 11.2)	17,937	7.4	(7.3, 7.5)	1.45	(1.38, 1.52)	3.3

Source: 2013 Census, Statistics New Zealand

Notes Percentages are age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Around 90% of Southern Māori adults worked without pay in 2013. Māori were more likely than non-Māori to look after someone who was disabled or ill without pay, both within the home and outside of the home.

Income and standard of living

Table 16: Unmet need reported by Māori aged 15 years and over to keep costs down in the last 12 months, Southern DHB, 2013

Actions taken <u>a lot</u> to keep costs down	Southern DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Put up with feeling the cold	3,000*	9.9*	(5.3, 14.4)	11.0	(10.2, 11.8)
Go without fresh fruit and vegetables	2,500*	9.2*	(4.8, 13.7)	5.4	(4.8, 6.0)
Postpone or put off visits to the doctor	4,000*	12.9*	(7.9, 17.9)	8.8	(7.9, 9.6)

Source: Te Kupenga 2013, Statistics New Zealand customised report.

Note: * Sampling error is 30% or more but less than 50%.

In 2013, an estimated 3,000 Māori adults (10%) reported putting up with feeling cold a lot to keep costs down during the previous 12 months, 2,500 (9%) had gone without fresh fruit and vegetables, and 4,000 (13%) had often postponed or put off visits to the doctor.

Table 17: Children aged 0-17 years living in families where the only income is means-tested benefits, Southern DHB, 2006 and 2013

Year	Māori families			Non-Māori families			Māori/non-Māori ratio (95% CI)		Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)			
2006	1,362	12.9	(12.3, 13.5)	2,580	5.3	(5.1, 5.5)	2.44	(2.29, 2.59)	7.6
2013	1,542	12.8	(12.2, 13.4)	2,532	5.2	(5.0, 5.4)	2.45	(2.31, 2.60)	7.6

Source: 2006 and 2013 Censuses, Statistics New Zealand

Notes: Māori families include at least one Māori member. Non-Māori families have no Māori members.

Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

The proportion of children living in Māori families where the only income was means-tested benefits (13%) was similar in 2006 and 2013. Children in Māori families were around 2.5 times as likely as non-Māori children to be in this situation in both 2006 and 2013.

Table 18: Children and adults living in households with low incomes, Southern DHB, 2013

Age group	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Children 0-17 years	2,703	25.7	(24.9, 26.6)	7,866	17.2	(16.9, 17.5)	1.50 (1.44, 1.55)	8.5
Adults 18 years & over	6,102	25.0	(24.4, 25.5)	28,116	20.5	(20.3, 20.7)	1.22 (1.19, 1.25)	4.5

Source: 2013 Census, Statistics New Zealand

Notes: % is age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.

Household income is equivalised using the revised Jensen scale. Low income is defined as an equivalised household income under \$15,172.

A quarter of the children in Māori households (2,703) were in households with low equivalised household incomes, 50% higher than the proportion of children in non-Māori households. A quarter again of adults in Māori households (over 6,000) lived in low income households, 22% higher than the percentage of adults in non-Māori households.

Table 19: Households with no access to a motor vehicle, Southern DHB, 2006 and 2013

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households								
2006	972	8.7	(8.2, 9.2)	8,145	8.6	(8.4, 8.8)	1.01 (0.95, 1.08)	0.1
2013	1,104	8.5	(8.0, 9.0)	7,785	7.9	(7.7, 8.1)	1.07 (1.01, 1.14)	0.6
People (% age-standardised)								
2006	2,355	6.6	(6.4, 6.9)	11,856	3.9	(3.8, 4.0)	1.71 (1.63, 1.79)	2.8
2013	2,640	6.5	(6.3, 6.8)	11,793	4.2	(4.1, 4.3)	1.55 (1.48, 1.62)	2.3

Source: 2006 and 2013 Censuses, Statistics New Zealand

Note: A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.

Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, 8% of Māori households and 7% of individuals living in Māori households had no access to a motor vehicle. Residents of Māori households were 55% more likely to have no access to a motor vehicle than residents of non-Māori households.

Table 20: People in households with no access to telephone, mobile/cell phone, internet, or any telecommunications, Southern DHB, 2013

Mode of tele-communication	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
No mobile/cell phone	4,374	9.9	(9.6, 10.2)	29,472	9.3	(9.2, 9.4)	1.07 (1.03, 1.10)	0.6
No telephone	9,633	23.5	(23.1, 23.9)	28,809	15.2	(15.1, 15.4)	1.54 (1.51, 1.57)	8.2
No internet	8,016	19.6	(19.2, 20.0)	38,379	11.5	(11.3, 11.6)	1.71 (1.67, 1.75)	8.1
No telecommunications	702	1.7	(1.6, 1.8)	2,106	0.9	(0.8, 0.9)	1.93 (1.76, 2.11)	0.8

Source: 2013 Census, Statistics New Zealand

Note: A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.

% is age-sex-standardised to the 2001 Māori population.

Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, 20% of people in Māori households had no access to the internet, 10% did not have a cell phone, 24% had no landline, and 2% had no access to any telecommunications in the home. The largest absolute gaps between residents of Māori and non-Māori households were in access to a landline and having no internet connection (a difference of 8 percentage points for both).

Housing

Table 21: Housing problems reported by Māori aged 15 years and over, Southern DHB, 2013

Housing problem (a big problem)	Southern DHB			New Zealand		
	Estimated number	%	(95% CI)	%	(95% CI)	
Too small	1,000**	3.5**	(1.4, 5.6)	5.3	(4.7, 5.9)	
Damp	2,500*	7.8*	(4.1, 11.6)	11.3	(10.5, 12.2)	
Hard to keep warm	4,000*	14.0*	(9.1, 18.9)	16.5	(15.4, 17.7)	
Needs repairs	2,500*	9.0*	(4.6, 13.5)	13.8	(12.7, 14.9)	
Pests in the house		S		5.8	(5.1, 6.5)	

Source: Te Kupenga 2013, Statistics New Zealand customised report.

Note: An asterisk (*) shows the sampling error is 30% or more but less than 50%

** shows the sampling error is 50% or more but less than 100%.

Housing problems reported to be a big problem by Southern Māori adults in 2013 included difficulty keeping the house warm (14%), needing repairs (9%), and damp (8%). Four percent felt their house was too small.

Housing security

Table 22: Children and adults living in households where rent payment are made, Southern DHB, 2013

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	5,535	42.9	(42.0, 43.7)	23,931	24.6	(24.4, 24.9)	1.74 (1.70, 1.78)	18.3
Children under 18 years (% age-standardised)	5,409	44.3	(43.5, 45.2)	13,356	27.0	(26.6, 27.4)	1.64 (1.60, 1.68)	17.3
Adults 18 years and over (% age-standardised)	12,126	44.5	(43.9, 45.1)	44,748	34.6	(34.4, 34.9)	1.28 (1.27, 1.30)	9.8

Source: 2013 Census, Statistics New Zealand

Note: A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.

Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, 5,535 Māori households were rented, making up 43% of all Māori households, compared to 25% of non-Māori households.

Among children living in a Māori household, 44% (over 5,400 children) were living in rented homes, two-thirds higher than the proportion of children in non-Māori households (27%, 13,356 children).

Forty-four percent of adults living in Māori households were in rented accommodation (around 12,126), 28% higher than the proportion of adults living in non-Māori households (35%).

Household crowding

Table 23: People living in crowded households (requiring at least one more bedroom), Southern DHB, 2013

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	705	5.4	(5.0, 5.8)	1,605	1.6	(1.5, 1.7)	3.31 (3.04, 3.61)	3.8
People (% age standardised)	3,558	9.4	(9.1, 9.7)	7,746	4.7	(4.5, 4.8)	2.02 (1.94, 2.10)	4.7

Source: 2013 Census, Statistics New Zealand

Notes: Crowding was defined as needing at least one additional bedroom according to the Canadian National Occupancy Standard (based on the age, sex and number of people living in the dwelling).

A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, Māori households were more than 3 times as likely as non-Māori households to be classified as crowded using the Canadian National Occupancy Standard, with around 700 homes needing at least one additional bedroom, affecting approximately 3,560 people. Residents of Māori households were twice as likely as those living in non-Māori households to be living in crowded conditions.

Fuel poverty

Table 24: People living in households where no heating fuels are used, Southern DHB, 2013

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	165	1.3	(1.1, 1.5)	537	0.5	(0.5, 0.6)	2.32 (1.95, 2.77)	0.7
People (% age standardised)	492	1.1	(1.0, 1.2)	1,254	0.7	(0.6, 0.7)	1.61 (1.45, 1.79)	0.4

Source: 2013 Census, Statistics New Zealand

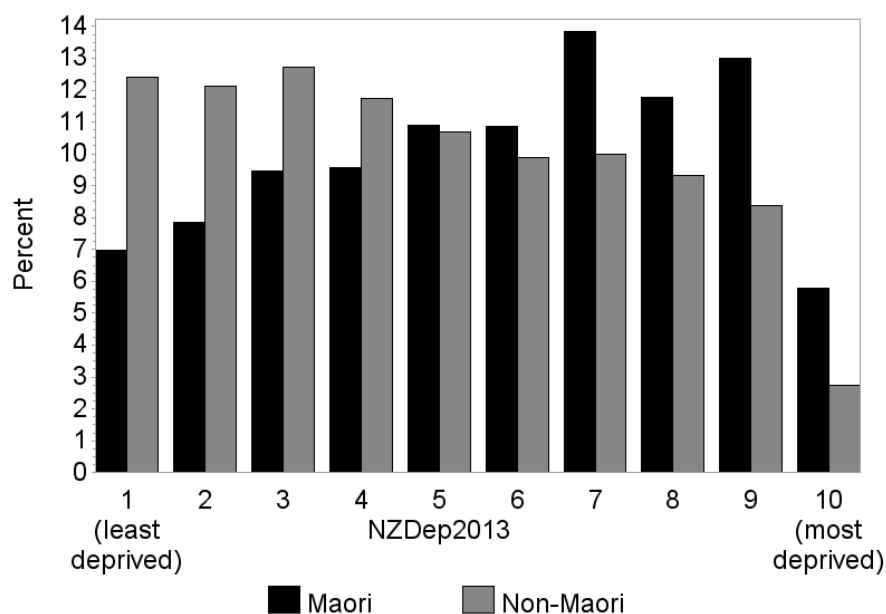
Notes: No form of heating used in the dwelling (including electricity, coal, mains or bottled gas, wood, solar heating equipment, other heating).

A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, though only just over 1% of Māori households (165 homes) had no heating, this was still more than twice the proportion of non-Māori households (0.5%).

Area deprivation

Figure 1: Distribution by NZDep 2013 decile, Southern DHB, 2013



Source: 2013 Census, Statistics New Zealand. Atkinson J, Salmond C, Crampton P. 2014. NZDep2013 Index of Deprivation. University of Otago Wellington.

Māori residents of the Southern District were more likely to live in the more deprived neighbourhoods than non-Māori residents. In 2013, 44% of Māori and 30% of non-Māori lived in the four most deprived decile areas (see accompanying Excel table). Conversely, 34% of Māori lived in the four least deprived deciles compared to 49% of non-Māori.



Mauri ora: Pepi, tamariki

– Infants and children

This section presents information on infants and children. Indicators include birth-weight and gestation, immunisations, breastfeeding and other well-child/tamariki ora indicators, oral health, skin infections, middle ear disease and potentially preventable hospitalisations.

Infant mortality, including perinatal mortality and sudden unexpected death in infants (SUDI), are also important indicators of Māori health need. Although the numbers are too small to present at a DHB level, the national data shows that Māori infant mortality and SUDI rates are improving, but significant inequities still remain. The reports of the Perinatal and Maternal Mortality Review Committee ([PMMRC](#)) and the Child and Youth Mortality Review Committee ([CYMRC](#)) provide useful information and recommendations on preventing infant and child deaths.

Other useful sources of information include the DHB reports by the Child and Youth Epidemiology Service (CYES) on health status (2011), the determinants of health (2012), chronic conditions and disability (2013). The [Te Ohonga Ake](#) reports by the CYES also include in-depth information on Māori child and youth health at a national level.

Births

Table 25: Birth-weight and gestation, Southern DHB, 2009–2013

Indicator	Māori		Non-Māori		Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	% of live births (95% CI)	Ave. no. per year	% of live births (95% CI)		
Low birth-weight	48	6.6 (5.8, 7.5)	156	5.3 (5.0, 5.7)	1.24 (1.07, 1.42)	1.3
High birth-weight	13	1.8 (1.4, 2.3)	88	3.0 (2.7, 3.3)	0.60 (0.46, 0.78)	-1.2
Preterm	62	8.5 (7.6, 9.5)	229	7.8 (7.4, 8.3)	1.09 (0.97, 1.23)	0.7

Source: Birth registrations, Ministry of Health

Notes: Low birth-weight less than 2500g, High birth-weight greater than or equal to 4500g, Preterm less than 37 weeks gestation

During 2009 to 2013 there were 731 Māori infants born per year on average, 20% of all live births in the DHB (3,663 per year). On average, 48 Māori babies per year were born with low birth-weight, at a rate of 7%, 24% higher than the rate for non-Māori babies. Thirteen per year (2%) were born with high birth-weight, and 62 per year (9%) were born preterm.

Well child/Tamariki ora indicators

Table 26: Selected Well Child/Tamariki Ora indicators for Māori children, Southern DHB

Indicator	Period	Māori	
		Count	%
1. Babies enrolled with a Primary Health Organisation (PHO) by three months old	20 Aug to 19 Nov 2013	76	75
11. Babies exclusively or fully breastfed at 2 weeks	January to June 2013	206	76
12. Babies exclusively or fully breastfed at 6 weeks		185	69
19. Mothers smoke-free two weeks postnatal		157	67
5. Children under 5 years enrolled with oral health services (PHO enrolled children)	2012	1,982	54
7. Children starting school who have participated in ECE	2013	80	95
15. Children with a healthy weight at 4 years, DHB of service	July to Dec 2013	213	68

Source: Well Child/Tamariki Ora Indicators, Ministry of Health, March 2014

Notes: Since the production of this table, the Ministry of Health (2015) has published more recent Well Child/Tamariki Ora Indicators for March 2015 which can be viewed [here](#).

Indicator 1: Source: PHO Enrolment Collection (numerator), National Immunisation Register enrolment (denominator)
 Indicator 11: Source: National Maternity Collection. Number of babies with breastfeeding recorded (denominator)
 Indicator 12: Source: National Maternity Collection. Number of babies with breastfeeding recorded (denominator)
 Indicator 19: Source: National Maternity Collection. Number of mother with tobacco use recorded at 2 weeks postnatal (denominator)
 Indicator 5: Source Community Oral Health Services (numerator); PHO enrolments (denominator)
 Indicator 7: Source: ENROL Ministry of Education
 Indicator 15: Source: B4 School Check Information System. Children who have a BMI recorded at their B4 School Check (denominator)

During late 2013, 75% of Māori babies were enrolled with a PHO by three months of age. In the first half of 2013, 76% of Māori babies were fully breastfed at two weeks of age and 69% at six weeks. Two-thirds (67%) of Māori mothers were smoke-free two weeks after giving birth.

Among pre-school children enrolled with a PHO 54% of Māori were enrolled with oral health services in 2012. Ninety five percent of Māori children who started school in 2013 had participated in early childhood education. Two-thirds (68%) of Māori children who had their BMI recorded at their B4 School Check had a healthy weight.

Table 27: Children fully immunised by the milestone age, Southern DHB, 1 Jan 2014 to 31 Dec 2014

Milestone age	Māori		Non-Māori		Māori/non-Māori ratio	Difference in percentage
	No. fully immunised for age	% fully immunised	No. fully immunised for age	% fully immunised		
6 months	496	78%	2,449	86%	0.90	-8%
8 months	581	92%	2,692	94%	0.98	-2%
12 months	600	95%	2,788	95%	1.00	0%
18 months	573	87%	2,762	90%	0.97	-3%
24 months	665	95%	2,867	94%	1.01	1%
5 years	622	90%	2,906	88%	1.02	1%

Source: National Immunisation Register

In the 12 months to 31 December 2014, 78% of Māori infants aged six months were fully immunised, compared to 86% of non-Māori infants. However, 92% of Māori children aged eight months and 95% of those aged 24 months had completed their age appropriate immunisations. At five years of age 90% of Māori children were fully immunised.

Oral health

Table 28: Oral health status of children aged 5 or in Year 8 at school, Southern DHB, 2013

Age group	Māori			Non-Māori			Māori/non-Māori ratio % with caries (95% CI)	Difference in percentage
	Total	% with caries (95% CI)	Mean DMFT	Total	% with caries (95% CI)	Mean DMFT		
Age 5	352	55 (50, 60)	2.2	20,249	33 (31, 35)	1.2	1.65 (1.48, 1.84)	22
Year 8	307	51 (46, 57)	1.3	2,625	41 (39, 42)	0.9	1.27 (1.13, 1.43)	11

Source: Community Oral Health Service, Ministry of Health

Notes: DMFT is Decayed, missing or filled teeth

Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

Over half (55%) of Māori children aged five years in 2013 had caries, compared to 33% of non-Māori children. The mean number of decayed, missing or filled teeth (DMFT) was 2.2 for Māori compared to 1.2 for non-Māori. Of Year 8 students, 51% of Māori and 41% of non-Māori children had caries, with mean DMFTs of 1.3 and 0.9 respectively.

Table 29: Hospitalisations for tooth and gum disease, children aged 0–14 years, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)			
Female	45	959.1	(8,10.1, 1,135.6)	235	1,058.0	(982.6, 1,139.1)	0.91 (0.75, 1.09)	-98.8
Male	61	1,189.8	(1,029.5, 1,375.1)	272	1,159.0	(1,082.1, 1,241.4)	1.03 (0.87, 1.20)	30.8
Total	106	1,074.5	(962.5, 1,199.4)	507	1,108.5	(1,054.1, 1,165.7)	0.97 (0.86, 1.09)	-34.0

Source: National Minimum Data Set (NMDS).

There were 106 hospital admissions per year on average for tooth and gum disease among Māori children which, at a rate of 1,074 per 100,000, was similar to non-Māori.

Middle ear disease

Table 30: Hospitalisations for grommet insertions, children aged 0–14 years, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)				
Female	37	788.2	(654.8, 948.8)	172	785.7	(720.7, 856.5)	1.00	(0.82, 1.23)	2.5
Male	57	1077.6	(927.0, 1252.7)	251	1078.7	(1004.4, 1158.6)	1.00	(0.85, 1.18)	-1.2
Total	94	932.9	(829.8, 1048.7)	423	932.2	(882.3, 985.0)	1.00	(0.88, 1.14)	0.7

Source: NMDS

On average, 94 Māori children per year were admitted for insertion of grommets for otitis media, at a rate of 933 per 100,000, similar to the non-Māori rate.

Healthy skin

Table 31: Hospitalisations for serious skin infections, children aged 0–14 years, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)				
Female	12	252.1	(181.8, 349.7)	40	178.2	(148.9, 213.4)	1.41	(0.97, 2.05)	73.9
Male	12	236.8	(171.5, 327.1)	39	163.7	(136.5, 196.4)	1.45	(1.00, 2.10)	73.1
Total	24	244.5	(194.3, 307.7)	78	171.0	(150.4, 194.3)	1.43	(1.10, 1.86)	73.5

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

There were 24 admissions per year on average for serious skin infections among Māori children. The rate was 43% higher than for non-Māori children, or 74 more admissions per 100,000 children per year.

Acute rheumatic fever

No children in Southern DHB were admitted to hospital with acute rheumatic fever during 2011–2013.

Potentially preventable hospitalisations

Potentially preventable hospitalisations can be categorised into those which are considered potentially avoidable and those more likely to be unavoidable. Potentially avoidable hospitalisations are those resulting from diseases preventable through population-based health promotion strategies and those related to the social determinants of health. Addressing these can require actions beyond the health care system, including intersectoral actions.

A subgroup of potentially avoidable hospitalisations, ambulatory care sensitive hospitalisations (ASH) reflect hospitalisations for conditions considered sensitive to preventive or treatment interventions in primary care. It is also recognised that while access to effective primary care is important in reducing ASH, addressing the factors which drive the underlying burden of disease such as housing, or second hand smoke exposures, is also important.

Table 32: Potentially avoidable hospitalisations for children aged 1 month to 14 years, Southern DHB, 2011–2013

Gender	Māori		Non-Māori		Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)	Ave. no. per year	Rate per 100,000 (95% CI)		
Female	192	4,010.8 (3,695.7, 4,352.7)	794	3,630.3 (3,487.4, 3,779.2)	1.10 (1.01 , 1.21)	380.4
Male	281	5,329.9 (4,981.2, 5,702.9)	1,090	4,674.2 (4,516.6, 4,837.2)	1.14 (1.06 , 1.23)	655.7
Total	472	4,670.3 (4,432.8, 4,920.6)	1,883	4,152.3 (4,045.3, 4,262.0)	1.12 (1.06 , 1.19)	518.1

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

There were 472 potentially avoidable hospitalisations per year on average among Māori children aged 14 years and under, at a rate 12% higher than for non-Māori children, or 518 more admissions per 100,000 children.

Table 33: Ambulatory care sensitive hospitalisations for children aged 1 month to 14 years, Southern DHB, 2011–2013

Gender	Māori		Non-Māori		Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)	Ave. no. per year	Rate per 100,000 (95% CI)		
Female	142	3,002.8 (2,730.8, 3,301.9)	635	2,900.0 (2,772.6, 3,033.3)	1.04 (0.93, 1.15)	102.8
Male	201	3,846.0 (3,550.3, 4,166.4)	826	3,541.6 (3,404.8, 3,683.8)	1.09 (0.99, 1.19)	304.5
Total	343	3,424.4 (3,220.9, 3,640.8)	1,461	3,220.8 (3,126.7, 3,317.6)	1.06 (0.99, 1.14)	203.6

Source: NMDS

On average there were 343 admissions per year for ambulatory care sensitive conditions among Māori children in Southern DHB, at a rate of 3,424 per 100,000 (similar to the non-Māori rate).

Mauri ora: Rangatahi

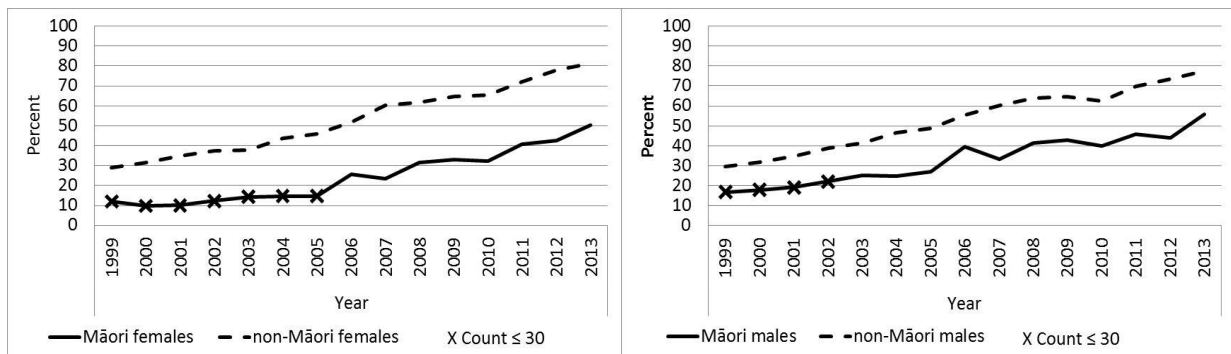
– Young adults

This section presents data on smoking, immunisations, and self-harm as an indicator of mental health. Nationally, leading causes of hospitalisation among Māori aged 15 to 24 years include pregnancy and childbirth, injury, digestive system diseases, symptoms and signs (unknown causes), and mental disorders. Major causes of death for Māori in this age group include accidents, suicide, cancer, and homicide ([Robson and Harris 2007](#)).

Challenges faced by rangatahi Māori that can affect their health and wellbeing include socioeconomic factors, perceived positive school climate, access to healthcare, exposure to violence, and risky health behaviours including suicide attempts ([Crengle et al, 2013](#)). Other data related to youth can be found in the CYES reports on child and youth health. The [Child and Youth Health Compass](#) provides exemplars of youth specific services.

Smoking

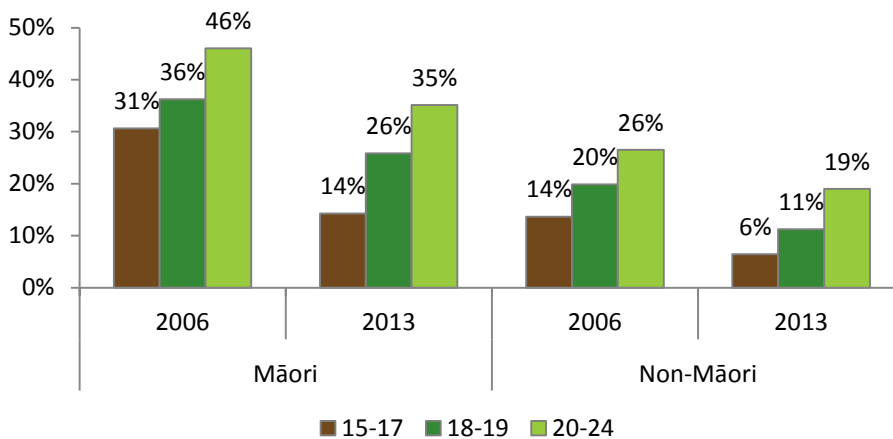
Figure 2: Trends in the proportion of students aged 14–15 years who have never smoked, by gender, Southern DHB, 1999–2013



Source: ASH Year 10 Snapshot Survey, 2013

Over the last 15 years the number of Māori aged 14 or 15 who have never smoked has increased (Figure 2). However, Māori remain consistently less likely to have never smoked than non-Māori students.

Figure 3: Regular smokers, ages 15–17, 18–19, 20–24 years, Southern DHB, 2013



Source: 2013 Census, Statistics New Zealand

Note: Regular smoker defined as smoking at least one cigarette daily.

Smoking rates have decreased significantly among young Māori and non-Māori adults in Southern since 2006. However, smoking uptake remains relatively high among those aged 18–24 years, with a sizeable group starting smoking in this age group. At ages 20–24 years, 35% of Māori were smoking regularly in 2013. Māori in each age group were at least 85% more likely than non-Māori to smoke regularly.

Immunisations

Table 34: Human papilloma virus immunisations (HPV) by birth cohorts, Southern DHB, 1 September 2008 to 30 September 2014

Birth cohort	Age in 2014	Offered HPV vaccine in (year)	Māori		Non-Māori		Māori/non-Māori ratio	Māori % minus non-Māori %
			Fully immunised	% fully immunised	Fully immunised	% fully immunised		
2000	14	2013	181	75.4	983	67.3	1.12	8.1
1999	15	2012	187	74.8	959	67.1	1.12	7.7
1998	16	2011	201	69.3	868	59.0	1.17	10.3
1997	17	2010	168	64.6	839	57.1	1.13	7.5

Source: National Immunisation Register.

Three doses are required to be fully immunised. Young women are eligible for free vaccination up to the age of 20.

By September 2014, two-thirds of Māori girls aged 16 and 17 years in 2014 had received all three doses of the human papilloma virus vaccine. Three-quarters of Māori girls who were aged 14 and 15 years in 2014 were fully immunised, compared to two-thirds of non-Māori in these age groups.

Mental health

Table 35: Hospitalisations for injury from intentional self-harm, 15–24 and 25–44 years, Southern DHB, 2011–2013

Age group and gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
15–24 years								
Female	15	517.5 (386.2, 693.3)		120	591.5 (533.1, 656.3)		0.87 (0.64, 1.19)	-74.0
Male	7	247.1 (162.7, 375.3)		36	175.7 (145.2, 212.7)		1.41 (0.89, 2.23)	71.4
Total	22	382.3 (300.8, 485.8)		156	383.6 (350.1, 420.3)		1.00 (0.77, 1.29)	-1.3
25–44 years								
Female	13	364.2 (266.9, 497.0)		87	246.6 (218.1, 278.8)		1.48 (1.06, 2.06)	117.6
Male	5	158.5 (95.5, 263.0)		46	138.9 (117.4, 164.4)		1.14 (0.67, 1.95)	19.6
Total	18	261.4 (200.4, 340.8)		133	192.7 (174.5, 212.8)		1.36 (1.02, 1.80)	68.6

Source: NMDS.

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

During 2011 to 2013 there was an average of 22 hospital admissions for injury from intentional self-harm among Māori aged 15–24 years, with the rate similar to that of non-Māori.

Māori aged 25–44 years were 36% more likely than non-Māori to be admitted for injury caused by intentional self-harm. On average 18 Māori per year in this age group were admitted.

Women were more likely to be admitted than men in both age groups.



Mauri ora: Pakeke

– Adults

This section focuses mainly on long term conditions among adults, including heart disease and stroke, cancer, diabetes, respiratory disease (asthma, chronic obstructive pulmonary disease), mental disorders, and gout. Information is also presented on hip fractures, hip replacements and cataract surgery. Self-assessed health status and smoking status are also included.

Information on other causes of hospitalisation or deaths in Southern can be found in the accompanying Excel® tables labelled 'Death registrations' and 'Hospitalisations by principal diagnosis'. For example, the hospitalisations table shows disparities between Southern Māori and non-Māori in rates of admission for viral hepatitis, diabetes complications with renal failure, thyroid disorders, gallstones, and tubulo-interstitial nephritis.

The New Zealand Health Survey provides other information on long term conditions and risk factors that have been shown to be more common for Māori adults than other adults at a national level, including medicated blood pressure, obesity, chronic pain, arthritis, oral disease, and mental distress ([Ministry of Health 2014](#)).

Self-assessed health

Table 36: Health status reported by Māori aged 15 years and over, Southern DHB, 2013

Health status	Southern DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Excellent	4,000*	13.5*	(8.7, 18.3)	18.1	(16.8, 19.3)
Very good	12,500	42.6	(35.5, 49.7)	37.0	(35.5, 38.5)
Good	8,000	27.8	(22.1, 33.6)	28.5	(27.3, 29.7)
Fair / poor	5,000	16.0	(11.4, 20.7)	16.4	(15.3, 17.5)

Source: Te Kupenga 2013, Statistics New Zealand customised report.

Note: * Sampling error was 30% or more but less than 50%.

Over half of Southern Māori adults (56%) reported having excellent or very good health and another 28% described their health as good. One in six (16%) reported having fair or poor health status.

Smoking status

Table 37: Cigarette smoking status, 15 years and over, Southern DHB, 2006 and 2013

Smoking status	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percent	
	Number	%	(95% CI)	Number	%	(95% CI)			
2006									
Regular smoker	5,621	39.7	(38.9, 40.5)	39,123	22.3	(22.1, 22.5)	1.78	(1.74, 1.82)	17.4
Ex-smoker	2,888	20.6	(20.0, 21.3)	46,992	19.4	(19.2, 19.6)	1.06	(1.03, 1.10)	1.2
Never smoked	5,777	39.7	(38.9, 40.5)	112,695	58.3	(58.0, 58.5)	0.68	(0.67, 0.70)	-18.6
2013									
Regular smoker	4,896	31.1	(30.4, 31.9)	29,520	16.4	(16.2, 16.6)	1.90	(1.85, 1.95)	14.7
Ex-smoker	3,876	23.1	(22.5, 23.8)	50,688	20.0	(19.8, 20.2)	1.16	(1.12, 1.19)	3.1
Never smoked	7,626	45.7	(44.9, 46.4)	124,560	63.6	(63.4, 63.8)	0.72	(0.71, 0.73)	-17.9

Source: 2006 and 2013 Census, Statistics New Zealand

Notes: % is age-standardised to the 2001 Māori population

Regular smokers smoke one or more cigarettes per day.

Between 2006 and 2013 the proportion of Māori adults who smoked cigarettes regularly decreased from 40% to 31% (approximately 4,900 smokers). The proportion who had never smoked increased from 40% to 46%. However, Māori remained 90% more likely than non-Māori to smoke regularly in 2013.

Heart disease and stroke

Table 38: Hospitalisations for circulatory system diseases, 25 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	101	1,233.1	(1,099.5, 1,383.0)	2,196	841.6	(813.7, 870.4)	1.47 (1.30, 1.65)	391.5
Male	113	1,337.1	(1,196.7, 1,494.0)	2,793	1,406.0	(1,368.5, 1,444.5)	0.95 (0.85, 1.07)	-68.9
Total	214	1,285.1	(1,186.6, 1,391.8)	4,989	1,123.8	(1,100.3, 1,147.7)	1.14 (1.05, 1.24)	161.3

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average 214 Māori were admitted to hospital per year for diseases of the circulatory system (including heart disease and stroke) between 2011 and 2013, at a rate 14% higher than non-Māori, or 161 more admissions per 100,000.

Table 39: Ischaemic heart disease indicators, 25 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Ischaemic heart disease admissions								
Female	25	308.2	(245.2, 387.6)	565	208.7	(196.3, 221.8)	1.48 (1.17, 1.87)	99.6
Male	29	336.2	(271.7, 416.0)	996	510.9	(489.6, 533.2)	0.66 (0.53, 0.82)	-174.7
Total	54	322.2	(275.7, 376.6)	1560	359.8	(347.4, 372.6)	0.90 (0.76, 1.05)	-37.6
Angiography procedures								
Female	19	240.6	(185.2, 312.4)	389	184.9	(172.8, 197.8)	1.30 (0.99, 1.70)	55.7
Male	25	295.1	(234.3, 371.7)	718	411.1	(391.3, 431.9)	0.72 (0.57, 0.91)	-116.0
Total	44	267.8	(225.3, 318.4)	1107	298.0	(286.3, 310.2)	0.90 (0.75, 1.07)	-30.1
Angioplasty procedures								
Female	6	77.9	(48.9, 124.1)	127	54.2	(48.2, 60.9)	1.44 (0.89, 2.32)	23.7
Male	9	112.9	(77.4, 164.8)	317	185.7	(172.5, 199.9)	0.61 (0.41, 0.89)	-72.8
Total	15	95.4	(71.1, 127.9)	444	120.0	(112.7, 127.7)	0.80 (0.59, 1.07)	-24.5
Coronary Artery Bypass Graft (CABG)								
Female	2	20.5	(8.5, 49.4)	33	14.2	(11.4, 17.7)	1.44 (0.58, 3.57)	6.3
Male	2	25.2	(11.9, 53.1)	123	62.1	(55.4, 69.7)	0.41 (0.19, 0.86)	-36.9
Total	4	22.8	(12.9, 40.4)	156	38.2	(34.5, 42.3)	0.60 (0.34, 1.07)	-15.3
Acute coronary syndrome admissions								
Female	19	231.1	(177.4, 301.0)	374	135.3	(125.4, 146.0)	1.71 (1.30, 2.25)	95.7
Male	20	223.3	(172.2, 289.7)	679	351.5	(333.6, 370.3)	0.64 (0.49, 0.83)	-128.2
Total	38	227.2	(188.7, 273.5)	1053	243.4	(233.1, 254.2)	0.93 (0.77, 1.13)	-16.2

Source: NMDS.

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average, 54 Māori per year were admitted to hospital for ischaemic heart disease. Māori women were 48% more likely to be admitted than non-Māori, while Māori men were 34% less likely. Of the 54 Māori admitted to hospital for ischaemic heart disease, 38 were admitted with acute coronary syndrome (ACS). The ACS admission rate for Māori women was 71% higher than for non-Māori women, while the admission rate for men was 36% lower than for non-Māori men.

There were 44 angiography procedures conducted for Māori patients per year. Māori men had a 28% lower rate of receipt than non-Māori. On average, nine Māori men and six Māori women per year had angioplasty procedures,

with the rate for Māori men 39% lower than for non-Māori. Among both Māori women and men there was an average of two coronary artery bypass grafts per year, with the rate for Māori men 59% lower than for non-Māori men.

Table 40: Hospitalisations for heart failure, stroke, and hypertensive disease, 25 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Heart failure									
Female	13	150.8	(109.9, 206.8)	281	64.1	(58.1, 70.7)	2.35	(1.69, 3.27)	86.7
Male	19	202.7	(154.4, 266.2)	309	95.7	(88.1, 104.0)	2.12	(1.59, 2.82)	107.0
Total	32	176.7	(143.8, 217.2)	589	79.9	(75.0, 85.1)	2.21	(1.78, 2.74)	96.8
Stroke									
Female	13	157.1	(114.6, 215.3)	291	81.7	(74.5, 89.5)	1.92	(1.38, 2.67)	75.4
Male	15	162.3	(120.0, 219.5)	342	139.2	(128.9, 150.2)	1.17	(0.85, 1.59)	23.1
Total	28	159.7	(128.4, 198.6)	633	110.4	(104.1, 117.1)	1.45	(1.15, 1.81)	49.3
Hypertensive disease									
Female	3	40.6	(20.9, 78.9)	58	23.2	(18.8, 28.5)	1.75	(0.87, 3.52)	17.4
Male	1	15.6	(4.9, 49.6)	30	18.3	(14.1, 23.8)	0.85	(0.26, 2.79)	-2.7
Total	4	28.1	(15.7, 50.1)	88	20.7	(17.6, 24.4)	1.35	(0.74, 2.47)	7.3

Source: NMDS.

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

There were 32 hospital admissions per year on average for Māori with heart failure, over twice the rate for non-Māori, or 97 more admissions per 100,000.

On average, 28 Māori per year were admitted for stroke, at a rate 45% higher than the non-Māori rate, or 49 more admissions per 100,000. There were four Māori admissions per year on average for hypertensive disease.

Table 41: Hospitalisations for chronic rheumatic heart disease and heart valve replacements, 25 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Chronic rheumatic heart disease									
Female	1	13.0	(4.2, 40.3)	10	4.6	(3.1, 6.8)	2.82	(0.85, 9.35)	8.4
Male	<1	2.9	(0.4, 20.7)	3	1.1	(0.5, 2.3)	2.69	(0.33, 21.97)	1.8
Total	1	8.0	(3.0, 21.4)	13	2.8	(2.0, 4.0)	2.80	(0.98, 8.00)	5.1
Heart valve replacements									
Female	1	8.8	(2.2, 35.3)	25	11.7	(8.6, 15.9)	0.75	(0.18, 3.12)	-2.9
Male	1	14.9	(5.5, 40.3)	48	22.4	(18.3, 27.5)	0.67	(0.24, 1.83)	-7.5
Total	2	11.9	(5.3, 26.7)	73	17.1	(14.4, 20.2)	0.70	(0.30, 1.59)	-5.2

Source: NMDS.

On average, one Māori per year was admitted with chronic rheumatic heart disease, and two per year received heart valve replacements.

Table 42: Early deaths from circulatory system disease, Southern DHB, 2007–2011

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	6	39.2	(27.2, 56.4)	54	15.3	(13.3, 17.6)	2.57 (1.74, 3.79)	23.9
Male	12	70.2	(54.1, 91.1)	118	35.5	(32.4, 38.9)	1.98 (1.50, 2.61)	34.7
Total	17	54.7	(44.2, 67.6)	172	25.4	(23.5, 27.4)	2.15 (1.72, 2.70)	29.3

Source: Mortality data, Ministry of Health

Notes: “Early deaths” are defined as those occurring under 75 years of age.

Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average 17 Māori per year died early from circulatory system diseases, at a rate twice that of non-Māori, or 29 more deaths per 100,000.

Diabetes

Table 43: Diabetes prevalence, medication use, monitoring of blood glucose levels, screening for renal disease, Southern DHB, 2013

Indicator	Māori		Non-Māori		Māori/non-Māori ratio	Difference in percentage
	Count	% (crude)	Count	% (crude)		
Prevalence of diabetes (all ages)	864	3.1	14,260	5.1	0.61	-2.0
People with diabetes regularly receiving metformin or insulin, 25+	462	53.5	7,622	53.4	1.00	0.0
People with diabetes having regular Hb1Ac monitoring, 25+	696	80.6	11,835	81.5	0.99	-0.9
People with diabetes having regular screening for renal disease, 25+	492	56.9	8,516	59.7	0.95	-2.8

Source: NZ Atlas of Healthcare Variation

Note: The ‘crude’ percentage is not adjusted for differences in the age structure of the Māori and non-Māori populations.

Approximately 860 Māori in Southern were estimated to have diabetes in 2013, giving a crude prevalence of 3% (compared to 5% in non-Māori). Over half of Māori with diabetes were regularly receiving metformin or insulin; 81% had regular blood glucose monitoring and 57% were being screened for renal disease.

Table 44: Hospitalisations for lower limb amputations for people with concurrent diabetes, 15 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	<1	2.4	(0.3, 17.0)	18	6.2	(4.5, 8.5)	0.39 (0.05, 2.83)	-3.8
Male	2	19.4	(8.6, 43.8)	23	7.8	(5.9, 10.3)	2.48 (1.05, 5.87)	11.6
Total	2	10.9	(5.1, 23.2)	41	7.0	(5.7, 8.7)	1.56 (0.71, 3.42)	3.9

Source: NMDS

Note Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average two Māori per year with diabetes had lower limbs amputated. Māori men with diabetes had lower limb amputations at a rate 2.5 times that of non-Māori men, or 12 more amputations per 100,000.

Cancer

Table 45: Most common cancer registrations for Māori by site, all ages, Southern DHB, 2008–2012

Gender and site	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female									
All cancers	32	198.4	(169.5, 232.2)	693	180.0	(172.3, 188.0)	1.10	(0.94, 1.30)	18.4
Breast	8	53.4	(39.2, 72.8)	185	56.7	(52.6, 61.2)	0.94	(0.69, 1.29)	-3.3
Lung	8	48.4	(35.4, 66.2)	56	11.0	(9.5, 12.7)	4.40	(3.12, 6.20)	37.4
Colorectal	3	15.9	(9.2, 27.5)	132	24.5	(22.3, 26.9)	0.65	(0.37, 1.13)	-8.6
Male									
All cancers	28	163.6	(138.2, 193.7)	755	184.5	(177.4, 192.0)	0.89	(0.75, 1.05)	-20.9
Lung	6	33.4	(23.3, 48.0)	75	14.9	(13.3, 16.7)	2.24	(1.53, 3.27)	18.5
Colorectal	4	23.7	(15.6, 36.1)	136	29.7	(27.3, 32.3)	0.80	(0.52, 1.23)	-5.9
Prostate	4	21.4	(13.8, 33.2)	202	43.9	(41.1, 46.9)	0.49	(0.31, 0.76)	-22.5
Testis	2	13.0	(6.4, 26.3)	9	6.9	(5.1, 9.3)	1.89	(0.87, 4.08)	6.1

Source: Cancer Registry, Ministry of Health

Note Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

There were 32 cancer registrations per year on average among Māori females in Southern DHB, at a similar rate to non-Māori. The most common cancers registered for Māori females were breast and lung cancers (each a quarter of all cancers) and colorectal cancer. Lung cancer incidence was 4.4 times as high for Māori as for non-Māori women.

Among Māori males there were 28 cancer registrations per year on average. Lung (21% of all cancers), colorectal, prostate, and testicular cancers were the most common cancers registered for Māori males. Lung cancer was over twice as common among Māori compared to non-Māori males, while prostate cancer was half as frequently registered.

Table 46: Most common cancer deaths for Māori by site, all ages, Southern DHB, 2007–2011

Gender and site	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female									
All cancers	13	86.0	(67.4, 109.7)	313	55.8	(52.2, 59.7)	1.54	(1.20, 1.98)	30.1
Lung	6	39.4	(27.5, 56.5)	44	8.2	(7.0, 9.6)	4.80	(3.23, 7.12)	31.2
Breast	1	9.5	(4.5, 20.1)	43	10.1	(8.6, 12.0)	0.94	(0.44, 2.02)	-0.6
Male									
All cancers	12	70.2	(54.5, 90.4)	349	69.4	(65.6, 73.5)	1.01	(0.78, 1.31)	0.8
Lung	3	19.1	(11.9, 30.8)	65	12.7	(11.2, 14.3)	1.51	(0.92, 2.47)	6.4
Colorectal	2	12.5	(6.9, 22.7)	62	12.6	(11.1, 14.4)	0.99	(0.54, 1.82)	-0.1
Pancreas	1	8.2	(3.9, 17.3)	14	2.8	(2.2, 3.7)	2.90	(1.32, 6.39)	5.4

Source: Death registrations, Ministry of Health

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

For Māori females, deaths from cancer comprised nearly 40% of all deaths, with a rate 54% higher than the rate for non-Māori. Lung cancer was the most common cause of cancer death (45% of all cancer deaths), followed by breast cancer. The lung cancer mortality rate was 4.8 times the non-Māori rate, or 31 more deaths per 100,000.

For Māori males, cancer deaths accounted for 27% of all deaths, at a similar rate to non-Māori males. Lung, colorectal and pancreatic cancers were the most common causes of cancer death. The mortality rate from pancreatic cancer was 2.9 times that of non-Māori rate, or five more deaths per 100,000.

Breast and cervical cancer screening

Table 47: BreastScreen Aotearoa breast screening coverage, women aged 45–69 years, Southern DHB, 24 months to 31 December 2014

Māori			Non-Māori		
Number screened	Eligible population	% screened	Number screened	Eligible population	% screened
1,722	2,855	60.3	34,290	46,045	74.5

Source: National Screening Unit, Ministry of Health

BreastScreen Aotearoa provides free mammography screening for breast cancer to women aged 45 to 69 years, with a target of at least 70% of eligible women screened every two years. During the two years to the end of 2014, 60% of Māori women and 75% of non-Māori women in the Southern District had been screened.

Table 48: Cervical screening coverage, women aged 25–69 years, Southern DHB, 3 years and 5 years to 31 December 2014

Māori					Non-Māori				
Eligible population	Women screened in last 5 years	5-year coverage %	Women screened in last 3 years	3-year coverage %	Eligible population	Women screened in last 5 years	5-year coverage %	Women screened in last 3 years	3-year coverage %
6,074	4,436	73.0%	3,624	59.7%	71,191	67,796	95.2%	57,655	81.0%

Source: National Screening Unit, Ministry of Health

Note: Population is adjusted for hysterectomy.

Among women aged 25 to 69 years, 73% of Māori and 95% of non-Māori had had a cervical smear test during the five years prior to December 2014. The three year coverage was 60% for Māori women and 81% for non-Māori women. The National Cervical Screening Programme has a three year screening coverage target of 80% of eligible women aged 25 to 69 years.

Respiratory disease

Table 49: Hospitalisations for asthma, by age group, Southern DHB, 2011–2013

Gender and age group	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
0–14 years									
Female	21	447.1	(349.2, 572.5)	50	224.6	(191.3, 263.8)	1.99	(1.48, 2.67)	222.5
Male	42	810.0	(680.0, 964.8)	119	507.3	(457.4, 562.7)	1.60	(1.30, 1.96)	302.7
Total	63	628.5	(544.8, 725.1)	169	366.0	(335.4, 399.3)	1.72	(1.45, 2.03)	262.6
15–34 years									
Female	8	163.4	(109.1, 244.9)	25	65.8	(52.3, 82.7)	2.48	(1.56, 3.95)	97.6
Male	3	71.2	(36.4, 139.0)	14	39.3	(29.1, 53.0)	1.81	(0.87, 3.78)	31.9
Total	11	117.3	(82.9, 166.0)	39	52.5	(43.8, 63.0)	2.23	(1.51, 3.31)	64.8
35–64 years									
Female	8	174.3	(115.1, 264.0)	41	71.6	(59.1, 86.7)	2.44	(1.54, 3.85)	102.8
Male	3	76.2	(38.9, 149.2)	15	29.0	(21.1, 40.0)	2.63	(1.25, 5.53)	47.2
Total	11	125.3	(88.0, 178.5)	56	50.3	(42.6, 59.3)	2.49	(1.69, 3.68)	75.0
65 years and over									
Female	1	178.0	(57.4, 552.4)	25	80.7	(61.9, 105.2)	2.21	(0.69, 7.06)	97.3
Male	1	155.2	(50.1, 481.3)	5	26.3	(15.8, 43.8)	5.91	(1.71, 20.45)	129.0
Total	2	166.6	(74.7, 371.7)	30	53.5	(42.2, 67.8)	3.12	(1.35, 7.19)	113.1

Source: NMDS.

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average there were 63 admissions for asthma per year among Māori children aged 0–14 years, at a rate 72% higher than non-Māori. Among Māori adults aged 15–34 and those aged 35–64 years, the rate was twice that of non-Māori. Among those aged 65 years and over, Māori were admitted at 3 times the rate of non-Māori.

Table 50: Hospitalisations for chronic obstructive pulmonary disease (COPD), 45 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	41	1,337.7	(1,119.7, 1,598.2)	406	403.3	(378.0, 430.3)	3.32	(2.74, 4.01)	934.4
Male	26	746.1	(596.1, 933.8)	463	440.6	(415.6, 467.1)	1.69	(1.34, 2.14)	305.5
Total	67	1,041.9	(906.1, 1,198.1)	869	421.9	(404.0, 440.7)	2.47	(2.13, 2.86)	620.0

Source: NMDS.

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

There were 67 hospitalisations per year on average for Māori with COPD, at a rate 2.5 times that of non-Māori, or 620 more admissions per 100,000. Māori women had a higher rate of admission than Māori men.

Table 51: Early deaths from respiratory disease, Southern DHB, 2007–2011

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	2	13.8	(7.4, 25.7)	26	6.5	(5.4, 7.8)	2.12	(1.11, 4.06)	7.3
Male	1	7.3	(3.2, 16.3)	29	9.4	(7.5, 11.7)	0.77	(0.33, 1.78)	-2.1
Total	3	10.5	(6.4, 17.3)	56	8.0	(6.8, 9.2)	1.33	(0.79, 2.22)	2.6

Source: Mortality data, Ministry of Health

Notes: “Early deaths” defined as those occurring under 75 years of age.

Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average, three Māori per year died early from respiratory disease. The mortality rate for Māori females under 75 years was twice that of non-Māori females.

Mental disorders

Table 52: Hospitalisations for mental disorders, all ages, Southern DHB, 2011–2013

Disorder	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate (95% CI)		Ave. no. per year	Age-standardised rate (95% CI)			
Female								
All disorders	83	558.5	(492.4, 633.4)	935	539.6	(516.9, 563.2)	1.03 (0.91, 1.18)	18.9
Schizophrenia	15	99.4	(74.0, 133.5)	120	62.2	(55.4, 70.0)	1.60 (1.16, 2.19)	37.2
Mood (affective)	28	181.0	(145.5, 225.1)	278	150.0	(138.6, 162.3)	1.21 (0.96, 1.52)	31.0
—Bipolar	16	100.6	(75.5, 133.9)	73	37.5	(32.3, 43.5)	2.68 (1.94, 3.71)	63.1
—Depressive episode	7	46.6	(29.9, 72.5)	107	64.0	(56.5, 72.6)	0.73 (0.46, 1.15)	-17.5
Substance use	16	112.6	(84.5, 150.0)	134	99.2	(89.4, 110.0)	1.14 (0.84, 1.54)	13.4
—Alcohol	11	72.0	(50.7, 102.3)	111	80.9	(72.1, 90.6)	0.89 (0.62, 1.29)	-8.9
Anxiety, stress-related	15	98.0	(72.7, 132.3)	144	84.3	(75.6, 94.1)	1.16 (0.85, 1.60)	13.7
Male								
All disorders	111	819.3	(733.8, 914.8)	837	496.2	(474.3, 519.0)	1.65 (1.47, 1.86)	323.1
Schizophrenia	47	376.8	(318.5, 445.7)	217	138.7	(127.6, 150.8)	2.72 (2.25, 3.28)	238.0
Mood (affective)	19	133.9	(102.8, 174.5)	181	94.5	(85.8, 104.2)	1.42 (1.07, 1.88)	39.4
—Bipolar	8	60.9	(40.7, 91.0)	64	31.4	(26.7, 36.9)	1.94 (1.26, 2.99)	29.5
—Depressive episode	9	61.0	(41.7, 89.3)	66	37.8	(32.2, 44.5)	1.61 (1.07, 2.44)	23.2
Substance use	25	169.6	(134.5, 213.8)	174	123.8	(112.8, 135.8)	1.37 (1.07, 1.76)	45.8
—Alcohol	16	105.7	(78.8, 141.7)	141	98.4	(88.7, 109.2)	1.07 (0.79, 1.47)	7.3
Anxiety, stress-related	10	69.8	(48.3, 100.8)	115	70.7	(62.7, 79.8)	0.99 (0.67, 1.45)	-1.0
Total								
All disorders	194	688.9	(634.0, 748.6)	1772	517.9	(502.0, 534.2)	1.33 (1.22, 1.45)	171.0
Schizophrenia	62	238.1	(205.7, 275.7)	336	100.5	(93.9, 107.6)	2.37 (2.02, 2.79)	137.6
Mood (affective)	47	157.5	(133.1, 186.3)	459	122.3	(115.0, 130.0)	1.29 (1.08, 1.54)	35.2
—Bipolar	24	80.7	(63.9, 102.0)	137	34.4	(30.9, 38.4)	2.34 (1.81, 3.04)	46.3
—Depressive episode	16	53.8	(40.3, 71.8)	173	50.9	(46.1, 56.2)	1.06 (0.78, 1.43)	2.9
Substance use	41	141.1	(117.8, 169.0)	308	111.5	(104.0, 119.5)	1.27 (1.04, 1.54)	29.6
—Alcohol	26	88.9	(70.9, 111.3)	252	89.6	(83.0, 96.8)	0.99 (0.78, 1.26)	-0.8
Anxiety, stress-related	25	83.9	(66.5, 105.9)	259	77.5	(71.5, 84.1)	1.08 (0.85, 1.38)	6.4

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

Rates of hospitalisation for mental disorders were 33% higher for Māori than for non-Māori.

The most common cause of Māori admission was schizophrenia related disorders, with 62 admissions per year on average, at 2.4 times the rate of non-Māori.

Admissions for mood disorders and substance use were the next most common causes of Māori admission with 47 and 41 admissions per year respectively.

Māori admissions rates for mood and substance use disorders were around a quarter higher for Māori than for non-Māori.

Gout

Table 53: Gout prevalence and treatment, 20-79 years, Southern DHB, 2011

Indicator	Māori		Non-Māori		Māori/non-Māori ratio	Difference in percentage
	Count	%	Count	%		
Gout prevalence	689	4.8	6,100	3.2	1.51	1.6
People with gout who received allopurinol regularly	293	42.5	2,787	45.7	0.93	-3.2
Colchicine use by people with gout not dispensed allopurinol	59	8.6	498	8.2	1.05	0.4
NSAID use by people with gout	320	46.4	2,385	39.1	1.19	7.3
Serum urate test within six months following allopurinol dispensing	119	27.9	957	26.8	1.04	1.1

Source: NZ Atlas of Healthcare Variation, Ministry of Health.

Notes: Denominator is people in contact with health services (using Health Tracker). Prevalence may be underestimated by up to 20%. Prevalence rates are not age adjusted. NSAID is non-steroidal anti-inflammatory medication.

Around 690 Māori were estimated to have gout in 2011, giving a prevalence of 5%, higher than the prevalence among non-Māori (3%). Forty-three percent of Māori with gout regularly received allopurinol, a preventive therapy to lower urate levels. Of those who received allopurinol (for gout or other reasons), 28% had a lab test for serum urate levels within the following six months. Just under half of Māori with gout used non-steroidal anti-inflammatory medication.

Table 54: Hospitalisations for gout, 25 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference	
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	3	33.8	(16.7, 68.6)	13	3.4	(2.1, 5.5)	10.04	(4.23, 23.80)	30.4
Male	7	80.6	(51.7, 125.7)	54	29.5	(24.1, 36.0)	2.73	(1.68, 4.45)	51.1
Total	10	57.2	(39.2, 83.3)	67	16.4	(13.6, 19.8)	3.48	(2.29, 5.30)	40.8

Source: NMDS

Note: Ratios in bold show that Māori rates were significantly different from non-Māori rates in the DHB.

There were 10 hospital admissions for gout per year on average among Māori. The rate of admission for Māori was 3.5 times as high as for non-Māori, or 41 more admissions per 100,000.

Hip fractures

Table 55: Hospitalisations for hip fractures, 65 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference	
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	2	306.0	(143.9, 650.7)	188	398.8	(360.5, 441.2)	0.77	(0.36, 1.64)	-92.8
Male	1	134.1	(43.0, 418.7)	76	235.0	(203.5, 271.4)	0.57	(0.18, 1.80)	-100.9
Total	3	220.1	(117.3, 412.7)	265	316.9	(291.7, 344.3)	0.69	(0.37, 1.31)	-96.8

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average, three Māori per year aged 65 and over were admitted to hospital for hip fractures, at a rate of 220 per 100,000.

Elective surgery

Table 56: Hospitalisations for hip replacements, 50 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	6	278.7	(175.2, 443.4)	192	290.1	(264.9, 317.7)	0.96	(0.60, 1.54)	-11.4
Male	8	317.9	(210.8, 479.6)	147	248.9	(224.9, 275.4)	1.28	(0.84, 1.95)	69.1
Total	14	298.3	(219.2, 406.0)	339	269.5	(251.9, 288.4)	1.11	(0.81, 1.52)	28.8

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average, 14 Māori per year were admitted to hospital for a hip replacement, at a rate similar to that of non-Māori.

Table 57: Publicly funded hospitalisations for cataract surgery, 45 years and over, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	12	383.6	(276.5, 532.2)	453	344.8	(323.2, 367.8)	1.11	(0.80, 1.55)	38.8
Male	14	373.6	(275.4, 506.9)	315	292.8	(272.3, 314.8)	1.28	(0.93, 1.75)	80.9
Total	26	378.6	(302.6, 473.7)	768	318.8	(303.8, 334.6)	1.19	(0.94, 1.49)	59.8

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

Twenty-six Māori per year aged 45 years and over were admitted to hospital for cataract surgery, at a rate similar to that of non-Māori.

Mauri ora: All ages

This section presents information on overall hospitalisations, potentially avoidable and ambulatory sensitive hospitalisations, overall mortality rates, potentially avoidable mortality and mortality amenable to health care, and injuries. ICD codes for these classifications are provided in Appendix 2. Life expectancy at birth is presented for the Otago and Southland Regions.

Hospitalisations

Table 58: All-cause hospitalisations, all ages, Southern DHB, 2011–2013

Gender	Māori				Non-Māori				Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	2,827	19,131.4	(18,721.9, 19,549.8)	33,813	19,852.1	(19,690.3, 20,015.2)	0.96	(0.94, 0.99)	-720.7	
Male	2,314	15,143.5	(14,782.8, 15,513.1)	28,604	16,350.6	(16,201.6, 16,501.1)	0.93	(0.90, 0.95)	-1,207.1	
Total	5,141	17,137.5	(16,863.7, 17,415.7)	62,417	18,101.4	(17,991.2, 18,212.2)	0.95	(0.93, 0.96)	-963.9	

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average, there were 5,141 Māori hospital admissions per year and 62,417 non-Māori admissions. All-cause admission rates were 5% lower for Māori than for non-Māori, or 964 fewer admissions per 100,000.

Data on hospital admissions by principal diagnosis are available in the accompanying Excel tables.

Potentially avoidable hospitalisations

Table 59: Potentially avoidable hospitalisations, 0–74 years, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference	
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	666	4,576.8	(4,377.7, 4,784.9)	5,453	3,835.1	(3,762.4, 3,909.1)	1.19	(1.14, 1.25)	741.7
Male	654	4,381.9	(4,188.4, 4,584.2)	5,916	4,226.8	(4,150.1, 4,305.0)	1.04	(0.99, 1.09)	155.0
Total	1,320	4,479.3	(4,339.6, 4,623.5)	11,369	4,030.9	(3,978.0, 4,084.6)	1.11	(1.07, 1.15)	448.4

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB. Table revised April 2016.

More than 1,300 Māori hospital admissions per year were potentially avoidable through population based prevention strategies. The rate of avoidable admissions was 11% higher for Māori than for non-Māori, or 448 more admissions per 100,000.

Table 60: Ambulatory care sensitive hospitalisations, 0–74 years, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference	
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	336	2,350.0	(2,207.6, 2,501.5)	2,607	1,945.4	(1,891.4, 2,000.9)	1.21	(1.13, 1.29)	404.6
Male	381	2,544.2	(2,398.3, 2,699.1)	3,028	2,218.9	(2,161.9, 2,277.3)	1.15	(1.07, 1.22)	325.4
Total	718	2,441.8	(2,339.2, 2,549.0)	5,635	2,077.6	(2,038.3, 2,117.7)	1.18	(1.12, 1.23)	364.2

Source: NMDS

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average, there were 718 ambulatory care sensitive hospitalisations per year among Māori, at a rate that was 18% higher than the non-Māori rate, or 364 more admissions per 100,000.

Mortality

Table 61: Life expectancy at birth, Otago and Southland Regions, 2012–2014

Region and Gender	Māori		Non-Māori		Difference in years
	Years (95% credible interval)		Years (95% credible interval)		
Otago Region					
Female	82.3	(80.5, 84.3)	83.3	(83.0, 83.6)	-1.0
Male	78.4	(76.4, 80.4)	79.6	(79.3, 79.9)	-1.2
Southland Region					
Female	78.7	(77.2, 80.2)	82.8	(82.4, 83.2)	-4.1
Male	74.6	(73.2, 76.3)	79.0	(78.6, 79.4)	-4.4

Source: Statistics New Zealand Subnational Period Life Tables: 2012–14.

Notes: This data is for the two regions in Southern DHB: Otago and Southland. A map of Regional Council boundaries can be found [here](#). The credible interval is the 2.5th percentile and the 97.5th percentile, the expected years of life at birth is the 50th percentile. Further information on the regional life tables and methods can be found [here](#).

Life expectancy at birth is a summary measure of age-specific mortality rates during a specific period, and takes no account of any changes in mortality rates after that period.

During the period 2012 to 2014, life expectancy at birth for Māori females in the Otago Region was 82.3 years, only one year lower than that of non-Māori females.

Māori male life expectancy in Otago was 78.4 years, 1.2 years lower than the life expectancy of non-Māori males, but nearly four years lower than that of Māori females.

In the Southland Region, Māori female life expectancy was 78.7 years, lower than that of Māori females in the Otago Region and 4.1 years lower than the life expectancy of non-Māori females in Southland.

Māori males in Southland had a life expectancy of 74.6 years, also lower than that of Otago Māori males, and 4.4 years lower than the life expectancy of non-Māori males in Southland.

Table 62: All-cause deaths, all ages, Southern DHB, 2008–2012

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	32	215.3	(192.7, 240.7)	1,152	159.5	(154.4, 164.7)	1.35 (1.20, 1.52)	55.8
Male	49	325.3	(297.2, 356.0)	1,081	238.7	(232.3, 245.3)	1.36 (1.24, 1.50)	86.6
Total	81	270.3	(252.0, 289.9)	2,233	199.1	(195.0, 203.3)	1.36 (1.26, 1.46)	71.2

Source: Mortality dataset, Ministry of Health.

Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

There were 81 Māori deaths per year on average during 2008 to 2012. The Māori all-cause mortality rate was 36% higher than the non-Māori rate, or 71 more deaths per 100,000.

Table 63: Leading causes of death for Māori, all ages, Southern DHB, 2007–2011

Gender and cause	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female								
Lung cancer	6	39.4	(27.5, 56.5)	44	8.2	(7.0, 9.6)	4.80 (3.23, 7.12)	31.2
IHD	6	31.5	(21.6, 46.0)	217	16.2	(14.9, 17.5)	1.95 (1.33, 2.87)	15.4
COPD	3	16.1	(9.3, 27.9)	66	7.8	(6.9, 9.0)	2.06 (1.17, 3.62)	8.3
Stroke	2	11.4	(6.1, 21.4)	134	10.5	(9.3, 11.9)	1.09 (0.57, 2.07)	0.9
Suicide	2	11.8	(5.8, 23.7)	8	5.1	(3.7, 7.2)	2.29 (1.06, 4.97)	6.6
Diabetes	2	9.3	(4.6, 18.9)	21	2.7	(2.0, 3.5)	3.49 (1.63, 7.49)	6.6
Male								
IHD	8	50.9	(37.4, 69.2)	222	36.1	(33.6, 38.8)	1.41 (1.03, 1.94)	14.9
Accidents	6	44.0	(30.7, 63.1)	56	26.7	(23.0, 31.0)	1.65 (1.12, 2.44)	17.3
Suicide	3	21.1	(12.3, 36.1)	29	18.5	(15.5, 22.1)	1.14 (0.65, 2.00)	2.6
Lung cancer	3	19.1	(11.9, 30.8)	65	12.7	(11.2, 14.3)	1.51 (0.92, 2.47)	6.4
COPD	3	17.4	(10.4, 29.1)	69	9.9	(8.8, 11.2)	1.75 (1.03, 2.97)	7.5
Total								
IHD	14	41.2	(32.5, 52.3)	439	26.1	(24.7, 27.6)	1.58 (1.24, 2.02)	15.1
Lung cancer	9	29.2	(21.9, 39.0)	109	10.4	(9.5, 11.5)	2.80 (2.07, 3.80)	18.8
Accidents	7	23.3	(16.4, 33.0)	92	18.3	(16.1, 20.8)	1.27 (0.88, 1.84)	5.0
COPD	6	16.7	(11.5, 24.4)	135	8.9	(8.1, 9.7)	1.89 (1.28, 2.78)	7.9
Stroke	5	13.8	(9.1, 20.9)	212	10.8	(9.9, 11.9)	1.27 (0.83, 1.95)	2.9

Source: Mortality dataset, Ministry of Health.

Notes: IHD is ischaemic heart disease, COPD is chronic obstructive pulmonary disease.

Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

The leading causes of death for Māori females during 2007–2011 were lung cancer, ischaemic heart disease (IHD), stroke, suicide, and diabetes. Significant disparities in mortality rates were evident for each of these causes of death, apart from stroke. Lung cancer mortality was notably 4.8 times as high for Māori as for non-Māori women.

For Māori males, the leading causes of death were IHD, accidents, suicide, lung cancer, and COPD. Mortality rates for IHD, accidents, and COPD were higher for Māori than for non-Māori males.

Data on leading causes of death by ICD chapter are available in the accompanying Excel tables.

Potentially avoidable mortality

Avoidable mortality includes deaths occurring among those less than 75 years old that could potentially have been avoided through population-based interventions (including actions to address the social determinants of health) or through preventive and curative interventions at an individual level.

Amenable mortality is a subset of avoidable mortality and is restricted to deaths from conditions that are amenable to health care.

Table 64: Potentially avoidable mortality, 0–74 years, Southern DHB, 2007–2011

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	20	139.1	(114.2, 169.3)	214	73.1	(67.8, 78.8)	1.90 (1.54, 2.35)	66.0
Male	28	180.8	(152.9, 213.9)	321	124.8	(117.4, 132.7)	1.45 (1.21, 1.73)	56.0
Total	48	160.0	(140.8, 181.8)	535	99.0	(94.4, 103.8)	1.62 (1.41, 1.85)	61.0

Source: Mortality, Ministry of Health

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

There were 48 potentially avoidable Māori deaths per year on average, at a rate 62% higher than the non-Māori rate, or 61 more deaths per 100,000.

Table 65: Amenable mortality, 0–74 years, Southern DHB, 2007–2011

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	12	83.5	(64.8, 107.7)	142	50.1	(45.7, 55.0)	1.67	(1.27, 2.18)	33.4
Male	21	131.3	(107.9, 159.7)	226	89.5	(83.2, 96.3)	1.47	(1.19, 1.81)	41.8
Total	33	107.4	(92.0, 125.4)	367	69.8	(65.9, 73.9)	1.54	(1.30, 1.81)	37.6

Source: Mortality, Ministry of Health

Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

The rate of deaths amenable to health care was 54% higher for Māori than for non-Māori, or 38 more deaths per 100,000. On average, 33 Māori per year died from conditions amenable to health care.

Injuries

A table on the causes of hospital admissions for injuries can be found in the accompanying Excel tables. The most common causes of injury among Southern DHB Māori were falls, exposure to mechanical forces, complications of medical and surgical care, transport accidents, assault, and intentional self-harm.

Table 66: Hospitalisations for injuries, all ages, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	256	1,722.9	(1,603.2, 1,851.5)	3,196	1,645.6	(1,600.8, 1,691.7)	1.05	(0.97, 1.13)	77.2
Male	379	2,602.1	(2,451.6, 2,761.8)	3,877	2,530.9	(2,475.3, 2,587.7)	1.03	(0.96, 1.10)	71.2
Total	635	2,162.5	(2,065.4, 2,264.1)	7,073	2,088.3	(2,052.5, 2,124.7)	1.04	(0.99, 1.09)	74.2

Source: NMDS

Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average there were 635 hospitalisations for injury among Māori, at a rate similar to non-Māori.

Table 67: Hospitalisations for assault and homicide, all ages, Southern DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	19	129.2	(99.1, 168.5)	44	36.4	(30.3, 43.7)	3.55	(2.57, 4.90)	92.8
Male	41	296.8	(247.9, 355.3)	171	138.4	(126.5, 151.4)	2.14	(1.75, 2.62)	158.4
Total	60	213.0	(183.5, 247.3)	215	87.4	(80.6, 94.7)	2.44	(2.06, 2.89)	125.6

Source: NMDS

Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

Sixty Māori per year were admitted to hospital for injury caused by assault, at a rate 2.4 times the non-Māori rate, or 126 more admissions per 100,000. Males had higher admission rates than females.

Table 68: Deaths from injury, all ages, Southern DHB, 2007–2011

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	2	17.0	(9.6, 30.1)	46	16.0	(13.3, 19.3)	1.06	(0.58, 1.94)	1.0
Male	9	66.3	(49.4, 89.2)	88	46.7	(41.7, 52.2)	1.42	(1.04, 1.95)	19.7
Total	12	41.7	(32.0, 54.2)	133	31.3	(28.4, 34.5)	1.33	(1.01, 1.76)	10.3

Source: Mortality dataset, Ministry of Health.

Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average 12 Māori per year died from injuries, at a rate a third higher than non-Māori, or 10 more deaths per 100,000.



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Appendix 1: Population projections

Table 69: Māori population projections, single year by age group, Southern DHB, 2013 to 2020

Projected Māori Population by Age and Sex at 30 June 2014-20 (2013-Base)

*** Medium Projection : Assuming Medium Fertility, Medium Mortality, and Medium Migration ***

Age	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	2013(Base)			2014			2015			2016		
0	380	340	720	370	350	730	370	350	720	370	350	720
1-4	1,510	1,340	2,840	1,500	1,330	2,830	1,480	1,360	2,840	1,490	1,380	2,870
5-9	1,710	1,540	3,250	1,800	1,600	3,400	1,840	1,640	3,490	1,880	1,670	3,550
10-14	1,590	1,420	3,010	1,560	1,430	2,990	1,610	1,470	3,080	1,620	1,470	3,090
15-19	1,580	1,570	3,150	1,620	1,580	3,200	1,620	1,560	3,190	1,670	1,600	3,270
20-24	1,420	1,430	2,850	1,490	1,470	2,950	1,540	1,490	3,020	1,510	1,460	2,980
25-29	880	980	1,860	940	1,030	1,970	990	1,040	2,040	1,100	1,110	2,210
30-34	770	920	1,700	790	920	1,710	810	970	1,780	810	950	1,760
35-39	790	850	1,640	760	850	1,600	750	840	1,590	760	880	1,630
40-44	810	920	1,730	810	910	1,720	810	900	1,710	790	890	1,690
45-49	770	870	1,640	780	880	1,660	790	900	1,690	790	890	1,680
50-54	660	740	1,400	680	780	1,470	700	810	1,510	750	810	1,560
55-59	550	530	1,090	590	580	1,170	620	590	1,200	600	650	1,240
60-64	440	380	820	450	390	830	450	440	890	490	460	940
65-69	330	270	590	340	290	630	360	310	670	380	340	720
70-74	240	180	420	250	200	450	240	200	450	240	210	440
75-79	140	120	260	150	110	260	180	130	310	200	140	340
80-84	70	70	130	70	80	150	80	80	160	80	90	170
85-89	20	30	50	20	40	60	30	40	70	40	50	90
90+	10	10	20	10	10	20	10	10	30	10	20	30
All Ages	14,700	14,500	29,200	15,000	14,800	29,800	15,300	15,100	30,400	15,600	15,400	31,000
	2017			2018			2019			2020		
0	370	350	720	370	350	730	380	360	730	380	360	740
1-4	1,500	1,410	2,910	1,490	1,410	2,900	1,490	1,410	2,900	1,500	1,420	2,920
5-9	1,870	1,660	3,530	1,880	1,680	3,560	1,860	1,680	3,540	1,840	1,710	3,540
10-14	1,640	1,530	3,170	1,700	1,540	3,240	1,780	1,590	3,380	1,820	1,630	3,450
15-19	1,700	1,560	3,260	1,710	1,540	3,250	1,670	1,550	3,220	1,720	1,580	3,300
20-24	1,560	1,510	3,070	1,540	1,530	3,060	1,570	1,530	3,090	1,570	1,510	3,070
25-29	1,130	1,160	2,290	1,210	1,190	2,400	1,280	1,220	2,500	1,330	1,240	2,570
30-34	830	950	1,780	830	950	1,780	880	990	1,870	940	1,000	1,940
35-39	740	870	1,610	740	900	1,650	760	900	1,650	780	940	1,720
40-44	780	860	1,650	780	830	1,610	740	820	1,560	730	820	1,550
45-49	790	900	1,690	790	900	1,690	780	890	1,680	780	870	1,660
50-54	740	840	1,580	740	850	1,590	750	850	1,600	760	870	1,630
55-59	610	680	1,290	630	710	1,340	650	750	1,400	660	780	1,440
60-64	520	470	990	520	510	1,040	560	560	1,120	580	560	1,140
65-69	390	360	750	410	360	770	420	360	780	420	410	840
70-74	250	220	470	290	240	540	310	270	570	320	280	600
75-79	220	150	370	200	170	370	210	180	390	210	180	390
80-84	90	100	190	110	100	210	110	90	210	140	110	250
85-89	40	50	90	50	50	100	60	60	120	60	70	120
90+	20	20	40	20	20	40	20	30	50	30	30	60
All Ages	15,800	15,600	31,400	16,000	15,800	31,900	16,300	16,100	32,400	16,600	16,400	32,900

These projections were derived in October 2014.

Source: Statistics New Zealand DHB Population Projections

Table 70: Total population projections, single year, by age group, Southern DHB, 2013 to 2020

Projected Māori Population by Age and Sex at 30 June 2014-20 (2013-Base)

*** Medium Projection : Assuming Medium Fertility, Medium Mortality, and Medium Migration ***

Age	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	2013(Base)			2014			2015			2016		
0	1,850	1,790	3,640	1,820	1,730	3,540	1,820	1,730	3,550	1,820	1,730	3,550
1-4	8,080	7,390	15,470	7,930	7,390	15,320	7,710	7,250	14,950	7,540	7,170	14,710
5-9	9,530	9,000	18,530	9,830	9,110	18,940	10,020	9,270	19,290	10,220	9,370	19,580
10-14	9,570	9,030	18,600	9,470	8,980	18,450	9,430	8,940	18,370	9,260	8,820	18,080
15-19	11,340	11,590	22,930	11,380	11,600	22,980	11,390	11,570	22,960	11,400	11,580	22,970
20-24	12,140	12,250	24,390	12,650	12,470	25,120	13,090	12,690	25,780	13,360	12,650	26,010
25-29	8,840	8,920	17,760	9,080	9,270	18,360	9,310	9,370	18,680	9,590	9,610	19,210
30-34	8,470	9,190	17,660	8,640	9,140	17,780	8,800	9,400	18,190	8,950	9,440	18,390
35-39	8,860	9,530	18,390	8,630	9,390	18,020	8,500	9,220	17,720	8,520	9,250	17,770
40-44	10,040	10,820	20,860	9,870	10,670	20,540	9,780	10,500	20,280	9,400	10,160	19,560
45-49	10,020	10,770	20,790	9,930	10,660	20,590	9,670	10,700	20,370	9,790	10,800	20,590
50-54	10,850	11,390	22,240	10,880	11,550	22,430	10,810	11,420	22,230	10,490	11,110	21,600
55-59	10,000	9,960	19,960	10,180	10,280	20,460	10,320	10,590	20,910	10,410	10,870	21,280
60-64	8,830	8,710	17,540	8,950	8,810	17,760	9,200	8,980	18,180	9,410	9,280	18,690
65-69	7,590	7,640	15,230	7,970	8,060	16,030	8,280	8,330	16,610	8,540	8,560	17,100
70-74	5,630	5,900	11,530	5,860	5,990	11,850	6,000	6,170	12,170	6,040	6,240	12,270
75-79	3,950	4,500	8,450	4,030	4,640	8,670	4,210	4,830	9,040	4,580	5,090	9,670
80-84	2,880	3,670	6,550	2,890	3,670	6,570	2,930	3,620	6,550	2,890	3,650	6,530
85-89	1,510	2,470	3,980	1,540	2,480	4,020	1,560	2,510	4,080	1,670	2,510	4,180
90+	570	1,360	1,930	650	1,420	2,070	710	1,480	2,190	730	1,570	2,300
All Ages	150,600	155,900	306,400	152,200	157,300	309,500	153,500	158,600	312,100	154,600	159,500	314,000
	2017			2018			2019			2020		
0	1,820	1,730	3,550	1,820	1,730	3,560	1,830	1,730	3,560	1,830	1,740	3,570
1-4	7,420	7,100	14,520	7,380	7,030	14,410	7,380	7,030	14,400	7,380	7,030	14,410
5-9	10,150	9,360	19,510	10,040	9,280	19,330	9,800	9,180	18,980	9,540	9,000	18,540
10-14	9,340	8,850	18,190	9,490	8,950	18,440	9,750	9,020	18,760	9,910	9,150	19,060
15-19	11,350	11,520	22,870	11,170	11,380	22,540	11,010	11,280	22,290	10,940	11,200	22,140
20-24	13,500	12,660	26,160	13,420	12,620	26,040	13,360	12,550	25,920	13,300	12,460	25,760
25-29	9,860	9,790	19,640	10,290	9,980	20,270	10,650	10,050	20,700	10,970	10,140	21,110
30-34	9,050	9,390	18,440	9,240	9,480	18,720	9,360	9,740	19,100	9,510	9,760	19,270
35-39	8,460	9,340	17,800	8,420	9,310	17,720	8,530	9,200	17,730	8,650	9,400	18,050
40-44	9,100	9,710	18,810	8,820	9,540	18,370	8,530	9,350	17,880	8,360	9,140	17,500
45-49	9,820	10,800	20,620	9,890	10,690	20,580	9,680	10,500	20,170	9,560	10,290	19,850
50-54	10,130	10,880	21,010	9,780	10,600	20,380	9,650	10,440	20,090	9,360	10,460	19,820
55-59	10,530	11,140	21,670	10,570	11,250	21,820	10,570	11,380	21,940	10,480	11,230	21,710
60-64	9,550	9,430	18,980	9,740	9,770	19,510	9,880	10,060	19,940	10,000	10,350	20,350
65-69	8,530	8,570	17,110	8,480	8,500	16,980	8,570	8,570	17,140	8,800	8,720	17,520
70-74	6,440	6,650	13,090	7,000	7,230	14,230	7,370	7,630	15,000	7,660	7,890	15,550
75-79	4,810	5,330	10,130	4,830	5,360	10,190	5,020	5,430	10,450	5,130	5,580	10,710
80-84	2,920	3,640	6,560	3,020	3,760	6,780	3,070	3,870	6,940	3,230	4,050	7,280
85-89	1,740	2,560	4,290	1,760	2,540	4,300	1,780	2,560	4,340	1,830	2,520	4,350
90+	740	1,600	2,350	770	1,620	2,390	830	1,650	2,470	840	1,700	2,540
All Ages	155,300	160,000	315,300	155,900	160,600	316,600	156,600	161,200	317,800	157,300	161,800	319,100

These projections were derived in October 2014.

Source: Statistics New Zealand DHB Population Projections



Appendix 2: Technical notes

This appendix provides a list of data sources and technical information on the analyses of deaths, cancer registrations, and hospitalisations, Census data and data from Te Kupenga 2013.

Data sources

Table 71: Data sources

Source (agency or collection)	Data	Period
Action on Smoking and Health (ASH)	ASH Year 10 Snapshot Survey	2013
Health Quality and Safety Commission	New Zealand Atlas of Healthcare Variation	2011, 2013
Ministry of Education	ENROL (Education Counts)	2013
Ministry of Health	Birth registrations	2009–2013
	B4 School Check Information System	2013
	Cancer Registry	2008–2012
	Community Oral Health Service	2013
	Death registrations	2007–2012*
	National Immunisation Register	2008–2014
	National Maternity Collection	2013
	National Screening Unit	2010–2014
	PHO Enrolment Collection	2012–2013
	Well Child/Tamariki Ora Quality Indicators	2014
	National Minimum Data Set (NMDS), hospital discharges	2011–2013
Plunket	Breastfeeding rates	2013
Statistics New Zealand	Census of Population and Dwellings	2006
	Census of Population and Dwellings	2013
	NZ Population projections for the Ministry of Health (2013 Census base)	2014
	Te Kupenga 2013, the Māori Social Survey	2013
	Subnational Period Life Tables	2012–2014

Note: *no causes for 2012

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Data from the Census of Population and Dwellings

Indicators using data from the Census of Population and Dwellings include the Census usually resident population.

Prioritised ethnicity was used to identify Māori individuals (any person who identified Māori as any of their ethnic groups) and non-Māori included people who had at least one valid ethnic response, none of which was Māori.

Households were classified as Māori if any usual resident was Māori. Households were counted if they were in private occupied dwellings.

People living in households included the population resident in permanent private households.

Standard Census definitions and forms can be found [here](#).

Data on proportions of people were age-standardised to the 2001 Māori population.

Data from Te Kupenga 2013

Te Kupenga 2013 was a post-census survey of individuals who identified with Māori ethnicity or Māori descent in the 2013 Census. The target population was the usually resident Māori population of New Zealand, living in

occupied private dwellings on the 2013 Census night and aged 15 years or older. The data was collected during June to August 2013.

All estimates of numbers, percentages, and confidence intervals for data presented from Te Kupenga were calculated by Statistics New Zealand. The estimates of numbers of people in the DHB were rounded to the nearest five hundred in order to provide a more appropriate level of precision to the sample survey. All percentages were calculated from unrounded data.

Further details on the survey measures are available in the Te Kupenga 2013 [Data Dictionary](#).

Deaths, hospitalisations and cancer registrations

Ethnicity

Most indicators are presented for Māori and non-Māori. In each data set a person was classified as Māori if any one of their recorded ethnicity was Māori. No adjusters for undercount of hospitalisations, cancer registrations, or deaths were applied.

Residence

The DHB of residence was determined from the domicile code attached to the public hospital discharge record, the death registration, or the cancer registration.

Hospital transfers

For ambulatory sensitive hospitalisations and analyses of hospitalisations by cause (such as asthma, ischaemic heart disease) transfers to other services or other hospitals were not counted as an admission if the admission had an ambulatory sensitive diagnosis or had the same principal diagnosis group respectively, was on the same day or the following day as the initial admission and either had its admission source code as 'transfer from another hospital facility' or initial admission had its event end type code indicating a discharge to an acute facility, another healthcare facility, or other service within same facility. For avoidable hospitalisations, all admissions, the tables of hospitalisations for mental disorders, causes of hospital admissions for injuries and causes of admissions, admissions were not counted if the admission had its admission source code as 'transfer from another hospital facility'.

Suppression of causes of death or hospitalisation

In tables presenting data on causes of death, hospitalisation, or cancer registrations by site, data is not presented where there were fewer than five Māori events during the period represented by the data.

Ninety-five percent confidence intervals

The rates and ratios presented are estimates of the 'true' rate or ratio, calculated using data available. The 95% confidence interval (CI) indicates the interval that has a 95% probability of enclosing the 'true' value.

The CI is influenced by the population size of the group. When the population is small, the CI becomes wider and there is less certainty about the rate.

When the CIs of two groups do not overlap, the difference in rates between the groups is statistically significant. Sometimes, even when there are overlapping CIs, the difference between the groups may be statistically significant. In this report, if CIs overlap but a difference has been reported, a test of statistical significance (the log-transformation method) was performed (Clayton and Hills 1993).

Age standardisation

Age-standardised rates adjust for differences in age distribution of the populations being compared. They are artificial rates created to allow comparisons to be made with differing groups. Age-standardised rates are calculated by applying age-specific rates to a standard population; they should only be compared with other adjusted rates that were calculated using the same 'standard' population. The standard population used in this report was the 2001 Census Māori population (shown below).

Rates for the total Māori and non-Māori populations were age-sex-standardised. This means the rates were standardised to a population with equal numbers of males and females and the age distribution of the total Māori population from the 2001 Census (Robson, Purdie et al 2007).

Standardising to the Māori population provides age-standardised rates that closely approximate the crude Māori rates (the actual rates among the Māori population) while also allowing comparisons with the non-Māori population. Care should be taken when using data from another source that are standardised using a different standard population, as they are not comparable.

Table 72: 2001 Census total Māori population

Age group (years)	2001 Census total Māori population	Weighting
0–4	67,404	12.81
5–9	66,186	12.58
10–14	62,838	11.94
15–19	49,587	9.42
20–24	42,153	8.01
25–29	40,218	7.64
30–34	39,231	7.46
35–39	38,412	7.30
40–44	32,832	6.24
45–49	25,101	4.77
50–54	19,335	3.67
55–59	13,740	2.61
60–64	11,424	2.17
65–69	8,043	1.53
70–74	5,046	0.96
75–79	2,736	0.52
80–84	1,251	0.24
85 and over	699	0.13

ICD-10 codes

The International Classification of Diseases (ICD-10) codes used for the calculation of avoidable and ambulatory sensitive hospitalisations and avoidable and amenable mortality are presented in Tables 45 to 49 below. For the Excel tables of deaths by cause, hospitalisations by cause, mental disorders, hospitalisations for injuries by external cause, and cancer registrations, the codes are listed in Appendix 2 of [Hauora: Māori Standards of Health IV](#). For other tables, the ICD codes are listed in the accompanying Excel tables.

Table 73: Potentially avoidable hospitalisation ICD-10 codes for children aged 1 month to 14 years

Condition	ICD-10-AM code
Acute bronchiolitis	J21
Acute rheumatic fever	I00,I02
Acute upper respiratory tract infection excluding croup	J00,J03, J06
Asthma	J45, J46
Bacterial meningitis*	G00, G01

Bacterial/Unspecified pneumonia	J13,J16, J18
Bronchiectasis	J47
Constipation	K59.0
Chronic rheumatic heart disease	I05,I09
Croup, acute laryngitis, tracheitis	J04, J05.0
Dental (dental caries, pulp, periodontal)	K02, K04, K05
Dermatitis/eczema	L20,L30
Febrile convulsions	R560
Gastroenteritis	A00,A09, K529, R11,
Gastro oesophageal reflux	K21
Meningococcal disease	A39
Nutritional deficiency	D50,D53, E40,E64,
Otitis media	H65,H67
Osteomyelitis	M86
Skin infection	H00.0, H01.0, J34.0, L00,L05, L08, L98.0
Tuberculosis	A15,A19
Urinary tract infection ≥ 5 years	N10, N12, N13.6, N30.0, N30.9, N39.0,
Vaccine preventable diseases: tetanus neonatorum congenital rubella	P350, A33, A34
tetanus, diphtheria, pertussis, polio, hepatitis B	A35, A36, A37, A80, B16, B18.0, B18.1
measles, rubella, mumps	B05, B06, B26, M01.4
Viral pneumonia	J12, J10.0, J11.0
Viral /other / unspecified meningitis	A87, G02, G03
Viral infection of unspecified site	B34

Source: Anderson et al (2012)

Notes:

Includes all acute admissions and arranged admissions that were admitted within 7 days.

Waiting list admissions were excluded, apart from dental admissions which were all included.

Admissions were included for patients aged 29 days through to 14 years, at admission.

Table 74: Ambulatory care sensitive hospitalisation ICD-10 codes for children aged 1 month to 14 years

Condition	ICD-10-AM code
Acute rheumatic fever	I00,I02
Acute upper respiratory tract infections excluding croup	J00,J03, J06
Asthma	J45, J46
Bacterial/Unspecified pneumonia	J13,J16, J18
Bronchiectasis	J47
Constipation	K59.0
Chronic rheumatic heart disease	I05,I09
Dental (dental caries, pulp, periodontal)	K02, K04, K05
Dermatitis/eczema	L20,L30
Gastroenteritis	A02,A09, K529, R11
Gastro oesophageal reflux	K21
Nutritional deficiency	D50,D53, E40,E64
Otitis media	H65,H67
Skin infection	L00,L04, L08, L98.0, J34.0, H01.0, H00.0
Urinary tract infection ≥ 5 years	N10, N12, N136, N30.0, N30.9, N39.0
Vaccine preventable diseases: tetanus neonatorum congenital rubella	P350, A33, A34
> 6 months: tetanus, diphtheria, pertussis, polio, hepatitis B	A35, A36, A37, A80, B16, B18.0, B18.1
> 16 months: measles, rubella, mumps	B05, B06, B26, M01.4

Source: Anderson et al (2012)

Notes:

Includes all acute admissions and arranged admissions that were admitted within 7 days.

Waiting list admissions were excluded, apart from dental admissions which were all included.

Admissions were included for patients aged 29 days through to 14 years, at admission.

Table 75: Ambulatory care sensitive hospitalisation ICD-10 codes for people aged 1 month to 74 years

Condition	ICD-10 code
Gastroenteritis/dehydration	A02,A09, K52.9, R11
Vaccine preventable disease MMR	B05*, B06*, B26*, M01.4*, P35.0
Vaccine preventable disease Other ‡	A33,A37, A40.3, A80, B16, B18
Sexually transmitted infections §	A50,A59, A60, A63, A64, I98.0, M02.3, M03.1, M73.0, M73.1, N29.0, N34.1
Cervical cancer §	C53
Nutrition deficiency and anaemia	D50,D53, E40,E46, E50,E64, M83.3§
Diabetes §	E10,E14, E162
Epilepsy §	G40, G41, O15, R56.0, R56.8
Upper respiratory and ENT	H65, H66, H67, J00,J04, J06
Rheumatic fever/heart disease	I00, I01, I02, I05,I09
Hypertensive disease §	I10,I15, I67.4
Angina and chest pain † §	I20, R07.2,R07.4
Myocardial infarction † §	I21,I23, I24.1
Other ischaemic heart disease † §	I24.0, I24.8, I24.9, I25
Congestive heart failure §	I50, J81
Stroke † §	I61, I63,I66
Pneumonia	J13,J16, J18
Asthma	J45, J46
Bronchiectasis	J47
Dental conditions	K02, K04, K05
Gastro-oesophageal reflux disease	K21
Peptic ulcer §	K25,K28
Constipation	K590
Cellulitis	H00.0, H01.0, J34.0, L01,L04, L08, L98.0
Dermatitis and eczema	L20,L30
Kidney/urinary infection ¶	N10, N12, N13.6, N30.9, N39.0

Source: Ministry of Health

Notes:

Acute and arranged (occurring in less than 7 days of decision) admissions, except dental where elective admission are also included.

Excluding discharges from an emergency department with one day of stay or shorter.

* Aged 15 months to 14 years.

† Each admission counts as a half.

‡ Aged six months to 14 years.

§ Aged 15 years and over.

|| Aged more than 15 years.

¶ Aged 5 years and over.

Table 76: Avoidable mortality ICD-10 codes

Condition	ICD-10-AM
Tuberculosis	A15,A19, B90
Selected invasive bacterial and protozoal infection	A38,A41, A46, A48.1, B50,B54, G00, G03, J02.0, J13,J15, J18, L03
Hepatitis	B15,B19
HIV/AIDS	B20,B24
Viral pneumonia and influenza	J10, J12, J17.1, J21
Lip, oral cavity and pharynx cancers	C00,C14
Oesophageal cancer	C15
Stomach cancer	C16
Colorectal cancer	C18,C21
Liver cancer	C22
Lung cancer	C33,C34
Bone and cartilage cancer	C40,C41*
Melanoma of skin	C43
Non-melanotic skin cancer	C44
Breast cancer (female only)	C50
Uterine cancer	C54,C55
Cervical cancer	C53
Prostate	C61*

Testis	C62*
Bladder cancer	C67
Thyroid cancer	C73
Hodgkin's disease	C81
Lymphoid leukaemia, acute/chronic	C91.0, C91.1
Benign tumours	D10,D36
Thyroid disorders	E00,E07
Diabetes	E10,E14**
Alcohol-related diseases	F10, I42.6, K29.2, K70
Illicit drug use disorders	F11,F16, F18,F19
Epilepsy	G40,G41
Rheumatic and other valvular heart diseases	I01,I09, I33,I37*
Hypertensive heart disease	I10*, I11
Ischaemic heart disease	I20,I25
Heart failure	I50*
Cerebrovascular diseases	I60,I69
Aortic aneurysm	I71
Nephritis and nephrosis	I12,I13, N00,N09, N17,N19
Obstructive uropathy and prostatic hyperplasia	N13, N20,N21, N35, N40, N99.1
DVT with pulmonary embolism	I26, I80.2
COPD	J40,J44***
Asthma	J45,J46***
Peptic ulcer disease	K25,K28
Acute abdomen, appendicitis, intestinal obstruction, cholecystitis/lithiasis, pancreatitis, hernia	K35,K38, K40,K46, K80,K83, K85,K86, K91.5
Chronic liver disease (excluding alcohol related disease)	K73, K74
Complications of pregnancy	O00,O96*, O98,O99*
Birth defects	H31.1, P00, P04, Q00,Q99
Complications of perinatal period	P01,P02*, P03, P05,P95
Road traffic injuries	V01,V04, V06, V09,V80, V82-V86*, V87, V88.0-V88.5*, V88.7-V88.9*, V89, V98*, V99
Accidental poisonings	X40,X49
Falls	W00,W19
Fires	X00,X09
Drownings	W65,W74
Suicide and self-inflicted injuries	X60,X84, Y87.0
Violence	X85,Y09, Y87.1
Event of undetermined intent	Y10,Y34, Y87.2****
Treatment injury	Y60,Y82*

Notes: *Added from amenable mortality

**E09 should be added if using ICD-10 AM version 3 or higher.

***All ages added from amenable mortality

****Y87.2 added by authors for completeness

Table 77: Amenable mortality ICD-10 codes

Group	Condition	ICD-10
Infections	Pulmonary tuberculosis	A15–A16
	Meningococcal disease	A39
	Pneumococcal disease	A40.3, G00.1, J13
	HIV/AIDS	B20,B24
Cancers	Stomach	C16
	Rectum	C19,C21
	Bone and cartilage	C40,C41
	Melanoma	C43
	Female breast	C50
	Cervix	C53
	Testis	C62
	Prostate	C61
	Thyroid	C73
	Hodgkin’s	C81
	Acute lymphoblastic leukaemia (age 0,44 years)	C91.0
Maternal and infant	Complications of pregnancy	O00,O96, O98,O99
	Complications of the perinatal period	P01,P03, P05,P94
	Cardiac septal defect	Q21
Chronic disorders	Diabetes	E10,E14*
	Valvular heart disease	I01, I05,I09, I33,I37
	Hypertensive diseases	I10,I13
	Coronary disease	I20,I25
	Heart failure	I50
	Cerebrovascular diseases	I60,I69
	Renal failure	N17,N19
	Pulmonary embolism	I26
	COPD	J40-J44
	Asthma	J45,J46
	Peptic ulcer disease	K25,K27
Cholelithiasis	K80	
Injuries	Suicide	X60,X84
	Land transport accidents (excluding trains)	V01,V04,V06–V14, V16–V24, V26–V34, V36–V44, V46–V54, V56–V64, V66–V74, V76–V79, V80.0–V80.5, V80.7–V80.9, V82–V86, V87.0–V87.5, V87.7–V87.9, V88.0–V88.5, V88.7–V88.9, V89, V98–V99
	Falls (accidental fall on same level)	W00–W08, W18
	Fire, smoke or flames	X00,X09
	Treatment injury	Y60,Y82

Source: Ministry of Health 2010

Note: * E09 should be added if using ICD-10 AM version 3 or higher.



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