



Canterbury
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

– Canterbury at a glance

Canterbury population

- In 2013, 43,800 Māori lived in the Canterbury District Health Board region, 9% of the District's total population.
- The Canterbury Māori population is youthful, but showing signs of ageing. In 2013, Māori comprised 15% of the DHB's children aged 0–14 years and 12% of those aged 15–24 years. The population aged 65 years and over will increase by almost 75% between 2013 and 2020.

Whānau ora – Healthy families

- Te Kupenga data is presented for four DHBs combined: Canterbury, Nelson Marlborough, West Coast, and South Canterbury. In 2013, most Māori adults (84%) from these four DHBs reported that their whānau was doing well, but 5% felt their whānau was doing badly. A small proportion (8%) found it hard to access whānau support in times of need, but most found it easy (77%).
- Being involved in Māori culture was important to the majority of Māori adults (59%), as was spirituality (59%).
- Practically all (99%) Māori from these four DHBs had been to a marae at some time. Most (79%) had been to their ancestral marae, with over half (54%) stating they would like to go more often.
- One in twenty Māori from these four DHBs had taken part in traditional healing or massage in the last 12 months.
- Almost 15% of Canterbury Māori could have a conversation about a lot of everyday things in te reo Māori in 2013.

Wai ora – Healthy environments

Education

- Almost all Māori children (97%) starting school in 2013 had participated in early childhood education.
- In 2013, 52% of Māori adults aged 18 years and over had at least a Level 2 Certificate, a significant increase since 2006 (44%). Nevertheless the proportion was only three-quarters that of non-Māori in 2013.

Work

- In 2013, 7% of Māori adults aged 15 years and over were unemployed, 70% higher than the non-Māori rate.
- Most Māori adults (88%) do voluntary work.
- In 2013, Māori were around one and a half times as likely as non-Māori to look after someone who was disabled or ill, within or outside of the home.

Income and standard of living

- In 2013, 27% of children and 25% of 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 16% of children and 18% of adults living in other households.

- Around 9% of Māori adults in Canterbury, Nelson Marlborough, West Coast and South Canterbury DHBs combined reported putting up with feeling the cold a lot to keep costs down during the previous 12 months, 5% had gone without fresh fruit and vegetables, and 9% had often postponed or put off visits to the doctor.
- People in Māori households were less likely to have access to telecommunications than those living in other households: 19% had no landline, 19% no internet, 10% no mobile phone, and almost 2% had no access to any telecommunications at all.

Housing

- In Canterbury, Nelson Marlborough, West Coast and South Canterbury DHBs combined, the most common housing problems reported to be a big problem by Māori adults in 2013 were finding it hard to keep warm (15%), needing repairs (14%), and damp (9%).
- Just over half of children in Māori households in Canterbury were living in rented accommodation, four-fifths higher than the proportion of children in other households.
- Canterbury residents living in Māori households were more than twice as likely as others to be in crowded homes (i.e. requiring at least one additional bedroom) (15% compared to 7%).

Area deprivation

- Using the NZDep2013 index of small area deprivation, 40% of Canterbury Māori lived in the four most deprived decile areas compared to 25% of non-Māori.

Mauri ora – Healthy individuals

Pepi, tamariki – Infants and children

- On average 1,093 Māori infants were born per year during 2009–2013, 17% of all live births in the DHB. Around 7% of Māori and 6% of non-Māori babies had low birth weight.
- In 2013, 63% of Māori babies in Canterbury were fully breastfed at 6 weeks.
- Almost 80% of Māori infants were enrolled with a Primary Health Organisation by three months of age.
- In 2014, 90% of Māori children were fully immunised at 8 months of age, 93% at 24 months.
- In 2013, 55% of Canterbury Māori children aged 5 years and 36% of non-Māori children had caries. At Year 8 of school, 57% of Māori children and 44% of non-Māori children had caries. Māori children under 15 years were equally as likely as non-Māori to be hospitalised for tooth and gum disease.
- During 2011–2013, on average there were 96 hospital admissions per year for grommet insertions among Māori children (at a rate similar to that of non-Māori).
- In Canterbury, 16 Māori females aged less than 15 years were hospitalised for serious skin infections per year at a rate 40% higher than that of non-Māori females, whereas the rate for Māori males was 34% lower than non-Māori.
- Māori children under 15 years were 4 times as likely as non-Māori children to be hospitalised for acute rheumatic fever, with one child per year admitted at least once.
- Over 3,370 hospitalisations per year of Māori children were potentially avoidable through population-based health promotion and intersectoral actions, at a rate 12% lower than that of non-Māori.
- Around 370 hospitalisations per year of Māori children were potentially avoidable through preventive or treatment intervention in primary care (ambulatory care sensitive hospitalisations, or ASH), with a rate 14% lower than for non-Māori children.

Rangatahi – Young adults

- There has been a significant increase in the proportion of Canterbury 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, between 30% and 43% of Māori girls aged 14 to 17 years had received all three doses of the human papilloma virus (HPV) vaccine. Coverage was lower for Māori than for non-Māori.
- Rates of hospitalisation for injury from self-harm were 25% lower for Māori than for non-Māori among those aged 15–24 years during 2011–2013 but 70% higher for Māori males than for non-Māori males at ages 25–44 years.

Pakeke – Adults

- Over half of Māori adults in Canterbury, Nelson Marlborough, West Coast and South Canterbury DHBs combined reported having excellent or very good health in 2013, and over a quarter reported good health. One in six (16%) reported having fair or poor health.
- Smoking rates in Canterbury are decreasing, but remain twice as high for Māori as for non-Māori.

Circulatory system diseases

- Canterbury Māori adults aged 25 years and over were 27% more likely than non-Māori to be hospitalised for circulatory system diseases (including heart disease and stroke) in 2011–2013.
- Canterbury Māori were 18% more likely than non-Māori to be admitted with acute coronary syndrome and just as likely to have either angiography, or a coronary artery bypass and graft.
- Heart failure admission rates were 2.8 times as high for Māori as for non-Māori.
- Stroke admission rates and chronic rheumatic heart disease admissions were similar for Māori and non-Māori.
- Māori under 75 years were two and a half times as likely as non-Māori to die from circulatory system diseases in 2007–2011.

Diabetes

- In 2013, 3% of Māori and 4% of non-Māori were estimated to have diabetes. Fifty-six percent of Māori aged 25 years and over who had diabetes were regularly receiving metformin or insulin, 72% were having their blood sugar monitored regularly, and 41% were being screened regularly for renal disease.
- In 2011–2013 Māori with diabetes were equally as likely as non-Māori to have a lower limb amputated.

Cancer

- Compared to non-Māori, cancer incidence was 45% higher for Māori females and similar for Māori males, while cancer mortality was 32% higher for Māori females and similar for Māori males.
- Breast, lung, cervical, colorectal and ovarian cancers were the most commonly registered among Canterbury Māori women. The rate of lung cancer was 3 times as high for Māori as for non-Māori, cervical cancer 4 times as high, breast cancer 49% higher, colorectal cancer was similar, and ovarian cancer was twice as high.
- At the end of 2014, breast screening coverage of Māori women aged 45–69 years was 76% compared to 81% of non-Māori women.
- Cervical screening coverage of Māori women aged 25–69 years was 54% over 3 years and 66% over five years (compared to 77% and 90% of non-Māori respectively).
- Prostate, lung, colorectal, liver, and kidney were the most common cancers among Canterbury Māori men. Lung cancer registration rates were 87% higher than for non-Māori, and liver cancer registrations were 4.7 times as high. Prostate cancer was less frequent among Māori men than among non-Māori.
- Lung cancer and breast cancer were the most common causes of death from cancer among Māori women. Lung cancer and colorectal cancer were the most common causes of cancer death for Māori men.

Respiratory disease

- Māori aged 45 years and over were 3 times as likely as non-Māori to be admitted to hospital for chronic obstructive pulmonary disease (COPD).
- Asthma hospitalisation rates were higher for Māori than non-Māori in each age group.
- Māori under 75 years had 2.7 times the non-Māori rate of death from respiratory disease in 2007–2011.

Mental disorders

- Māori were nearly 40% more likely than non-Māori to be admitted to hospital for a mental disorder during 2011–2013. Mood disorders were the most common disorders, followed by schizophrenia and substance use disorders.

Gout

- In 2011 the prevalence of gout among Canterbury Māori was estimated to be 4%, higher than the prevalence in non-Māori (2%).
- Forty percent of Māori with gout regularly received allopurinol, a preventive therapy to lower urate levels. Of those who received allopurinol, less than half had a lab test for serum urate levels in the following six months.

- In 2011–2013 the rate of hospitalisations for gout was 4.3 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 slightly lower for Māori than for non-Māori during 2011–2013.
- More than 1,600 Māori hospital admissions per year were potentially avoidable, with the rate 6% higher for Māori than for non-Māori. The ASH rate was 12% higher.

Mortality

- During 2012–2014 life expectancy at birth was 80.9 years for Māori females in the Canterbury Region (2.6 years lower than for non-Māori females) and 77.2 years for Māori males (2.8 years lower than for non-Māori males).
- The all-cause mortality rate for Māori in Canterbury DHB during 2008–2012 was 50% higher than the non-Māori rate.
- Leading causes of death for Māori females during 2007–2011 were ischaemic heart disease (IHD), lung cancer, COPD, stroke, and accidents. Leading causes of death for Māori males were IHD, accidents, lung cancer, suicide, and COPD.
- Potentially avoidable mortality and mortality from conditions amenable to health care were around 80% higher for Māori than for non-Māori in Canterbury.

Injuries

- The rate of hospitalisation due to injury was 6% lower for Canterbury Māori than non-Māori during 2011–2013.
- The most common causes of injury resulting in hospitalisation were falls; exposure to mechanical forces; complications of medical and surgical care; assault; transport accidents; and intentional self harm.
- The rate of hospitalisation due to assault was 67% higher for Māori males than for non-Māori males and 2.4 times as high for Māori females as for non-Māori females.
- Injury mortality was 40% higher for Māori than for non-Māori in Canterbury during 2007–2011.

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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 **Te Poari Hauora ō Waitaha, Canterbury 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 Canterbury DHB. Accompanying Excel tables also include data for the total Canterbury 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 7% (43,800) of the country’s total Māori population lived in the Canterbury District Health Board (CDHB) area. The total population of the CDHB (504,300) made up 11% of the national population. In 2015, the Māori population is estimated to be 45,700 and the total population 525,800.²

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

Age group (years)	Māori			Non-Māori		Total DHB Number
	Number	Age distribution	% of DHB	Number	Age distribution	
0–14	14,530	33%	15	80,420	18%	94,950
15–24	8,640	20%	12	62,560	14%	71,200
25–44	11,190	26%	9	119,380	26%	130,570
45–64	7,560	17%	6	126,000	27%	133,560
65+	1,890	4%	3	72,090	16%	73,980
Total	43,800	100%	9	460,500	100%	504,300

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

Māori residents comprised 9% of the CDHB population in 2013. The Māori population is relatively young, with a median age in 2013 of 23.5 years, compared with 38.9 years for the total CDHB population. Māori comprised 15% of the DHB’s children aged 0–14 years and 12% of those aged 15–24 years.

Table 2: Population projections, Canterbury 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	43,800	9	6	33	63	4	23.5	504,300	38.9	11	692,300	4,442,100
2018	47,900	9	7	32	62	6	24.8	544,800	39.0	12	734,500	4,726,200
2023	52,000	9	7	31	61	8	26.1	568,500	39.8	12	773,500	4,935,200
2028	56,000	10	7	29	61	10	27.2	591,300	40.9	12	811,700	5,139,700
2033	60,100	10	7	28	60	12	28.0	611,800	42.2	12	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 4% but is projected to increase to 12% in 2033. Between 2013 and 2020 the number of Māori aged 65 and over will increase by almost 75% from 1,890 to 3,310 (see Appendix 1). In 2013, there were 540 Māori aged 75 years and over in CDHB, with 171 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. Te Kupenga was a sample survey of Māori adults aged 15 years and above with insufficient numbers to report results for Canterbury alone. Therefore we present data for four South Island DHBs combined: Canterbury, Nelson Marlborough, West Coast, and South Canterbury.

Whānau well-being

Table 3: Whānau well-being reported by Māori aged 15 years and over, Canterbury, Nelson Marlborough, West Coast, South Canterbury DHBs combined, 2013

How the whānau is doing	Canterbury and other South Island DHBs			New Zealand		
	Estimated number	%	(95% CI)	%	(95% CI)	
Well / Extremely well	45,000	84.3	(80.6, 88.0)	83.4	(82.5, 84.4)	
Neither well nor badly	5,500*	10.7*	(7.1, 14.3)	10.3	(9.4, 11.2)	
Badly / Extremely badly	2,500*	5.0*	(3.2, 6.7)	6.3	(5.6, 7.0)	

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

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

Over 80% of Māori adults from Canterbury and neighbouring DHBs reported that their whānau was doing well or extremely well in 2013. However 5% felt their whānau was doing badly or extremely badly. These were similar to the national findings of Te Kupenga.

Table 4: Whānau composition reported by Māori aged 15 years and over, Canterbury, Nelson Marlborough, West Coast, South Canterbury DHBs combined, 2013

Whānau description	Canterbury and other South Island DHBs			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Size of whānau					
10 or less	29,000	54.0	(48.9, 59.1)	53.7	(52.1, 55.3)
11 to 20	13,500	25.2	(20.7, 29.7)	22.6	(21.3, 24.0)
More than 20	11,000	20.8	(16.7, 24.9)	23.6	(22.4, 24.8)
Groups included in whānau					
Parents, partner, children, brothers & sisters	52,000	95.9	(94.0, 97.7)	94.6	(94.0, 95.2)
Aunts & uncles, cousins, nephews & nieces, other in-laws	19,000	35.5	(30.7, 40.3)	41.3	(39.8, 42.8)
Grandparents, grandchildren	23,500	43.4	(38.4, 48.3)	41.9	(40.5, 43.4)
Friends, others	9,500	17.8	(14.3, 21.3)	12.4	(11.5, 13.3)

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

Table 4 shows the size and composition of whānau, with a fifth reporting whānau sizes of more than 20 people. Just under 20% included friends in their description of whānau.

Whānau support

Table 5: Access to whānau support, Māori aged 15 years and over, Canterbury, Nelson Marlborough, West Coast, South Canterbury DHBs combined, 2013

How easy is it to get help	Canterbury and other South Island DHBs			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Support in times of need					
Easy, very easy	42,000	77.3	(73.4, 81.2)	81.2	(80.1, 82.4)
Sometimes easy, sometimes hard	8,000	14.4	(11.1, 17.7)	12.7	(11.7, 13.6)
Hard / very hard	4,500*	8.3*	(5.6, 11.0)	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	32,500	60.5	(55.9, 65.1)	64.1	(62.7, 65.6)
Sometimes easy, sometimes hard	8,500	15.7	(12.1, 19.3)	16.9	(15.9, 18.0)
Hard / very hard	12,000	22.6	(18.6, 26.6)	14.7	(13.5, 15.9)
Don't need help	500**	1.2**	(0.2, 2.1)	4.2	(3.7, 4.7)

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

Notes: *Sampling error is 30% or more but less than 50%. ** Sampling error is 50 percent or more, but less than 100 percent.

In 2013, the majority of Māori adults in these four South Island DHBs (77%) reported having easy access to whānau support in times of need. However, an estimated 4,500 (8%) had difficulty getting help. A smaller proportion found it easy to get help with Māori cultural practices (61%), with 23% finding it hard or very hard. Few (1%) reported not needing help.

Importance of participation in Māori culture

Table 6: Importance of Māori culture and spirituality, Māori aged 15 years and over, Canterbury, Nelson Marlborough, West Coast, South Canterbury DHBs combined, 2013

	Canterbury and other South Island DHBs			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Importance of being involved in Māori culture					
Very / quite	18,000	33.6	(29.1, 38.1)	46.3	(44.9, 47.6)
Somewhat	13,500	25.2	(20.5, 29.9)	24.2	(22.9, 25.6)
A little / not at all	22,000	41.2	(36.1, 46.4)	29.5	(28.3, 30.7)
Importance of spirituality					
Very / quite	22,500	42.4	(37.0, 47.9)	48.7	(47.4, 49.9)
Somewhat	8,500	16.2	(12.5, 20.0)	17.0	(16.0, 18.0)
A little / not at all	22,000	41.3	(35.9, 46.8)	34.3	(33.1, 35.5)

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

Being involved in Māori culture was important (very, quite or somewhat) to a majority (59%) of Māori adults. Spirituality was also important to most Māori (59%) in the four DHBs.

Te Reo Māori

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

Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage
Number	%	(95% CI)	Number	%	(95% CI)		
5,511	14.7	(14.3, 15.1)	2,262	0.6	(0.6, 0.6)	25.19 (23.88, 26.58)	14.1

Source: 2013 Censuses, 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, 15% of Māori adults in Canterbury and nearly 1% of non-Māori adults 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, Canterbury, Nelson Marlborough, West Coast, South Canterbury DHBs, 2013

Language spoken at home	Canterbury and other South Island DHBs			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Māori is main language	S	S		2.6	(2.2, 3.0)
Māori is used regularly	6,000*	13.2	(9.3, 17.2)	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.

Just over one in eight Māori adults across the four DHBs (13%) reported that Māori language was used regularly in the home in 2013.

Access to marae

Table 9: Access to marae, Māori aged 15 years and over, Canterbury, Nelson Marlborough, West Coast, South Canterbury DHBs combined, 2013

Been to marae	Canterbury and other South Island DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
At some time	48,500	89.4	(86.2, 92.6)	96.0	(95.5, 96.6)
In previous 12 months ⁽¹⁾	17,500	35.8	(30.9, 40.7)	58.2	(56.6, 59.7)
Ancestral marae at some time ⁽²⁾	23,000	43.9	(38.2, 49.6)	62.3	(60.9, 63.7)
Ancestral marae in previous 12 months ⁽³⁾	6,500	12.1	(8.7, 15.5)	33.6	(32.3, 34.9)
Like to go to ancestral marae more often ⁽²⁾	16,500	55.7	(48.9, 62.5)	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.

In 2013, most Māori in Canterbury and neighbouring DHBs (89%) had been to a marae, with just over a third (36%) having been in the last 12 months. Forty-four percent had been to at least one of their ancestral marae, 12% within the previous 12 months, but the majority (56%) reported that 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, Canterbury, Nelson Marlborough, West Coast, South Canterbury DHBs combined, 2013

Canterbury and other South Island DHBs			New Zealand	
Estimated number	%	(95% CI)	%	(95% CI)
3,000*	5.4*	(3.1, 7.7)	10.9	(10.0, 11.7)

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

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

An estimated 3,000 Māori adults (5%) in Canterbury and neighbouring DHBs took part in traditional healing or massage in 2013, a smaller proportion than the national average (11%).



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, Canterbury DHB, 2006 and 2013

Year	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
2006	8,613	44.4	(43.7, 45.0)	178,251	61.5	(61.4, 61.7)	0.72 (0.71, 0.73)	-17.2
2013	11,631	51.8	(51.2, 52.5)	196,059	66.4	(66.3, 66.6)	0.78 (0.77, 0.79)	-14.6

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.

The proportion of Māori adults aged 18 years and over with at least a Level 2 Certificate increased from 44% to 52% between 2006 and 2013. The gap between Māori and non-Māori in Canterbury closed by about three percentage points.

Work

Table 12: Labour force status, 15 years and over, Canterbury 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	11,175	52.0	(51.4, 52.6)	170,451	54.4	(54.3, 54.6)	0.96 (0.94, 0.97)	-2.4
Employed part-time	3,351	15.4	(14.9, 15.8)	55,512	17.9	(17.7, 18.0)	0.86 (0.83, 0.89)	-2.5
Unemployed	1,239	5.6	(5.3, 5.9)	8,769	3.5	(3.4, 3.6)	1.61 (1.52, 1.70)	2.1
Not in the labour force	5,832	27.0	(26.5, 27.6)	107,961	24.2	(24.0, 24.3)	1.12 (1.09, 1.14)	2.8
2013								
Employed full-time	12,942	51.7	(51.2, 52.3)	177,132	55.1	(54.9, 55.2)	0.94 (0.93, 0.95)	-3.4
Employed part-time	3,558	14.1	(13.7, 14.6)	54,204	16.9	(16.8, 17.0)	0.84 (0.81, 0.86)	-2.8
Unemployed	1,650	6.6	(6.3, 7.0)	10,005	4.0	(3.9, 4.1)	1.66 (1.58, 1.75)	2.6
Not in the labour force	7,101	27.4	(26.9, 28.0)	107,877	24.0	(23.9, 24.2)	1.14 (1.12, 1.17)	3.4

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.

Employed part-time includes people working 1 hour per week or more. Unemployed people who 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 no change in the proportion of Māori adults employed full-time, a small decrease in the proportion employed part-time. The unemployment rate increased from 6% to 7%. There was no change in the proportion of the working age population who were not in the labour force (27%).

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

ANZSIC Industry	Canterbury DHB						New Zealand	
	Māori			Non-Māori			%	Rank
	Number	%	Rank	Number	%	Rank		
Females								
Health Care and Social Assistance	1,011	14.6	1	18,792	18.0	1	17.1	1
Retail Trade	966	13.9	2	12,978	12.4	2	11.6	3
Accommodation and Food Services	738	10.6	3	7,392	7.1	5	7.3	5
Education and Training	678	9.8	4	12,576	12.0	3	12.9	2
Manufacturing	645	9.3	5	7,023	6.7	6	6.0	6
Males								
Construction	2,367	27.6	1	21,237	17.8	1	13.2	2
Manufacturing	1,371	16.0	2	17,127	14.4	2	13.4	1
Transport, Postal and Warehousing	654	7.6	3	7,329	6.1	7	5.9	7
Public Administration and Safety	561	6.5	4	5,181	4.3	8	5.2	8
Retail Trade	561	6.5	5	9,684	8.1	4	8.3	5

Source: 2013 Census, Statistics New Zealand

Note: ANZSIC is the Australian and New Zealand Standard Industrial Classification.

Service industries were the main employers of Māori women in Canterbury, including health care and social assistance; retail; accommodation and food services; education and training; followed by manufacturing. For Māori men, 44% were employed in construction and manufacturing. Other leading industries included transport, postal and warehousing; public administration and safety and retail trade.

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

ANZSCO Occupation	Canterbury DHB						New Zealand	
	Māori			Non-Māori			%	Rank
	Number	%	Rank	Number	%	Rank		
Females								
Professionals	1,317	19.0	1	26,811	25.8	1	26.7	1
Clerical and Administrative Workers	1,149	16.5	2	21,039	20.2	2	19.5	2
Community and Personal Service Workers	1,143	16.5	3	13,602	13.1	3	12.9	4
Labourers	1,008	14.5	4	9,153	8.8	6	8.3	6
Sales Workers	981	14.1	5	12,669	12.2	5	11.7	5
Managers	747	10.8	6	13,134	12.6	4	14.4	3
Technicians and Trades Workers	402	5.8	7	5,646	5.4	7	5.0	7
Machinery Operators and Drivers	198	2.9	8	1,887	1.8	8	1.5	8
Males								
Technicians and Trades Workers	2,049	23.7	1	24,831	21.1	2	18.5	3
Labourers	1,821	21.1	2	15,402	13.1	4	13.6	4
Managers	1,272	14.7	3	26,355	22.4	1	22.7	1
Machinery Operators and Drivers	1,239	14.4	4	11,085	9.4	5	9.1	5
Professionals	876	10.1	5	20,739	17.6	3	18.6	2
Community and Personal Service Workers	633	7.3	6	5,469	4.6	8	5.4	7
Sales Workers	402	4.7	7	8,118	6.9	6	7.1	6
Clerical and Administrative Workers	339	3.9	8	5,871	5.0	7	5.1	8

Source: 2013 Census, Statistics New Zealand

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

Among employed Canterbury Māori women, the leading occupational groupings were professionals (19%); clerical and administrative workers (17%); and community and personal service workers (17%). The next most common occupations were labourers, sales workers, and managers.

Māori men were most likely to be employed as technicians and trade workers (24%); labourers (21%); managers (15%); machinery operators and drivers (14%); and professionals (10%).

Table 15: Unpaid work, 15 years and over, Canterbury 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	20,853	88.4	(88.0,88.7)	295,068	88.9	(88.7, 89.0)	0.99 (0.99, 1.00)	-0.5
Looking after disabled/ill household member	2,352	10.1	(9.7,10.5)	21,954	6.1	(6.1, 6.2)	1.65 (1.58, 1.72)	4.0
Looking after disabled/ill non-household member	2,508	10.5	(10.1,10.9)	28,848	7.1	(7.0, 7.2)	1.48 (1.42, 1.54)	3.4

Source: 2013 Census, Statistics New Zealand

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

Close to 90% of Māori adults worked without pay in 2013. Māori were two-thirds more likely than non-Māori to look after someone who was disabled or ill without pay within the home, and nearly 50% more likely to look after a non-household member who was disabled or ill.

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, Canterbury, Nelson Marlborough, West Coast and South Canterbury DHBs combined, 2013

Actions taken a lot to keep costs down	Canterbury and other South Island DHBs			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Put up with feeling the cold	5,000*	9.0*	(6.2, 11.7)	11.0	(10.2, 11.8)
Go without fresh fruit and vegetables	3,000*	5.1*	(3.3, 6.9)	5.4	(4.8, 6.0)
Postpone or put off visits to the doctor	5,000*	9.0*	(6.3, 11.7)	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%.

An estimated 5,000 Māori adults (9%) across the four DHBs reported putting up with feeling cold a lot to keep costs down during the previous 12 months, 3,000 (5%) had gone without fresh fruit and vegetables, and 5,000 (9%) had often postponed or put off visits to the doctor in 2013.

Table 17: Children aged 0–17 years living in families where the only income is means-tested benefits, Canterbury 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	2,790	17.2	(16.6, 17.8)	5,358	6.2	(6.0, 6.4)	2.77 (2.65, 2.89)	11.0
2013	2,769	15.8	(15.3, 16.3)	4,425	5.3	(5.2, 5.5)	2.96 (2.83, 3.10)	10.5

Source: Statistics New Zealand, 2006 and 2013 Census

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.

There was a small decrease of 1% in the proportion of children living in Māori families where the only income was means-tested benefits between 2006 and 2013 (from 17% to 16%). Children in Māori families were 3 times as likely as non-Māori children to be in this situation in 2013.

Table 18: Children and adults living in households with low incomes, Canterbury 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	4,104	26.6	(26.0, 27.3)	12,525	15.8	(15.6, 16.1)	1.69 (1.63, 1.74)	10.8
Adults 18 years & over	8,379	24.5	(24.1, 25.0)	42,789	17.6	(17.4, 17.8)	1.39 (1.36, 1.42)	6.9

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 (27%) of children in Māori households (over 4,100) were in households with low equivalised household incomes in 2013, 69% higher than children in non-Māori households. A quarter of adults in Māori households (nearly 8,400) lived in low income households, 39% higher than adults in other households.

Table 19: Households with no access to a motor vehicle, Canterbury 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	1,329	8.3	(7.9, 8.8)	11,586	7.4	(7.3, 7.6)	1.12 (1.06, 1.18)	0.9
2013	1,416	7.8	(7.4, 8.2)	9,750	6.3	(6.2, 6.4)	1.24 (1.17, 1.31)	1.5
People (% age-standardised)								
2006	3,207	6.4	(6.2, 6.6)	16,485	3.0	(3.0, 3.1)	2.10 (2.02, 2.19)	3.3
2013	3,309	5.6	(5.4, 5.8)	14,076	2.7	(2.6, 2.7)	2.13 (2.04, 2.21)	3.0

Source: 2006 and 2013 Census, Statistics New Zealand

Notes: 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 had no access to a motor vehicle, a quarter more than the proportion of non-Māori households. The proportion of people living in Māori households without a vehicle was twice that of people living in non-Māori households.

Table 20: People in households with no access to telephone, mobile/cell phone, internet, or any telecommunications, Canterbury 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	6,003	9.5	(9.3, 9.7)	46,422	9.1	(9.0, 9.2)	1.05 (1.02, 1.08)	0.4
No telephone	11,205	19.4	(19.1, 19.7)	33,735	10.3	(10.2, 10.5)	1.88 (1.84, 1.91)	9.1
No internet	11,190	18.9	(18.6, 19.2)	52,965	9.4	(9.3, 9.5)	2.00 (1.96, 2.04)	9.4
No tele-communications	981	1.6	(1.5, 1.7)	2,730	0.7	(0.7, 0.7)	2.27 (2.10, 2.46)	0.9

Source: 2013 Censuses, Statistics New Zealand

Notes: 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, 19% of people in Māori households had no access to the internet or did not have a landline, 10% had no cell phone, and almost 2% had no access to any telecommunications in the home. The largest absolute gaps between Canterbury Māori and non-Māori households were in access to the internet and landlines (9% each).

Housing

Table 21: Housing problems reported by Māori aged 15 years and over, Canterbury, Nelson Marlborough, West Coast, South Canterbury DHBs combined, 2013

Housing problem (a big problem)	Canterbury and other South Island DHBs			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Too small	2,500*	4.7*	(3.2, 6.3)	5.3	(4.7, 5.9)
Damp	5,000	9.1	(6.5, 11.7)	11.3	(10.5, 12.2)
Hard to keep warm	8,000	14.6	(11.2, 18.0)	16.5	(15.4, 17.7)
Needs repairs	7,500	13.8	(10.2, 17.5)	13.8	(12.7, 14.9)
Pests in the house	2,500*	4.3*	(2.4, 6.3)	5.8	(5.1, 6.5)

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

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

Housing problems reported to be a big problem by Māori adults in Canterbury and neighbouring South Island DHBs in 2013 included difficulty keeping the house warm (15%), needing repairs (14%), and damp (9%). Only 5% felt their house was too small, and 4% stated that pests were a big problem in their house.

Housing security

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

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	8,913	49.5	(48.7, 50.2)	39,780	26.0	(25.8, 26.2)	1.90 (1.87, 1.94)	23.5
Children under 18 years (% age-standardised)	9,372	52.3	(51.6, 53.0)	24,540	28.8	(28.5, 29.1)	1.81 (1.78, 1.85)	23.5
Adults 18 years and over (% age-standardised)	19,491	49.9	(49.4, 50.3)	76,986	33.7	(33.5, 33.9)	1.48 (1.46, 1.49)	16.1

Source: 2013 Census, Statistics New Zealand

Notes: 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, 8,913 Māori households in Canterbury were rented, half of all Māori households, compared to a quarter of non-Māori households.

Among children living in a Māori household, 52% (over 9,300) were living in rented homes, compared to 29% (24,540 children) in non-Māori households.

Half of adults living in Māori households were living in rented accommodation (around 19,500), compared to a third of adults living in non-Māori households.

Household crowding

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

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	1,524	8.4	(8.0, 8.8)	3,930	2.5	(2.5, 2.6)	3.30 (3.12, 3.50)	5.8
People (% age standardised)	8,016	14.5	(14.2, 14.8)	19,443	6.7	(6.6, 6.8)	2.16 (2.11, 2.22)	7.8

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 3 times more likely than non-Māori households to be classified as crowded using the Canadian National Occupancy Standard, with over 1,500 homes needing at least one additional bedroom, affecting over 8,000 people. People living in Māori households were twice as likely as people 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, Canterbury DHB, 2013

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	180	1.0	(0.9, 1.1)	870	0.6	(0.5, 0.6)	1.77 (1.51, 2.07)	0.4
People (% age standardised)	525	0.8	(0.8, 0.9)	2,085	0.6	(0.6, 0.7)	1.33 (1.21, 1.47)	0.2

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).

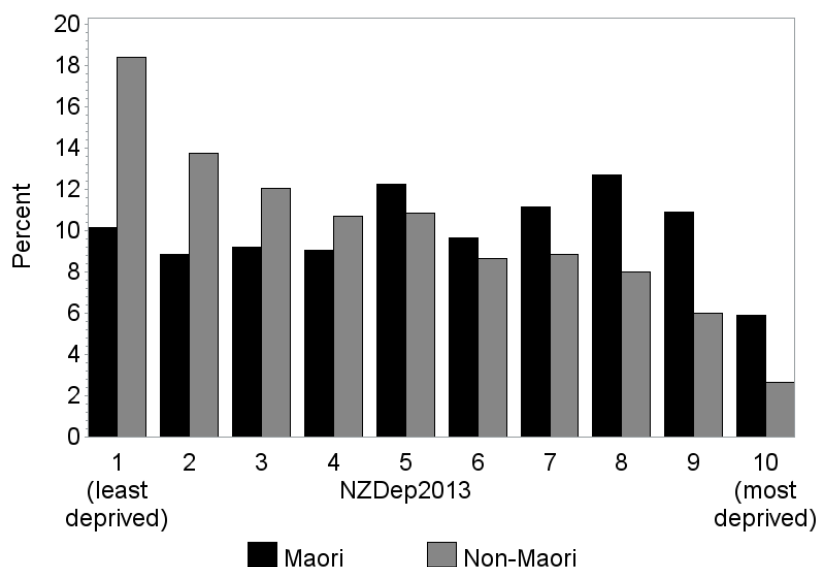
A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.

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

In 2013, 1% of Māori households (180 homes) had no heating, compared to 0.6% of non-Māori households (870 homes).

Area deprivation

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



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

Canterbury Māori and non-Māori have a less deprived small area profile than the national population, but Māori were more likely than non-Māori to live in the most deprived areas. In 2013, 41% of Māori and 26% of non-Māori lived in the four most deprived decile areas (see accompanying Excel table).

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, acute rheumatic fever, 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, Canterbury 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	74	6.8 (6.1, 7.5)	294	5.7 (5.4, 6.0)	1.19 (1.06, 1.32)	1.1
High birth-weight	26	2.4 (2.0, 2.8)	129	2.5 (2.3, 2.7)	0.96 (0.80, 1.15)	-0.1
Preterm	93	8.5 (7.8, 9.2)	401	7.8 (7.4, 8.1)	1.09 (0.99, 1.20)	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. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

During 2009 to 2013 there were 1,093 Māori infants born per year on average, 17% of all live births in the DHB (6,259 per year). On average, 74 Māori babies per year were born with low birthweight, at a rate of 7%, 19% higher than the non-Māori rate; 26 per year (2%) were born with high birth-weight; and 93 per year (9%) were born prematurely.

Well child/Tamariki ora indicators

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

Indicator	Period	Māori	
		Count	%
1. Babies enrolled with a Primary Health Organisation (PHO) by three months old	20 Aug to 19 Nov 2013	122	79
11. Babies exclusively or fully breastfed at 2 weeks		322	76
12. Babies exclusively or fully breastfed at 6 weeks	January to June 2013	272	63
19. Mothers smoke-free two weeks postnatal		227	67
5. Children under 5 years enrolled with oral health services (PHO enrolled children)	2012	1,698	30
7. Children starting school who have participated in ECE	2013	868	97
15. Children with a healthy weight at 4 years, DHB of service	July to Dec 2013	192	66

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 Quality 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, 79% of Māori babies were enrolled with a PHO by three months of age. In the first half of 2013, 76% of Māori babies were breastfed at two weeks of age and 63% at six weeks. Sixty-seven percent of Māori mothers were smoke-free two weeks after giving birth.

Among pre-school children enrolled with a PHO 30% of Māori were enrolled with oral health services in 2012. Nearly all (97%) Māori children who started school in 2013 had participated in early childhood education. Two-thirds with a BMI recorded at their B4 School Check had a healthy weight.

Table 27: Children fully immunised by the milestone age, Canterbury 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	690	75%	4,387	86%	0.87	-11%
8 months	830	90%	4,724	93%	0.96	-4%
12 months	847	92%	4,770	94%	0.98	-2%
18 months	743	80%	4,704	90%	0.90	-9%
24 months	903	93%	4,976	94%	1.00	0%
5 years	841	87%	4,845	86%	1.02	1%

Source: National Immunisation Register

In the 12 months to 31 December 2014, 75% of Māori infants aged six months were fully immunised, compared to 86% of non-Māori infants. However, 90% of Māori children aged eight months and 93% aged 24 months had completed their appropriate immunisations. At five years of age 87% of Māori children were fully immunised.

Oral health

Table 28: Oral health status of children aged 5 or in Year 8 at school, Canterbury 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	564	55 (51, 59)	2.8		5,594	36 (35, 37)	1.5		1.54 (1.42, 1.67)	19
Year 8	491	57 (52, 61)	1.7		4,838	44 (42, 45)	1.0		1.30 (1.20, 1.41)	13

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.

Fifty-five percent of Māori children aged five years in 2012 had caries, 54% higher than the proportion of non-Māori children. The mean number of decayed, missing or filled teeth was 2.8 for Māori compared to 1.5 for non-Māori. Of those in School Year 8 (aged around 12 years), 57% of Māori and 44% of non-Māori children had caries. The mean number of decayed, missing or filled teeth was 1.7 for Māori and 1.0 for non-Māori.

Table 29: Hospitalisations for tooth and gum disease, children aged 0–14 years, Canterbury 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	46	653.2	(552.2, 772.5)	266	684.4	(638.5, 733.6)	0.95 (0.80, 1.14)	-31.2
Male	49	669.5	(569.4, 787.3)	298	735.2	(688.5, 785.0)	0.91 (0.76, 1.08)	-65.7
Total	95	661.3	(588.5, 743.1)	564	709.8	(676.7, 744.4)	0.93 (0.82, 1.06)	-48.4

Source: National Minimum Data Set (NMDS).

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

There were 95 hospital admissions per year on average for tooth and gum disease among Māori children, at a rate of 661 per 100,000, similar to the non-Māori rate.

Middle ear disease

Table 30: Hospitalisations for grommet insertions, children aged 0–14 years, Canterbury 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	40	548.4	(458.0, 656.7)	187	483.0	(444.6, 524.7)	1.14 (0.93, 1.38)	65.4
Male	57	743.4	(639.4, 864.3)	273	677.1	(632.3, 725.1)	1.10 (0.93, 1.30)	66.2
Total	96	645.9	(575.4, 725.1)	460	580.1	(550.3, 611.5)	1.11 (0.98, 1.26)	65.8

Source: NMDS

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

On average, 96 Māori children per year were admitted for insertion of grommets for otitis media, at a rate of 646 per 100,000, similar to that of non-Māori.

Healthy skin

Table 31: Hospitalisations for serious skin infections, children aged 0–14 years, Canterbury 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	16	220.9	(166.3, 293.3)	60	154.1	(133.2, 178.3)	1.43 (1.04, 1.97)	66.7
Male	11	141.8	(100.2, 200.7)	87	214.3	(189.9, 241.9)	0.66 (0.46, 0.96)	-72.5
Total	27	181.3	(145.6, 225.9)	148	184.2	(167.8, 202.2)	0.98 (0.78, 1.25)	-2.9

Source: NMDS

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

There were 27 admissions per year on average for serious skin infections among Māori children. The rate for Māori girls was 43% higher than for non-Māori, while the rate for Māori boys was 34%.

Acute rheumatic fever

Table 32: Individuals admitted to hospital for acute rheumatic fever, ages 0–14 and 15–24 years, Canterbury DHB, 2011–2013

Age group and 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)			
0–14 years								
Female	<1	5.0	(0.7, 35.7)	0	0.0	. . . .	. . . .	5.0
Male	<1	4.8	(0.7, 33.9)	1	2.4	(0.8, 7.3)	2.02 (0.21, 19.38)	2.4
Total	1	4.9	(1.2, 19.6)	1	1.2	(0.4, 3.7)	4.14 (0.69, 24.78)	3.7
15–24 years								
Female	0	0.0	. . . .	<1	1.0	(0.1, 7.2)	0.00	-1.0
Male	<1	7.9	(1.1, 56.0)	0	0.0	. . . .	. . . .	7.9
Total	<1	3.9	(0.6, 28.0)	<1	0.5	(0.1, 3.6)	7.81 (0.49, 124.87)	3.4

Source: NMDS

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

Very few Canterbury children were admitted to hospital for acute rheumatic fever during the 12 year period 2002–2013, averaging one Māori child under 15 years every three years and one young Māori adult aged 15–24 every three years.

Among non-Māori there was one child under 15 years admitted per year on average and one aged 15–24 years admitted every three years on average.

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 33: Potentially avoidable hospitalisations for children aged 1 month to 14 years, Canterbury 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	223	3,066.7 (2,842.2, 3,308.9)	1,369	3,549.2 (3,442.3, 3,659.5)	0.86 (0.80, 0.94)	-482.5
Male	282	3,679.3 (3,438.9, 3,936.6)	1,665	4,131.6 (4,018.5, 4,247.8)	0.89 (0.83, 0.96)	-452.2
Total	504	3,373.0 (3,206.8, 3,547.8)	3,034	3,840.4 (3,762.3, 3,920.1)	0.88 (0.83, 0.93)	-467.4

Source: NMDS

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

There were just over 500 potentially avoidable hospitalisations per year on average among Māori children aged 14 years and under. The admission rate was 12% lower for Māori than for non-Māori children, or around 470 fewer admissions per 100,000 children.

Table 34: Ambulatory care sensitive hospitalisations for children aged 1 month to 14 years, Canterbury 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	162	2,258.9 (2,066.4, 2,469.3)	1,059	2,743.3 (2,649.5, 2,840.4)	0.82 (0.75, 0.91)	-484.4
Male	207	2,732.0 (2,524.8, 2,956.1)	1,225	3,037.9 (2,941.3, 3,137.8)	0.90 (0.83, 0.98)	-306.0
Total	369	2,495.4 (2,352.3, 2,647.2)	2,284	2,890.6 (2,822.9, 2,959.9)	0.86 (0.81, 0.92)	-395.2

Source: NMDS

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

On average there were 369 admissions per year for ambulatory care sensitive conditions among Māori children, at a rate 14% lower than that of non-Māori children, or 395 fewer admissions per 100,000 children.



Mauri ora: Rangatahi

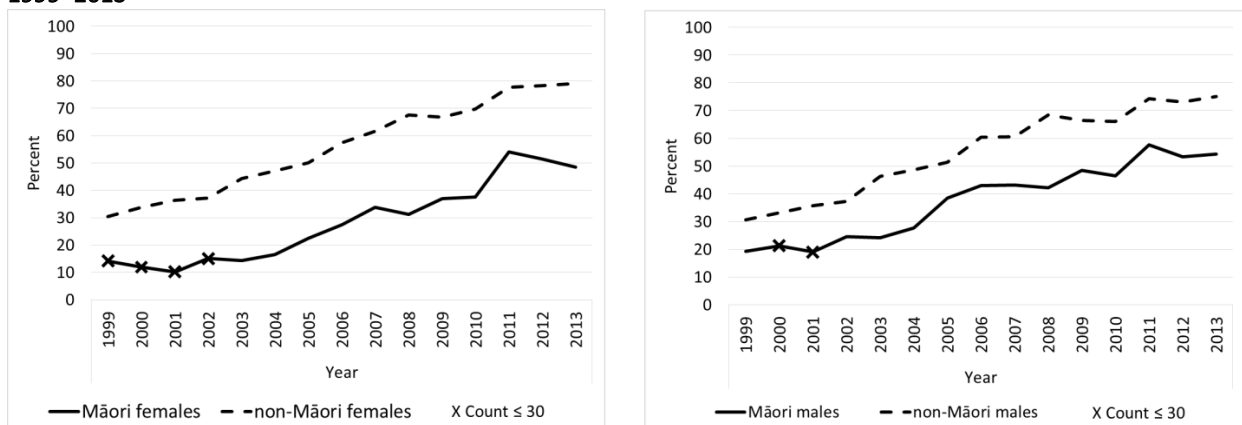
– Young adults

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

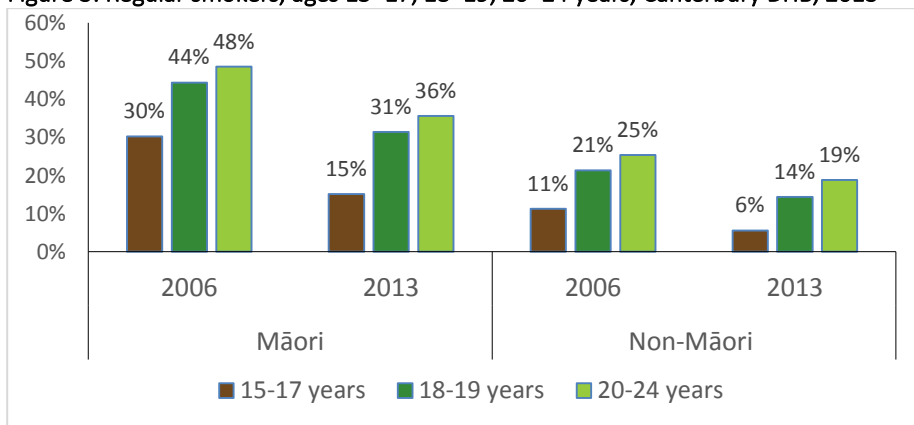
Figure 2: Trends in the proportion of students aged 14–15 years who have never smoked, by gender, Canterbury DHB, 1999–2013



Source: ASH Year 10 Snapshot Survey, 2013

Over the last 15 years there has been a significant increase in the number of Māori aged 14 or 15 who have never smoked (Figure 2). In 2013, half had never smoked.

Figure 3: Regular smokers, ages 15–17, 18–19, 20–24 years, Canterbury 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 Canterbury 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, 36% of Māori were smoking regularly in 2013. Non-Māori in each age group were around half as likely as Māori to smoke regularly.

Immunisations

Table 35: Human papilloma virus immunisations (HPV) by birth cohorts, Canterbury 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	128	29.8%	1019	37.9%	0.79	-8.1%
1999	15	2012	154	39.5%	1157	43.0%	0.92	-3.5%
1998	16	2011	157	42.4%	1193	44.2%	0.96	-1.8%
1997	17	2010	179	42.6%	1363	50.5%	0.84	-7.9%

Source: National Immunisation Register.

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

Only 30% of Māori girls aged 14 in 2014 had completed three doses of HPV vaccine, compared to 38% of non-Māori and 57% of all New Zealand girls of the same age. Among Māori women aged 17 in 2014, 43% were fully immunised, compared to 51% of non-Māori and 55% nationally.

Mental health

Table 36: Hospitalisations for injury from intentional self-harm, 15–24 and 25–44 years, Canterbury 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	20	500.7	(387.8, 646.4)		187	663.8	(610.8, 721.4)	0.75	(0.58, 0.99)	-163.1
Male	7	151.5	(97.7, 234.9)		72	217.6	(190.2, 248.8)	0.70	(0.44, 1.10)	-66.1
Total	26	326.1	(261.4, 406.8)		259	440.7	(410.5, 473.0)	0.74	(0.59, 0.93)	-114.6
25–44 years										
Female	19	342.6	(264.1, 444.5)		202	332.7	(306.8, 360.7)	1.03	(0.78, 1.35)	9.9
Male	13	238.8	(174.1, 327.4)		83	140.8	(124.2, 159.5)	1.70	(1.21, 2.38)	98.0
Total	32	290.7	(237.8, 355.4)		286	236.7	(221.2, 253.4)	1.23	(0.99, 1.52)	54.0

Source: NMDS.

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

Among Māori aged 15–24 years, there were 26 admissions for injury from intentional self-harm per year on average. Females had a higher rate of admission than males for both Māori and non-Māori.

Among Māori aged 25–44 years there were 32 admissions per year on average, at a rate of nearly 300 per 100,000. Māori males were admitted at a 70% higher rate than non-Māori, or nearly 100 more admissions per 100,000.

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 Canterbury can be found in the accompanying Excel® tables labelled 'Death registrations' and 'Hospitalisations by principal diagnosis'. For example, the hospitalisations table shows disparities between Canterbury Māori and non-Māori in rates of admission for pneumonia, acute bronchitis and bronchiolitis, gastric ulcers, and pancreatitis.

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 37: Health status reported by Māori aged 15 years and over, Canterbury, Nelson Marlborough, West Coast and South Canterbury DHBs, 2013

Health status	Canterbury and other South Island DHBs			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Excellent	9,000	16.4	(12.2, 20.5)	18.1	(16.8, 19.3)
Very good	21,000	39.4	(34.4, 44.4)	37.0	(35.5, 38.5)
Good	15,000	27.6	(23.4, 31.9)	28.5	(27.3, 29.7)
Fair / poor	9,000	16.6	(13.0, 20.3)	16.4	(15.3, 17.5)

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

Over half of Māori adults (56%) in the four South Island DHBs combined report having excellent or very good health and another quarter (28%) describe their health as good. One in six (17%) report having fair or poor health status.

Smoking status

Table 38: Cigarette smoking status, 15 years and over, Canterbury 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	8,214	40.2	(39.5, 40.9)	56,784	19.8	(19.6, 19.9)	2.03	(1.99, 2.07)	20.4
Ex-smoker	4,084	20.2	(19.7, 20.7)	74,907	18.9	(18.8, 19.0)	1.07	(1.04, 1.10)	1.3
Never smoked	8,126	39.6	(38.9, 40.3)	194,460	61.3	(61.1, 61.5)	0.65	(0.63, 0.66)	-21.7
2013									
Regular smoker	7,398	31.3	(30.8, 31.9)	44,517	14.9	(14.8, 15.1)	2.10	(2.06, 2.14)	16.4
Ex-smoker	5,568	22.7	(22.2, 23.2)	77,721	18.7	(18.5, 18.8)	1.21	(1.19, 1.24)	4.0
Never smoked	11,115	45.9	(45.3, 46.6)	213,240	66.4	(66.2, 66.6)	0.69	(0.68, 0.70)	-20.4

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 33%. The corresponding increase in those who have never smoked was greater than the increase in ex-smokers. However, Māori remained more than twice as likely as non-Māori to smoke regularly in 2013.

Heart disease and stroke

Table 39: Hospitalisations for circulatory system diseases, 25 years and over, Canterbury 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	108	955.6	(856.0, 1,066.7)	3,397	761.5	(741.1, 782.5)	1.25 (1.12, 1.41)	194.0
Male	198	1,657.5	(1,528.1, 1,797.7)	4,275	1,303.8	(1,276.6, 1,331.6)	1.27 (1.17, 1.38)	353.6
Total	306	1,306.5	(1,223.8, 1,394.8)	7,672	1,032.7	(1,015.6, 1,050.0)	1.27 (1.18, 1.35)	273.8

Source: NMDS

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

Around 300 Māori were admitted to hospital per year on average for diseases of the circulatory system (including heart disease and stroke), at a rate 27% higher than non-Māori, or 274 more admissions per 100,000.

Table 40: Ischaemic heart disease indicators, 25 years and over, Canterbury 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	34	298.1	(245.0, 362.7)	958	194.6	(185.8, 203.9)	1.53 (1.25, 1.87)	103.5
Male	59	474.0	(408.6, 550.0)	1587	478.9	(463.6, 494.8)	0.99 (0.85, 1.15)	-4.9
Total	92	386.1	(342.9, 434.7)	2545	336.8	(327.9, 345.9)	1.15 (1.02, 1.29)	49.3
Angiography procedures								
Female	31	276.0	(225.1, 338.5)	661	199.6	(189.7, 209.9)	1.38 (1.12, 1.71)	76.5
Male	57	458.6	(394.2, 533.6)	1278	456.1	(440.4, 472.5)	1.01 (0.86, 1.17)	2.5
Total	88	367.3	(325.2, 414.9)	1939	327.8	(318.5, 337.5)	1.12 (0.99, 1.27)	39.5
Angioplasty procedures								
Female	10	87.6	(61.2, 125.5)	210	59.6	(54.5, 65.2)	1.47 (1.02, 2.13)	28.1
Male	19	150.7	(116.2, 195.6)	551	198.2	(187.9, 209.0)	0.76 (0.58, 0.99)	-47.4
Total	29	119.2	(96.5, 147.2)	761	128.9	(123.1, 134.9)	0.92 (0.75, 1.15)	-9.7
Coronary Artery Bypass Graft (CABG)								
Female	1	8.8	(2.8, 27.4)	45	12.3	(10.3, 14.7)	0.72 (0.23, 2.26)	-3.5
Male	7	52.5	(33.8, 81.5)	155	51.1	(46.3, 56.4)	1.03 (0.65, 1.61)	1.4
Total	8	30.7	(20.3, 46.2)	199	31.7	(29.1, 34.6)	0.97 (0.64, 1.47)	-1.0
Acute coronary syndrome admissions								
Female	20	170.9	(132.2, 221.0)	565	102.4	(96.1, 109.1)	1.67 (1.28, 2.17)	68.5
Male	31	253.7	(206.9, 311.0)	873	257.2	(245.9, 269.1)	0.99 (0.80, 1.22)	-3.5
Total	51	212.3	(180.9, 249.1)	1438	179.8	(173.3, 186.6)	1.18 (1.00, 1.39)	32.5

Source: NMDS.

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

On average, 92 Māori per year were admitted to hospital for ischemic heart disease (IHD), at a rate 15% higher than non-Māori. The difference was only significant for Māori women compared to non-Māori women (53% higher) with just over 100 more admissions per 100,000. Of those Māori admitted for IHD, 51 per year were admitted with acute coronary syndrome. Māori women had a 67% higher risk of admission for ACS than non-Māori women (69 more admissions per 100,000).

There were 88 angiography procedures conducted for Māori patients per year on average, at a similar rate to non-Māori. On average, 19 Māori men and 10 Māori women per year had angioplasty procedures, with the rate for Māori women nearly 50% higher than the non-Māori rate. Eight Māori had a CABG per year, mostly men, at a similar rate to non-Māori.

Table 41: Hospitalisations for heart failure, stroke, and hypertensive disease, 25 years and over, Canterbury 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	14	122.4	(90.2, 166.2)	429	56.5	(52.2, 61.1)	2.17	(1.58, 2.97)	65.9
Male	35	292.4	(241.5, 354.2)	462	94.4	(88.4, 100.8)	3.10	(2.53, 3.79)	198.1
Total	49	207.4	(176.3, 244.0)	891	75.4	(71.7, 79.4)	2.75	(2.32, 3.26)	132.0
Stroke									
Female	10	88.2	(61.9, 125.7)	571	106.2	(99.4, 113.6)	0.83	(0.58, 1.19)	-18.0
Male	20	174.1	(135.1, 224.5)	561	142.6	(134.5, 151.2)	1.22	(0.94, 1.59)	31.5
Total	31	131.2	(106.7, 161.3)	1132	124.4	(119.1, 130.0)	1.05	(0.85, 1.30)	6.8
Hypertensive disease									
Female	1	5.7	(1.4, 22.9)	50	11.9	(9.5, 15.0)	0.48	(0.12, 1.95)	-6.2
Male	4	29.7	(16.4, 53.8)	22	7.8	(5.7, 10.8)	3.79	(1.93, 7.44)	21.9
Total	4	17.7	(10.3, 30.6)	72	9.9	(8.2, 11.9)	1.79	(1.01, 3.20)	7.8

Source: NMDS.

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

There were 49 admissions per year on average for Māori with heart failure, at nearly 3 times the rate for non-Māori, or 132 more admissions per 100,000. Māori men were more likely to be admitted than Māori women.

On average, 31 Māori per year were admitted for stroke, at a similar rate to non-Māori. Māori males had twice the rate of admissions of Māori females.

Four Māori per year on average were admitted for hypertensive disease, at a rate 79% higher than non-Māori.

Table 42: Hospitalisations for chronic rheumatic heart disease and heart valve replacements, 25 years and over, Canterbury 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	0	3.0	(0.4, 21.0)	8	4.0	(2.5, 6.4)	0.74	(0.10, 5.55)	-1.0
Male	0	2.8	(0.4, 19.9)	5	1.7	(1.0, 2.9)	1.68	(0.22, 12.90)	1.1
Total	1	2.9	(0.7, 11.5)	13	2.8	(2.0, 4.1)	1.02	(0.24, 4.27)	0.0
Heart valve replacements									
Female	0	3.0	(0.4, 21.0)	38	10.1	(8.0, 12.8)	0.29	(0.04, 2.10)	-7.2
Male	2	18.3	(8.1, 41.3)	55	14.9	(12.5, 17.8)	1.23	(0.53, 2.83)	3.4
Total	2	10.6	(5.0, 22.6)	93	12.5	(10.9, 14.4)	0.85	(0.39, 1.83)	-1.9

Source: NMDS.

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

On average, there was one hospital admission per year for Māori with chronic rheumatic heart disease and two admissions per year for heart valve replacements. There were no differences in rates for Māori and non-Māori.

Table 43: Early deaths from circulatory system disease, Canterbury 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	9	44.1	(32.9, 59.1)	79	13.6	(12.2, 15.2)	3.23	(2.36, 4.42)	30.5
Male	15	65.6	(52.3, 82.4)	173	31.1	(28.9, 33.3)	2.11	(1.66, 2.68)	34.6
Total	24	54.9	(45.8, 65.7)	252	22.4	(21.1, 23.7)	2.45	(2.03, 2.97)	32.5

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 24 Māori died early from cardiovascular disease per year, at 2.5 times the rate of non-Māori or 33 more deaths per 100,000.

Diabetes

Table 44: Diabetes prevalence, medication use, monitoring of blood glucose levels, screening for renal disease, Canterbury DHB, 2013

Indicator	Māori		Non-Māori		Māori/non-Māori ratio (95% CI)		Difference in percentage
	Count	% (crude)	Count	% (crude)			
Prevalence of diabetes (all ages)	1,359	3.2	20,005	4.3	0.75	-1.1	
People with diabetes regularly receiving metformin or insulin, 25+	763	56.1	11,713	58.6	0.96	-2.4	
People with diabetes having regular Hb1Ac monitoring, 25+	975	71.7	15,194	74.7	0.96	-3.0	
People with diabetes having regular screening for renal disease, 25+	560	41.2	8,827	44.1	0.93	-2.9	

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.

Around 1,360 Māori were estimated to have diabetes in 2013, giving a crude prevalence of 3%. The prevalence has not been adjusted for age. Half of Māori with diabetes were regularly receiving metformin or insulin in 2013. Just over 70% were having regular monitoring of blood glucose levels and 41% were being screened regularly for renal disease.

Table 45: Hospitalisations for lower limb amputations for people with concurrent diabetes, 15 years and over, Canterbury 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	0	2.3	(0.3, 16.1)	13	3.0	(2.1, 4.5)	0.75	(0.10, 5.51)	-0.8
Male	3	14.5	(7.2, 29.0)	41	9.7	(7.9, 11.9)	1.49	(0.72, 3.08)	4.8
Total	3	8.4	(4.3, 16.1)	53	6.4	(5.3, 7.6)	1.31	(0.66, 2.60)	2.0

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 with diabetes had lower limbs amputated.

Cancer

Table 46: Most common cancer registrations for Māori by site, all ages, Canterbury 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	59	269.7	(240.5, 302.4)	1,177	186.0	(180.1, 192.2)	1.45 (1.29, 1.63)	83.7
Breast	19	83.4	(68.0, 102.3)	305	56.0	(52.9, 59.4)	1.49 (1.20, 1.84)	27.4
Lung	8	34.0	(24.8, 46.7)	93	10.9	(9.8, 12.2)	3.12 (2.23, 4.35)	23.1
Cervix	5	23.4	(15.6, 34.9)	18	5.6	(4.4, 7.1)	4.18 (2.63, 6.65)	17.8
Colorectal	5	19.8	(13.1, 29.9)	184	20.8	(19.2, 22.6)	0.95 (0.63, 1.45)	-1.0
Ovary	3	12.0	(7.1, 20.4)	36	6.1	(5.1, 7.3)	1.97 (1.13, 3.43)	5.9
Male								
All cancers	47	199.6	(175.5, 226.9)	1,341	211.7	(205.5, 218.0)	0.94 (0.83, 1.08)	-12.1
Prostate	10	42.7	(32.5, 56.0)	413	58.6	(56.0, 61.3)	0.73 (0.55, 0.96)	-15.9
Lung	6	24.9	(17.5, 35.5)	107	13.4	(12.1, 14.7)	1.87 (1.30, 2.69)	11.6
Colorectal	6	22.6	(15.5, 32.8)	184	25.2	(23.4, 27.2)	0.89 (0.61, 1.31)	-2.7
Liver	3	13.0	(8.0, 21.3)	17	2.8	(2.1, 3.7)	4.69 (2.67, 8.24)	10.3
Kidney	3	11.1	(6.6, 18.9)	45	7.4	(6.4, 8.6)	1.51 (0.87, 2.61)	3.8

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 59 cancer registrations per year on average among Māori females, at a rate 45% higher than non-Māori. The most common cancers registered for Māori females were breast (32% of all cancers), lung (13%), cervical (8%), colorectal cancer (8%) and ovarian (5%). Registration rates were higher for Māori than non-Māori women for cervical (4 times as high), lung (3 times as high), ovarian (twice as high), and breast cancers (nearly 50% higher).

Among Māori males there were 47 cancer registrations per year on average, at a similar rate to non-Māori. Prostate (21% of all cancers), lung (13%), colorectal (13%), liver (7%), and kidney (7%) were the most common cancers registered for Māori males. Rates were higher for Māori than non-Māori males for lung cancer (nearly twice as high) and liver cancer (over 4 times as high), and lower for prostate cancer.

Table 47: Most common cancer deaths for Māori by site, all ages, Canterbury 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	16	70.9	(56.7, 88.7)	479	53.6	(50.8, 56.6)	1.32 (1.05, 1.66)	17.3
Lung	6	27.3	(19.0, 39.1)	72	7.9	(6.9, 8.9)	3.47 (2.37, 5.08)	19.4
Breast	3	14.9	(9.1, 24.4)	74	11.3	(10.0, 12.8)	1.32 (0.79, 2.19)	3.6
Male								
All cancers	17	73.1	(59.1, 90.5)	535	65.1	(62.1, 68.2)	1.12 (0.90, 1.40)	8.0
Lung	4	18.8	(12.4, 28.6)	94	10.9	(9.9, 12.1)	1.73 (1.12, 2.66)	7.9
Colorectal	2	8.1	(4.3, 15.1)	73	9.0	(8.0, 10.2)	0.90 (0.48, 1.69)	-0.9

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 accounted for 30% of all deaths, with a rate 32% higher than non-Māori. Lung cancer was the most common cause of cancer death, comprising 38% of all cancer deaths, with a rate 3 times that of non-Māori women. Breast cancer deaths were 21% of all cancer deaths among Māori women, at a rate similar to non-Māori.

For Māori males, cancer deaths accounted for 26% of all deaths. Lung cancer was the most common cause of cancer death for Māori males, at a quarter of all cancer deaths, and a rate 73% higher than non-Māori males. Colorectal cancer was the second most frequent, making up 12% of all cancer deaths.

Breast and cervical cancer screening

Table 48: BreastScreen Aotearoa breast screening coverage, women aged 45–69 years, Canterbury DHB, 24 months to 31 December 2014

Māori			Non-Māori		
Number screened	Eligible population	% screened	Number screened	Eligible population	% screened
3,129	4,120	75.9%	62,468	76,730	81.4%

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 prior to 31 December 2014, 76% of Māori women and 81% of non-Māori women in Canterbury had been screened.

Table 49: Cervical screening coverage, women aged 25–69 years, Canterbury DHB, 3 years and 5 years to 31 December 2014

Māori					Non-Māori				
Eligible population	Women screened in		Women screened in		Eligible population	Women screened in		Women screened in	
	last 5 years	5-year coverage %	last 3 years	3-year coverage %		last 5 years	5-year coverage %	last 3 years	3-year coverage %
9,074	6,009	66.2%	4,939	54.4%	123,597	111,782	90.4%	94,855	76.7%

Source: National Screening Unit, Ministry of Health

Note: Population is adjusted for hysterectomy.

Among women aged 25 to 69 years, 66% of Māori women and 90% of non-Māori women had had a cervical smear test during the five years prior to December 2014. The three year cervical screening coverage was 54% for Māori women and 77% 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 50: Hospitalisations for asthma, by age group, Canterbury 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	29	399.3	(323.0, 493.6)	127	325.5	(294.3, 359.9)	1.23	(0.97, 1.55)	73.8
Male	66	864.5	(751.8, 994.0)	188	465.2	(428.4, 505.2)	1.86	(1.58, 2.19)	399.2
Total	95	631.9	(562.3, 710.1)	315	395.4	(370.9, 421.4)	1.60	(1.40, 1.83)	236.5
15–34 years									
Female	10	145.5	(102.2, 207.2)	50	88.8	(75.6, 104.3)	1.64	(1.11, 2.42)	56.7
Male	6	82.9	(52.6, 130.7)	28	46.8	(37.7, 58.0)	1.77	(1.07, 2.93)	36.1
Total	17	114.2	(86.4, 151.0)	78	67.8	(59.6, 77.1)	1.68	(1.24, 2.29)	46.4
35–64 years									
Female	8	127.0	(84.8, 190.3)	83	87.5	(76.5, 100.0)	1.45	(0.95, 2.22)	39.6
Male	13	249.5	(181.6, 342.9)	38	44.6	(36.6, 54.3)	5.60	(3.85, 8.13)	204.9
Total	21	188.3	(146.5, 242.0)	121	66.0	(59.1, 73.8)	2.85	(2.17, 3.75)	122.2
65 years and over									
Female	2	246.8	(110.7, 550.1)	32	76.5	(60.8, 96.1)	3.23	(1.40, 7.43)	170.3
Male	1	114.9	(37.0, 357.0)	8	29.4	(19.4, 44.6)	3.91	(1.17, 13.08)	85.5
Total	3	180.9	(94.0, 348.1)	40	52.9	(43.3, 64.7)	3.42	(1.72, 6.78)	127.9

Source: NMDS.

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

There were 95 hospital admissions for asthma per year among Māori children aged 0–14 years, at a rate 60% higher than that of non-Māori. Māori aged 15–34 years had an average of 17 admissions per year with a rate 68% higher than non-Māori. Among Māori adults aged 35–64 years, there were 21 admissions per year on average, at a rate nearly 3 times the rate of non-Māori. Older Māori aged 65 years and over were admitted at a rate 3 times the non-Māori rate, with three admissions per year on average.

Table 51: Hospitalisations for chronic obstructive pulmonary disease (COPD), 45 years and over, Canterbury 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	73	1,702.0	(1,489.6, 1,944.8)	599	380.2	(360.4, 401.1)	4.48	(3.88, 5.17)	1321.9
Male	34	736.2	(606.6, 893.6)	625	406.9	(386.6, 428.3)	1.81	(1.48, 2.21)	329.3
Total	107	1,219.1	(1,092.2, 1,360.8)	1,224	393.6	(379.3, 408.4)	3.10	(2.76, 3.48)	825.6

Source: NMDS.

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

There were 107 hospitalisations per year on average for Māori with COPD, at a rate 3 times that of non-Māori, or 826 more admissions per 100,000. Māori women had a higher rate of admission than Māori men, and a greater disparity with non-Māori women (over 4 times the rate, or 1,322 more admissions per 100,000).

Table 52: Early deaths from respiratory disease, Canterbury 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	4	17.9	(11.3, 28.4)	34	5.7	(4.7, 6.9)	3.14	(1.91, 5.17)	12.2
Male	3	14.0	(8.6, 22.9)	34	6.2	(5.2, 7.4)	2.26	(1.34, 3.80)	7.8
Total	7	16.0	(11.4, 22.4)	68	6.0	(5.2, 6.8)	2.68	(1.87, 3.84)	10.0

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, seven Māori per year died early from respiratory disease, at a rate 2.7 times that of non-Māori, or 10 more deaths per 100,000.

Mental disorders

Table 53: Hospitalisations for mental disorders, all ages, Canterbury 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	125	558.6	(504.3, 618.7)	1,452	468.0	(451.2, 485.4)	1.19 (1.07, 1.33)	90.6
Schizophrenia	15	66.1	(49.2, 88.8)	148	49.7	(44.7, 55.2)	1.33 (0.97, 1.82)	16.5
Mood (affective)	50	216.1	(183.8, 254.0)	639	180.9	(171.0, 191.5)	1.19 (1.01, 1.42)	35.1
—Bipolar	17	72.8	(55.3, 95.7)	191	43.7	(39.4, 48.6)	1.66 (1.24, 2.23)	29.0
—Depressive episode	19	85.1	(65.7, 110.3)	234	65.0	(59.1, 71.4)	1.31 (0.99, 1.73)	20.2
Substance use	19	89.5	(69.0, 116.1)	193	75.4	(68.9, 82.6)	1.19 (0.90, 1.56)	14.1
—Alcohol	11	51.4	(36.4, 72.6)	152	57.3	(51.7, 63.5)	0.90 (0.63, 1.29)	-5.9
Anxiety, stress-related	23	105.0	(82.9, 133.0)	137	50.6	(45.0, 56.9)	2.08 (1.59, 2.70)	54.4
Male								
All disorders	134	598.5	(541.9, 661.0)	1,071	371.4	(356.8, 386.6)	1.61 (1.45, 1.79)	227.1
Schizophrenia	54	243.2	(208.1, 284.2)	233	92.7	(85.6, 100.4)	2.62 (2.20, 3.13)	150.5
Mood (affective)	30	138.8	(112.7, 170.9)	296	93.8	(86.9, 101.3)	1.48 (1.19, 1.85)	45.0
—Bipolar	16	72.3	(54.1, 96.7)	127	41.5	(37.1, 46.4)	1.74 (1.28, 2.38)	30.8
—Depressive episode	7	33.2	(21.8, 50.7)	92	25.5	(22.0, 29.5)	1.30 (0.83, 2.04)	7.7
Substance use	26	114.1	(91.1, 143.0)	273	96.3	(89.3, 103.9)	1.18 (0.93, 1.50)	17.8
—Alcohol	15	64.4	(47.9, 86.5)	222	75.5	(69.3, 82.2)	0.85 (0.63, 1.16)	-11.1
Anxiety, stress-related	13	60.6	(44.2, 83.0)	99	36.7	(32.2, 41.8)	1.65 (1.17, 2.32)	23.9
Total								
All disorders	259	578.5	(538.7, 621.2)	2,522	419.7	(408.5, 431.2)	1.38 (1.28, 1.49)	158.8
Schizophrenia	69	154.7	(134.8, 177.5)	381	71.2	(66.8, 75.8)	2.17 (1.87, 2.53)	83.5
Mood (affective)	80	177.4	(156.1, 201.6)	935	137.4	(131.3, 143.8)	1.29 (1.13, 1.48)	40.0
—Bipolar	33	72.6	(59.4, 88.6)	318	42.6	(39.5, 46.0)	1.70 (1.37, 2.11)	29.9
—Depressive episode	27	59.2	(47.4, 73.8)	326	45.2	(41.8, 49.0)	1.31 (1.03, 1.65)	13.9
Substance use	45	101.8	(85.9, 120.7)	466	85.9	(81.0, 91.0)	1.19 (0.99, 1.42)	15.9
—Alcohol	26	57.9	(46.2, 72.5)	374	66.4	(62.1, 70.9)	0.87 (0.69, 1.10)	-8.5
Anxiety, stress-related	37	82.8	(68.5, 100.0)	236	43.6	(40.0, 47.6)	1.90 (1.54, 2.34)	39.1

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 38% higher for Māori than for non-Māori.

Among Māori females, the most common cause of admission was mood disorders, with 50 admissions per year on average. The rates of admission for bipolar disorders and depressive episodes were higher for Māori women than for non-Māori women, as was the admission rate for anxiety or stress related disorders.

Among Māori males, the overall admission rate was 61% higher than the non-Māori rate. Admissions for schizophrenia type disorders were the most common, at a rate 2.6 times that of non-Māori. The second most

common cause of admission was for mood disorders, with a rate 48% higher than the non-Māori rate, followed by substance use disorders. Admissions for anxiety or stress-related disorders were 65% higher than the non-Māori admission rate.

Gout

Table 54: Gout prevalence and treatment, 20–79 years, Canterbury DHB, 2011

Indicator	Māori		Non-Māori		Māori/non-Māori ratio	Difference in percentage
	Count	%	Count	%		
Gout prevalence	880	3.9	7,753	2.3	1.65	1.5
People with gout who received allopurinol regularly	348	39.5	3,498	45.1	0.88	-5.6
Colchicine use by people with gout not dispensed allopurinol	141	26.5	1,249	26.5	1.00	-0.1
NSAID use by people with gout	59	6.7	465	6.0	1.12	0.7
Serum urate test within six months following allopurinol dispensing	416	47.3	3,197	41.2	1.15	6.0

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 880 Māori aged 20–79 years were estimated to have gout in 2011, giving a crude prevalence of 4%, 65% higher than the prevalence in non-Māori. Nearly 40% of Māori with gout regularly received allopurinol, a preventive therapy to lower urate levels. Of those who received allopurinol, 27% had a lab test for serum urate levels within the following six months.

Table 55: Hospitalisations for gout, 25 years and over, Canterbury 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	29.6	(15.8, 55.2)	20	4.7	(3.3, 6.8)	6.23 (3.02, 12.84)	24.8
Male	10	85.2	(59.3, 122.4)	60	22.1	(18.4, 26.6)	3.86 (2.57, 5.79)	63.1
Total	13	57.4	(42.0, 78.5)	80	13.4	(11.4, 15.8)	4.27 (3.00, 6.09)	44.0

Source: NMDS

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

There were 13 hospital admissions for gout per year on average among Māori, more frequent among males than females. The rate of admission was 6 times as high for Māori females as for non-Māori females, or 25 more admissions per 100,000. Māori males had an admission rate close to 4 times as high as that of non-Māori males, or 63 more admissions per 100,000.

Hip fractures

Table 56: Hospitalisations for hip fractures, 65 years and over, Canterbury 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	89.4	(28.6, 279.0)	321	414.7	(383.3, 448.7)	0.22 (0.07, 0.67)	-325.3
Male	2	228.4	(102.5, 509.2)	137	268.9	(241.3, 299.6)	0.85 (0.38, 1.91)	-40.4
Total	3	158.9	(82.2, 307.2)	457	341.8	(320.6, 364.4)	0.46 (0.24, 0.90)	-182.9

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 half the rate of non-Māori.

Elective surgery

Table 57: Hospitalisations for hip replacements, 50 years and over, Canterbury 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	207.6	(132.2, 325.8)	295	270.2	(251.1, 290.8)	0.77	(0.49, 1.21)	-62.6
Male	9	261.9	(178.1, 385.0)	185	200.3	(183.2, 218.9)	1.31	(0.88, 1.94)	61.6
Total	15	234.7	(175.1, 314.7)	480	235.2	(222.3, 248.9)	1.00	(0.74, 1.35)	-0.5

Source: NMDS

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

On average, 15 Māori aged 50 years and over were admitted to hospital per year for a hip replacement, at the same rate as non-Māori.

Table 58: Publicly funded hospitalisations for cataract surgery, 45 years and over, Canterbury 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	21	463.6	(360.6, 595.9)	875	408.8	(390.4, 428.0)	1.13	(0.88, 1.46)	54.8
Male	24	519.7	(411.7, 656.1)	612	357.8	(339.6, 376.9)	1.45	(1.14, 1.84)	162.0
Total	44	491.6	(414.4, 583.3)	1488	383.3	(370.3, 396.7)	1.28	(1.08, 1.53)	108.4

Source: NMDS

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

On average 44 Canterbury Māori aged 45 years and over were admitted to hospital each year for cataract surgery. The rate was 28% higher for Māori than for non-Māori, or 108 more admissions per 100,000.

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 Canterbury Region as this data was not available for Canterbury DHB.

Hospitalisations

Table 59: All-cause hospitalisations, all ages, Canterbury 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	4,228	19,547.6	(19,207.2, 19,894.1)	52,830	20,103.8	(19,978.7, 20,229.7)	0.97 (0.95, 0.99)	-556.1
Male	3,214	14,103.5	(13,820.6, 14,392.2)	42,223	15,095.3	(14,984.9, 15,206.5)	0.93 (0.91, 0.95)	-991.8
Total	7,442	16,825.6	(16,603.6, 17,050.5)	95,053	17,599.5	(17,516.0, 17,683.4)	0.96 (0.94, 0.97)	-774.0

Source: NMDS

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

On average, there were approximately 7,440 Māori hospital admissions per year and over 95,000 non-Māori admissions. All-cause admission rates were 4% lower for Māori than for non-Māori, or 774 fewer admissions per 100,000.

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

Potentially avoidable hospitalisations

Table 60: Potentially avoidable hospitalisations, 0–74 years, Canterbury 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	802	3,744.0	(3,596.1, 3,898.1)	7,895	3,412.7	(3,359.5, 3,466.6)	1.10 (1.05, 1.15)	331.4
Male	803	3,538.4	(3,397.8, 3,684.8)	8,424	3,489.3	(3,436.3, 3,543.2)	1.01 (0.97, 1.06)	49.1
Total	1605	3,641.2	(3,538.6, 3,746.8)	16,319	3,451.0	(3,413.4, 3,489.1)	1.06 (1.02, 1.09)	190.2

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 1,600 Māori hospital admissions per year were potentially avoidable through population based prevention strategies, at a rate 6% higher than for non-Māori, or 190 more admissions per 100,000.

Table 61: Ambulatory care sensitive hospitalisations, 0–74 years, Canterbury 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	451	2,113.5	(2,002.8, 2,230.3)	4,281	1,928.4	(1,887.2, 1,970.4)	1.10 (1.03, 1.16)	185.1
Male	527	2,323.8	(2,210.4, 2,443.0)	4,736	2,015.9	(1,974.7, 2,057.9)	1.15 (1.09, 1.22)	307.9
Total	978	2,213.8	(2,134.2, 2,296.5)	9,017	1,967.9	(1,938.7, 1,997.4)	1.12 (1.08, 1.17)	246.0

Source: NMDS

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

On average, there were 978 ambulatory care sensitive hospitalisations per year among Canterbury Māori, at a rate 12% higher than the non-Māori rate, or 246 more admissions per 100,000.

Mortality

Table 62: Life expectancy at birth, Canterbury Region, 2012–2014

Gender	Māori		Non-Māori		Difference in years
	Years (95% credible interval)		Years (95% credible interval)		
Female	80.9	(79.7, 82.1)	83.5	(83.3, 83.7)	-2.6
Male	77.2	(76.1, 78.4)	80.0	(79.7, 80.2)	-2.8

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

Notes: This data is for the Canterbury Region (including Canterbury and South Canterbury District Health Boards). A map of Regional Council boundaries can be found [here](#). The credible interval is the 2.5th percentile and the 97.5th percentile, the years of expected 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. During 2012–2014, among residents of the Canterbury Region, life expectancy at birth was 80.9 years for Māori females, 2.6 years lower than for non-Māori females (83.5 years). For Māori males, life expectancy was 77.2 years, 2.8 years lower than that of non-Māori males (80.0 years).

Table 63: All-cause deaths, all ages, Canterbury 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	48	238.7	(218.2, 261.2)	1,821	153.7	(149.8, 157.6)	1.55 (1.42, 1.71)	85.1
Male	64	309.0	(285.8, 334.2)	1,652	219.0	(214.3, 223.8)	1.41 (1.30, 1.53)	90.0
Total	112	273.9	(258.2, 290.5)	3,474	186.3	(183.3, 189.4)	1.47 (1.38, 1.56)	87.6

Source: Mortality dataset, Ministry of Health.

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

There were 112 Māori deaths per year on average in Canterbury from 2008 to 2012. The Māori all-cause mortality rate was nearly 50% higher than the non-Māori rate, or 88 more deaths per 100,000.

Table 64: Leading causes of death for Māori, all ages, Canterbury 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								
IHD	7	31.9	(22.9, 44.3)	357	15.9	(14.9, 17.0)	2.00 (1.43, 2.80)	16.0
Lung cancer	6	27.8	(19.4, 39.8)	72	8.0	(7.1, 9.0)	3.48 (2.38, 5.09)	19.8
COPD	4	19.4	(12.6, 29.8)	98	6.5	(5.8, 7.3)	2.97 (1.91, 4.64)	12.9
Stroke	4	18.0	(11.6, 27.9)	230	10.9	(10.0, 11.8)	1.65 (1.06, 2.59)	7.1
Accidents	3	16.6	(10.3, 26.8)	72	15.6	(13.4, 18.2)	1.06 (0.64, 1.76)	1.0
Male								
IHD	13	57.7	(45.2, 73.8)	365	34.1	(32.2, 36.0)	1.69 (1.32, 2.18)	23.7
Accidents	9	41.6	(30.9, 56.1)	81	23.8	(21.1, 26.9)	1.75 (1.27, 2.41)	17.8
Lung cancer	4	19.1	(12.5, 29.0)	94	11.0	(10.0, 12.2)	1.73 (1.12, 2.66)	8.0
Suicide	4	16.9	(10.6, 27.0)	42	14.8	(12.8, 17.2)	1.14 (0.70, 1.86)	2.1
COPD	3	13.3	(8.0, 22.1)	98	8.3	(7.5, 9.2)	1.60 (0.95, 2.69)	5.0
Total								
IHD	20	44.8	(36.8, 54.5)	723	25.0	(23.9, 26.1)	1.79 (1.47, 2.19)	19.8
Accidents	12	29.1	(22.6, 37.5)	154	19.7	(17.9, 21.7)	1.48 (1.13, 1.94)	9.4
Lung cancer	10	23.4	(17.8, 30.8)	166	9.5	(8.8, 10.3)	2.46 (1.86, 3.27)	13.9
COPD	7	16.3	(11.8, 22.7)	196	7.4	(6.9, 8.0)	2.20 (1.57, 3.09)	8.9
Stroke	7	15.2	(10.8, 21.3)	359	10.8	(10.1, 11.5)	1.41 (1.00, 1.99)	4.4

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 women were ischaemic heart disease, lung cancer, chronic obstructive pulmonary disease (COPD), stroke, and accidents. The mortality rate for IHD was twice that of non-Māori women and the lung cancer and the COPD mortality rates were 3 times as high. Stroke mortality was two-thirds higher.

For Māori men, the leading causes of death were ischaemic heart disease, accidents, lung cancer, suicide and COPD. Māori men's mortality rates were 69% higher for IHD, 75% higher for accidents than for non-Māori men and 73% higher for lung cancer.

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 65: Potentially avoidable mortality, 0–74 years, Canterbury 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	30	148.4 (126.5, 174.2)		319	73.1 (68.7, 77.8)		2.03 (1.71, 2.41)	75.3
Male	40	180.6 (157.0, 207.7)		468	111.9 (106.5, 117.5)		1.61 (1.39, 1.87)	68.7
Total	70	164.5 (148.0, 182.8)		787	92.5 (89.0, 96.1)		1.78 (1.59, 1.99)	72.0

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 70 potentially avoidable Māori deaths per year in Canterbury on average, at a rate three-quarters higher than the non-Māori rate, or 72 more deaths per 100,000.

Table 66: Amenable mortality, 0–74 years, Canterbury 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	21	101.7 (83.8, 123.3)		212	49.9 (46.2, 53.8)		2.04 (1.66, 2.51)	51.8
Male	30	134.2 (114.1, 157.9)		321	76.9 (72.5, 81.6)		1.75 (1.47, 2.07)	57.3
Total	50	117.9 (104.1, 133.5)		533	63.4 (60.5, 66.4)		1.86 (1.63, 2.12)	54.5

Source: Mortality, Ministry of Health

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

Deaths amenable to health care were almost twice as frequent among Māori as non-Māori, or 55 more deaths per 100,000. There were 50 Māori deaths per year on average.

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 Canterbury Māori were falls; exposure to mechanical forces; complications of medical and surgical care; assault; transport accidents; and intentional self-harm.

Table 67: Hospitalisations for injury, all ages, Canterbury 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	288	1,354.2 (1,266.0, 1,448.6)	4,646	1,530.2 (1,496.4, 1,564.8)	0.88 (0.82, 0.95)	-176.0
Male	448	2,013.2 (1,906.9, 2,125.5)	5,237	2,064.5 (2,025.8, 2,103.9)	0.98 (0.92, 1.03)	-51.2
Total	736	1,683.7 (1,614.1, 1,756.4)	9,883	1,797.3 (1,771.6, 1,823.5)	0.94 (0.90, 0.98)	-113.6

Source: NMDS

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

On average, 736 Māori per year were hospitalised for injury at a rate 6% lower than non-Māori, or 114 fewer admissions per 100,000.

Table 68: Hospitalisations for assault, all ages, Canterbury 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	21	102.8 (80.3, 131.6)	84	42.9 (37.4, 49.1)	2.40 (1.81, 3.18)	59.9
Male	53	234.2 (200.0, 274.3)	290	140.3 (130.8, 150.5)	1.67 (1.40, 1.98)	93.9
Total	74	168.5 (147.5, 192.5)	374	91.6 (86.0, 97.5)	1.84 (1.59, 2.13)	76.9

Source: NMDS

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

On average 74 Māori per year were admitted to hospital for injury caused by assault, at a rate nearly twice the non-Māori rate, or 77 more admissions per 100,000. Males had higher admission rates than females.

Table 69: Deaths from injury, all ages, Canterbury 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	28.8 (19.9, 41.5)	93	23.0 (20.2, 26.0)	1.25 (0.85, 1.85)	5.8
Male	13	60.4 (47.2, 77.4)	129	40.9 (37.3, 44.8)	1.48 (1.14, 1.93)	19.6
Total	19	44.6 (36.3, 54.7)	222	31.9 (29.6, 34.4)	1.40 (1.12, 1.74)	12.7

Source: Mortality dataset, Ministry of Health.

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

On average 19 Canterbury Māori died from injuries per year, at a rate 40% higher than non-Māori, or 13 more deaths per 100,000. Mortality rates were higher for males than females.



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Appendix 1: Population projections

Table 70: Māori population projections, single year by age group, Canterbury DHB, 2013 to 2020

Projected Māori Ethnic Group Population by Age and Sex at 30 June 2014–33 (2013-Base)

*** Medium Projection : Assuming Medium Fertility, Medium Mortality, Medium Inter-Ethnic Mobility, and Medium Migration ***

Age	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	2013(Base)			2014			2015			2016		
0	550	490	1,040	540	510	1,050	540	510	1,050	540	510	1,040
1-4	2,170	2,130	4,300	2,180	2,130	4,310	2,180	2,110	4,290	2,190	2,090	4,280
5-9	2,450	2,350	4,810	2,530	2,410	4,940	2,680	2,530	5,210	2,760	2,640	5,400
10-14	2,250	2,130	4,380	2,270	2,190	4,460	2,240	2,180	4,420	2,220	2,180	4,400
15-19	2,350	2,070	4,430	2,340	2,090	4,440	2,340	2,150	4,490	2,320	2,170	4,490
20-24	2,200	2,010	4,210	2,290	2,030	4,320	2,300	2,000	4,310	2,340	2,000	4,350
25-29	1,580	1,500	3,080	1,630	1,560	3,180	1,760	1,650	3,400	1,820	1,710	3,520
30-34	1,300	1,360	2,660	1,340	1,380	2,730	1,360	1,370	2,730	1,400	1,390	2,790
35-39	1,280	1,310	2,580	1,270	1,290	2,550	1,270	1,330	2,600	1,270	1,370	2,640
40-44	1,440	1,430	2,870	1,400	1,410	2,810	1,370	1,390	2,760	1,330	1,350	2,680
45-49	1,260	1,220	2,480	1,350	1,240	2,590	1,390	1,270	2,660	1,420	1,330	2,750
50-54	1,140	1,050	2,190	1,130	1,130	2,260	1,170	1,180	2,340	1,200	1,180	2,380
55-59	870	780	1,650	920	820	1,740	950	880	1,830	1,010	930	1,940
60-64	670	570	1,240	710	610	1,320	770	630	1,390	770	670	1,440
65-69	430	390	830	470	430	900	500	470	970	560	500	1,060
70-74	280	240	520	300	270	570	320	290	610	350	310	650
75-79	140	150	290	150	160	310	180	180	360	210	210	420
80-84	60	90	160	80	100	170	90	100	200	90	110	200
85-89	30	30	60	30	40	80	40	50	90	40	60	100
90+	10	10	30	10	20	30	10	20	30	20	20	40
All Ages	22,500	21,300	43,800	23,000	21,800	44,800	23,400	22,300	45,700	23,900	22,700	46,600
	2017			2018			2019			2020		
0	540	510	1,040	540	510	1,050	540	510	1,060	540	520	1,060
1-4	2,190	2,050	4,240	2,170	2,060	4,230	2,170	2,060	4,230	2,170	2,070	4,240
5-9	2,730	2,710	5,440	2,730	2,640	5,370	2,730	2,660	5,390	2,720	2,630	5,350
10-14	2,340	2,200	4,540	2,440	2,350	4,790	2,510	2,390	4,910	2,650	2,510	5,160
15-19	2,280	2,170	4,450	2,250	2,170	4,420	2,260	2,210	4,470	2,230	2,190	4,420
20-24	2,330	2,010	4,340	2,300	1,970	4,260	2,280	1,980	4,260	2,260	2,040	4,300
25-29	1,920	1,770	3,690	1,970	1,810	3,780	2,050	1,830	3,880	2,060	1,790	3,850
30-34	1,460	1,420	2,880	1,540	1,470	3,010	1,570	1,520	3,100	1,690	1,610	3,300
35-39	1,270	1,370	2,640	1,270	1,350	2,620	1,320	1,370	2,680	1,330	1,350	2,680
40-44	1,260	1,320	2,570	1,250	1,290	2,550	1,240	1,270	2,510	1,240	1,310	2,550
45-49	1,440	1,380	2,820	1,410	1,410	2,820	1,370	1,380	2,750	1,330	1,370	2,700
50-54	1,220	1,180	2,400	1,230	1,200	2,430	1,320	1,210	2,530	1,350	1,240	2,590
55-59	1,070	990	2,060	1,110	1,020	2,130	1,090	1,100	2,200	1,130	1,150	2,280
60-64	790	700	1,490	830	760	1,590	880	800	1,680	900	850	1,750
65-69	600	540	1,140	630	550	1,180	670	590	1,260	720	600	1,320
70-74	360	330	700	400	370	780	440	400	840	460	440	900
75-79	250	210	460	250	220	470	270	250	520	290	260	550
80-84	110	130	240	120	140	260	130	150	270	150	160	310
85-89	40	70	110	50	80	130	60	80	140	70	90	160
90+	20	30	50	20	30	50	30	40	60	30	40	70
All Ages	24,200	23,100	47,300	24,500	23,400	47,900	24,900	23,800	48,700	25,300	24,200	49,500

These projections were derived in October 2014.

Source: Statistics New Zealand

Table 71: Total population projections, single year, by age group, Canterbury DHB, 2013 to 2020

Age	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	2013(Base)			2014			2015			2016		
0	3,190	2,940	6,130	2,970	2,810	5,780	3,040	2,880	5,910	3,070	2,910	5,980
1-4	13,300	12,770	26,060	13,190	12,650	25,840	12,820	12,360	25,180	12,710	12,030	24,730
5-9	16,130	15,360	31,490	16,640	15,780	32,420	17,200	16,330	33,540	17,440	16,710	34,140
10-14	15,950	15,320	31,270	15,990	15,450	31,440	15,920	15,450	31,370	15,960	15,470	31,430
15-19	17,960	16,200	34,160	18,180	16,530	34,710	18,390	16,820	35,220	18,280	16,820	35,100
20-24	19,870	17,160	37,040	20,910	17,600	38,520	21,690	17,790	39,480	22,140	18,050	40,190
25-29	16,190	15,210	31,390	17,240	16,090	33,330	18,400	17,070	35,470	19,370	17,760	37,140
30-34	14,950	15,290	30,240	15,680	15,730	31,410	16,260	16,120	32,390	16,930	16,550	33,480
35-39	15,460	16,160	31,620	15,200	16,140	31,340	15,310	16,200	31,510	15,360	16,410	31,770
40-44	18,030	19,290	37,320	17,830	19,230	37,050	17,580	19,110	36,690	17,210	18,490	35,700
45-49	17,910	18,610	36,520	18,230	18,730	36,960	18,420	19,090	37,510	18,590	19,530	38,110
50-54	18,220	18,570	36,790	18,370	18,980	37,350	18,510	19,230	37,740	18,350	19,200	37,550
55-59	15,760	16,170	31,930	16,310	16,740	33,060	16,870	17,280	34,150	17,340	17,820	35,160
60-64	14,010	14,310	28,320	14,180	14,580	28,760	14,470	14,890	29,360	14,930	15,340	30,270
65-69	11,560	12,100	23,660	12,340	12,900	25,240	12,990	13,640	26,630	13,530	14,100	27,630
70-74	8,420	9,240	17,670	8,810	9,520	18,320	9,150	9,820	18,980	9,460	10,120	19,580
75-79	5,880	6,960	12,840	6,100	7,270	13,380	6,430	7,690	14,120	6,900	8,160	15,060
80-84	4,440	5,850	10,290	4,450	5,760	10,210	4,490	5,700	10,190	4,450	5,710	10,160
85-89	2,480	3,880	6,360	2,490	3,940	6,420	2,590	4,060	6,650	2,720	4,180	6,910
90+	950	2,210	3,160	1,090	2,360	3,450	1,190	2,520	3,710	1,260	2,640	3,910
All Ages	250,700	253,600	504,300	256,200	258,800	515,000	261,800	264,000	525,800	266,000	268,000	534,000
	2017			2018			2019			2020		
0	3,090	2,930	6,030	3,110	2,950	6,060	3,140	2,970	6,110	3,180	3,010	6,190
1-4	12,540	11,850	24,390	12,370	11,770	24,150	12,440	11,840	24,280	12,520	11,910	24,440
5-9	17,270	16,720	33,990	17,030	16,380	33,420	16,530	15,970	32,500	16,030	15,550	31,580
10-14	16,380	15,600	31,980	16,830	16,000	32,830	17,190	16,270	33,470	17,600	16,680	34,280
15-19	17,990	16,650	34,640	17,720	16,480	34,200	17,580	16,430	34,000	17,330	16,240	33,570
20-24	22,300	18,220	40,510	22,210	18,240	40,450	22,060	18,240	40,300	21,910	18,210	40,120
25-29	20,190	18,220	38,400	20,840	18,440	39,280	21,360	18,370	39,730	21,640	18,070	39,700
30-34	17,570	17,030	34,590	18,070	17,430	35,500	18,690	17,920	36,610	19,470	18,560	38,030
35-39	15,560	16,520	32,080	16,030	16,740	32,770	16,510	16,930	33,440	16,870	17,070	33,940
40-44	16,680	17,850	34,530	16,250	17,270	33,510	15,770	17,030	32,800	15,670	16,890	32,560
45-49	18,670	19,810	38,490	18,440	19,910	38,350	18,070	19,690	37,760	17,660	19,390	37,060
50-54	18,110	19,010	37,130	18,050	18,870	36,910	18,210	18,840	37,060	18,250	19,040	37,300
55-59	17,760	18,370	36,130	18,150	18,760	36,910	18,190	19,050	37,250	18,210	19,180	37,390
60-64	15,380	15,780	31,160	15,610	16,190	31,800	16,070	16,660	32,730	16,500	17,090	33,590
65-69	13,590	14,160	27,740	13,690	14,320	28,000	13,780	14,510	28,300	14,000	14,730	28,730
70-74	10,070	10,880	20,950	10,910	11,730	22,640	11,640	12,490	24,130	12,210	13,160	25,370
75-79	7,380	8,520	15,900	7,470	8,700	16,170	7,780	8,920	16,700	8,050	9,160	17,210
80-84	4,510	5,870	10,380	4,620	5,980	10,600	4,790	6,240	11,030	5,050	6,590	11,640
85-89	2,750	4,180	6,940	2,820	4,190	7,010	2,850	4,130	6,980	2,900	4,080	6,980
90+	1,380	2,730	4,110	1,410	2,790	4,200	1,450	2,880	4,330	1,530	3,040	4,570
All Ages	269,100	270,900	540,000	271,600	273,100	544,800	274,100	275,400	549,500	276,600	277,700	554,200

These projections were derived in October 2014.

Source: Statistics New Zealand



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 72: 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 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 73: 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 74: 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 75: 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 76: 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 77: 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 78: 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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