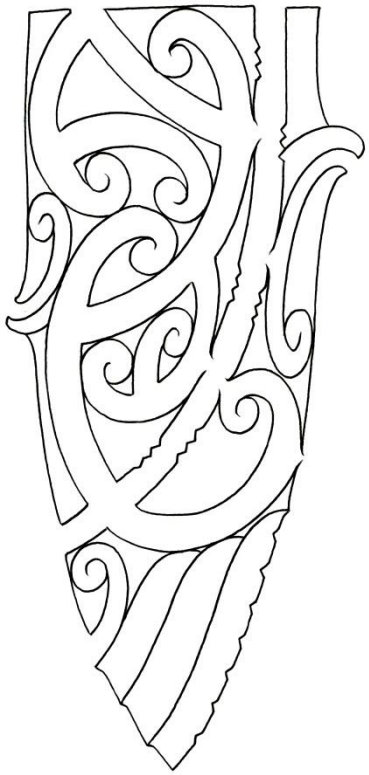
Lakes District Health Board

Māori Health Profile 2015

By Te Rōpū Rangahau Hauora a Eru Pōmare, University of Otago, Wellington
For the Ministry of Health

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.

Design by Graham Tipene
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TE RŌPŪ RANGAHAU HAUORA A ERU PŌMARE

UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND

MANATŪ HAUORA
MINISTRY OF HEALTH

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 awhi 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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Graham Tipene designed the rei puta and Somar Design developed the document template.

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Ngā mihi nui ki a koutou katoa.

Nā,

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University of Otago Wellington

Tiro whānui
– Lakes at a glance

Lakes population

- In 2013, 35,600 Māori lived in the Lakes District Health Board region, 35% of the District's total population.
- The Lakes Māori population is youthful, but showing signs of ageing. In 2013, half of the District's children and young people were Māori. The Māori population aged 65 years and over will increase by a third between 2013 and 2020.

Whānau ora – Healthy families

- In 2013, most Lakes Māori adults (84%) reported that their whānau was doing well, but 8% felt their whānau was doing badly. A small proportion (7%) found it hard to access whānau support in times of need, but most found it easy (83%).
- Being involved in Māori culture was important to the majority of Māori adults (78%). Spirituality was important to 76%.
- Practically all (99%) Māori from Lakes District had been to a marae at some time. Most (75%) had been to their ancestral marae, with over half (55%) stating they would like to go more often.
- Sixteen percent of Māori had taken part in traditional healing or massage in the last 12 months.
- Over a quarter of Lakes Māori (28%) could have a conversation about a lot of everyday things in te reo Māori in 2013.

Wai ora – Healthy environments

Education

- Most Māori children (93%) who started school in 2013 had participated in early childhood education.
- In 2013, 46% of Māori adults aged 18 years and over had at least a Level 2 Certificate, a higher proportion than in 2006 (40%). However the proportion was only three quarters that of non-Māori.

Work

- In 2013, 13% of Māori adults aged 15 years and over were unemployed, 2.4 times the non-Māori rate (5%).
- Most Māori adults (89%) do voluntary work.
- In 2013, Māori were more likely than non-Māori to look after someone who was disabled or ill, within or outside of the home.

Income and standard of living

- In 2013, two out of five children and adults in Māori households (defined as households with at least one Māori resident) were in households with low equivalised household incomes (under $15,172), compared to one in five children and adults in other households.
- In 2013, 10% of Māori adults in Lakes DHB reported putting up with feeling the cold a lot to keep costs down during the previous 12 months, 7% had gone without fresh fruit and vegetables, and 9% had postponed or put off visits to the doctor.

- Residents of Māori households were over 3 times as likely as residents of other households to live in a home without a motor vehicle (10% compared to 3%).
- People in Māori households were less likely to have access to telecommunications than those living in other households: 38% had no internet, 34% no telephone, 12% no mobile phone, and 4% had no access to any telecommunications at all.

Housing

- In Lakes DHB, the most common housing problems reported to be a big problem by Māori adults in 2013 were finding it hard to keep warm (17%), needing repairs (16%), and damp (14%).
- Over half (58%) of children in Māori households in Lakes were living in rented accommodation, nearly twice the proportion of children in other households (30%).
- Lakes residents of Māori households were 3.5 times as likely as others to be in crowded homes (i.e. requiring at least one additional bedroom) (21% compared to 6%).

Area deprivation

- Using the NZDep2013 index of small area deprivation, 54% of Lakes Māori lived in the two most deprived decile areas (deciles 9 and 10) compared to 25% of non-Māori.

Mauri ora – Healthy individuals

Pepi, tamariki – Infants and children

- On average, 899 Māori infants were born per year during 2009–2013, 57% of all live births in Lakes DHB. Seven percent of Māori and 5% of non-Māori babies had low birth weight.
- In 2013, 75% of Māori babies in Lakes were fully breastfed at 6 weeks.
- Eighty-one percent 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, also 90% at 24 months.
- In 2013, 71% of Lakes Māori children and 40% of non-Māori children aged 5 years had caries. At Year 8 of school, 69% of Māori children and 46% of non-Māori children had caries. Māori children under 15 years were 82% more likely than non-Māori to be hospitalised for tooth and gum disease.
- During 2011–2013, on average there were 93 hospital admissions per year for grommet insertions among Māori children (at a rate similar to that of non-Māori) and 64 admissions per year for serious skin infections at 2.7 times the non-Māori rate.
- Māori children under 15 years were 6 times as likely as non-Māori children to be hospitalised for acute rheumatic fever, with an average of four children admitted per year.
- Around 760 hospitalisations per year of Māori children were potentially avoidable through population-based health promotion and intersectoral actions, at a rate 46% higher than non-Māori.
- Five hundred 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 44% higher than that of non-Māori children, or nearly 1,280 more admissions per 100,000.

Rangatahi – Young adults

- There has been a significant increase in the proportion of Lakes 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. In 2013, 45% of Māori aged 20–24 years smoked regularly compared to 23% of non-Māori.
- By September 2014, 80% of Māori girls aged 17 years and 69% of those aged 14 years had received all three doses of the human papilloma virus (HPV) vaccine. Coverage was higher for Māori than for non-Māori.
- Among Māori youth aged 15–24 years, an average of three individuals per year were admitted to hospital with acute rheumatic fever, at a rate 12 times the non-Māori (or 50 more hospitalisations per 100,000).
- Rates of hospitalisation for injury from self-harm were lower for Māori than for non-Māori among those aged 15–24 years during 2011–2013 but 48% higher for Māori at ages 25–44 years. There were 23 Māori admissions per year among those aged 15–24 and 19 per year among those aged 25–44 years.

Pakeke – Adults

- Over half of Māori adults in Lakes District (57%) reported having excellent or very good health in 2013, and over a quarter (27%) reported having good health. One in six (16%) reported having fair or poor health.
- Smoking rates in Lakes are decreasing, but remain over twice as high for Māori (36%) as for non-Māori (17%) in 2013.

Circulatory system diseases

- Lakes Māori adults aged 25 years and over were 73% more likely than non-Māori to be hospitalised for circulatory system diseases (including heart disease and stroke) in 2011–2013.
- Māori were 71% more likely than non-Māori to be admitted with acute coronary syndrome, 62% more likely to have an angiography procedure, 43% more likely to have an angioplasty procedure, and 61% more likely to have a coronary artery bypass and graft.
- Heart failure admission rates were 5 times as high for Māori as for non-Māori.
- Stroke admission rates were 86% higher for Māori than non-Māori (with 57 Māori admitted per year), and admissions for hypertensive disease 2.8 times as high (with eight Māori admitted per year).
- Admissions for chronic rheumatic heart disease were 5 times as high for Māori as for non-Māori. Compared to non-Māori, heart valve replacements were 3 times as high among Māori females, but similar for Māori males.
- Māori under 75 years were 4 times as likely as non-Māori to die from circulatory system diseases in 2007–2011.

Diabetes

- In 2013, 5% of Māori and of non-Māori were estimated to have diabetes. Fifty-one percent of Māori aged 25 years and over who had diabetes were regularly receiving metformin or insulin, 79% were having their blood sugar monitored regularly, and 62% were being screened regularly for renal disease.
- In 2011–2013 Māori with diabetes were 7.7 times as likely as non-Māori to have a lower limb amputated.

Cancer

- Compared to non-Māori females, cancer incidence was 30% higher for Māori females and cancer mortality was 2.5 times as high. Among males, cancer incidence was similar for Māori and non-Māori while cancer mortality was 85% higher for Māori.
- Breast, lung, uterine, colorectal, cervical, and ovarian cancers were the most commonly registered among Lakes Māori women. Lung, breast, ovarian, and colorectal cancers were the most common causes of cancer death. The lung cancer registration rate was 4 times the rate of non-Māori women and the mortality rate 5 times as high. Breast cancer registrations were 49% higher for Māori while the mortality rate was 3.2 times as high as the non-Māori rate. Ovarian cancer was 2.8 times as common for Māori while the mortality rate was 5.7 times as high as non-Māori.
- Breast screening coverage of Māori women aged 45–69 years was 63% compared to 70% of non-Māori women.
- Cervical screening coverage of Māori women aged 25–69 years was 70% over 3 years and 88% over five years (compared to 82% and 96% of non-Māori respectively).
- Lung, prostate, colorectal, and liver cancers were the most common cancers among Lakes Māori men. Lung, stomach, prostate, colorectal and pancreatic cancers were the most common causes of cancer death for Māori men. Lung cancer registration and mortality rates were over 3 times as high as for non-Māori men. Stomach cancer mortality rates were 7 times as high for Māori as for non-Māori men.

Respiratory disease

- Māori aged 45 years and over were 4.8 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 for non-Māori in each age group.
- Māori under 75 years had over 3 times the non-Māori rate of death from respiratory disease in 2007–2011.

Mental disorders

- Māori were 50% more likely than non-Māori to be admitted to hospital for a mental disorder during 2011–2013. Schizophrenia was the most common disorder, followed by mood disorders and substance use disorders.

Gout

- In 2011 the prevalence of gout among Lakes Māori was estimated to be 6%, higher than the prevalence in non-Māori (4%).
- Thirty-two percent of Māori with gout regularly received allopurinol, a preventive therapy to lower urate levels. Of those who received allopurinol, 31% had a lab test for serum urate levels in the following six months. Half of Māori with gout were using non-steroidal anti-inflammatory medication.
- In 2011–2013 the rate of hospitalisations for gout was almost 8 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 19% higher for Māori than for non-Māori during 2011–2013.
- More than 2,500 Māori hospital admissions per year were potentially avoidable, with the rate 49% higher for Māori than for non-Māori. The ASH rate was 79% higher.

Mortality

- Life expectancy at birth during 2012–2014 was 76.5 years for Māori females in the Waikato Region (including Rotorua), and 76.7 years in the Bay of Plenty region (including Taupō) (7.5 and 7.8 years lower respectively than for non-Māori females). For Māori males, life expectancy was 72.2 years for Waikato residents and 72.3 years for Bay of Plenty residents (8.1 and 8.4 years lower than for their non-Māori counterparts).
- The all-cause mortality rate for Lakes Māori during 2008–2012 was 2.3 times the non-Māori rate.
- Leading causes of death for Māori females in 2007–2011 were ischaemic heart disease (IHD), lung cancer, COPD, stroke, and diabetes.
- Leading causes of death for Māori men were IHD, accidents, lung cancer, diabetes and COPD.
- Potentially avoidable mortality and mortality from conditions amenable to health care were around 3 times as high for Māori as for non-Māori in Lakes DHB.

Injuries

- The rate of hospitalisation due to injury was 29% higher for Lakes Māori than for non-Māori during 2011–2013. Males had higher rates of admission than females.
- The most common causes of injury resulting in hospitalisation were falls, complications of medical and surgical care, exposure to mechanical forces, transport accidents and assault.
- The rate of hospitalisation due to assault was 3.2 times as high for Māori as for non-Māori.
- Injury mortality was 2.4 times as high for Māori as for non-Māori in the Lakes District.

Contents

List of Tables and Figures

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/1amariki 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 ā Rohe o Ngā Moana, Lakes 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 Lakes DHB. Accompanying Excel tables also include data for the total Lakes 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 population[1].

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, and the Māori Health Plan Indicator reports provided to DHBs.

Te Tatauranga o te Iwi – Key demographics

In 2013, approximately 5% (35,600) of the country's total Māori population lived in the Lakes District Health Board. The total population of the DHB (103,200) made up 2% of the national population. In 2015, the Māori population in Lakes DHB is estimated to be 35,900 and the total Lakes population 103,700.[2]

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

	Māori			Non-Māori		Total DHB
Age group (years)	Number	Age distribution	% of DHB	Number	Age distribution	Number
0–14	11,840	33%	51%	11,510	17%	23,350
15–24	6,230	18%	47%	7,100	11%	13,330
25–44	8,440	24%	34%	16,340	24%	24,780
45–64	6,970	20%	26%	19,740	29%	26,710
65+	2,130	6%	14%	12,890	19%	15,020
Total	35,600	100%	35%	67,600	100%	103,200

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

Māori residents comprised 35% of the DHB population in 2013. The Māori population is relatively young, with a median age of 24.5 years, compared with 37.8 years for the total DHB population. In 2013, Māori comprised 51% of the DHB's children aged 0–14 years and 47% of those aged 15–24 years.

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

	Māori							Total DHB				
Year	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	35,600	35%	5%	33	61	6	24.5	103,200	37.8	2%	692,300	4,442,100
2018	36,200	35%	5%	32	61	7	25.1	104,200	38.9	2%	734,500	4,726,200
2023	36,600	35%	5%	30	61	9	26.4	104,600	39.7	2%	773,500	4,935,200
2028	36,800	35%	5%	29	60	11	27.6	104,600	40.9	2%	811,700	5,139,700
2033	37,000	36%	4%	28	59	13	28.6	103,800	42.4	2%	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 were aged 65 years and over in 2013 was 6% but is projected to increase to 13% in 2033. Between 2013 and 2020 the number of Māori aged 65 and over will increase by a third from 2,130 to 2,820 (see Appendix 1). In 2013 there were 670 Māori aged 75 years and over in Lakes DHB, with 207 living alone (see accompanying Excel tables).

[2] Population projections are provided in Appendix 1.

Whānau ora
– Healthy families

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

Whānau well-being

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

	Lakes DHBs			New Zealand	
How the whānau is doing	Estimated number	%	(95% CI)	%	(95% CI)
Well / Extremely well	20,500	84.3	(79.6, 88.9)	83.4	(82.5, 84.4)
Neither well nor badly	2,000*	8.0*	(4.9, 11.2)	10.3	(9.4, 11.2)
Badly / Extremely badly	2,000*	7.7*	(4.0, 11.4)	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%.

An estimated 84% of Māori adults residing in Lakes DHB reported that their whānau was doing well or extremely well in 2013. However 8% felt their whānau was doing badly or extremely badly.

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

	Lakes DHB			New Zealand	
Whānau description	Estimated number	%	(95% CI)	%	(95% CI)
Size of whānau					
10 or less	11,000	45.8	(39.8, 51.7)	53.7	(52.1, 55.3)
11 to 20	5,500	21.8	(16.8, 26.8)	22.6	(21.3, 24.0)
More than 20	8,000	32.4	(26.1, 38.8)	23.6	(22.4, 24.8)
Groups included in whānau					
Parents, partner, children, brothers & sisters	24,000	98.7	(97.5, 99.9)	94.6	(94.0, 95.2)
Aunts & uncles, cousins, nephews & nieces, other in-laws	15,000	61.9	(55.4, 68.5)	41.3	(39.8, 42.8)
Grandparents, grandchildren	12,000	49.1	(42.5, 55.7)	41.9	(40.5, 43.4)
Friends, others	4,000	15.9	(11.7, 20.1)	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 third of Lakes DHB Māori reporting whānau sizes of more than 20 people. Sixteen percent included friends in their description of whānau.

Whānau support

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

	Lakes DHB			New Zealand	
How easy is it to get help	Estimated number	%	(95% CI)	%	(95% CI)
Support in times of need					
Easy, very easy	20,000	82.7	(77.5, 87.9)	81.2	(80.1, 82.4)
Sometimes easy, sometimes hard	2,500*	10.4*	(6.2, 14.5)	12.7	(11.7, 13.6)
Hard / very hard	1,500**	6.9**	(3.2, 10.6)	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	18,500	75.8	(70.7, 80.8)	64.1	(62.7, 65.6)
Sometimes easy, sometimes hard	3,000*	11.6*	(7.9, 15.3)	16.9	(15.9, 18.0)
Hard / very hard	2,500*	10.6*	(6.6, 14.7)	14.7	(13.5, 15.9)
Don't need help	S	S		4.2	(3.7, 4.7)

Source: Te Kupenga 2013, Statistics New Zealand customised report.
Note: * Sampling error is 30% or more but less than 50%. ** Sampling error is 50 percent or more, but less than 100 percent
S shows the data was suppressed.

In 2013, the majority of Māori adults in Lakes DHB (83%) reported having easy access to whānau support in times of need. However, an estimated 1,500 (7%) had difficulty getting help.

Seventy-six percent found it easy to get help with Māori cultural practices, with 11% finding it hard or very hard.

Importance of participation in Māori culture

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

	Lakes DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Importance of being involved in Māori culture					
Very / quite	15,000	62.0	(55.6, 68.4)	46.3	(44.9, 47.6)
Somewhat	4,000*	15.8*	(10.8, 20.8)	24.2	(22.9, 25.6)
A little / not at all	5,500*	22.2	(15.7, 28.7)	29.5	(28.3, 30.7)
Importance of spirituality					
Very / quite	14,500	60.3	(53.6, 67.0)	48.7	(47.4, 49.9)
Somewhat	4,000*	16.0*	(10.4, 21.5)	17.0	(16.0, 18.0)
A little / not at all	5,500	23.7	(17.8, 29.7)	34.3	(33.1, 35.5)

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

Being involved in Māori culture was important to the majority (62%) of Māori adults, and somewhat important to a further 16%. Spirituality was important (very, quite or somewhat) to three-quarters of Lakes Māori (76%).

Te Reo Māori

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

Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Difference in percentage
Number	%	(95% CI)	Number	%	(95% CI)			
8,595	28.0	(27.5%, 28.5)	663	1.2	(1.1, 1.3)	**23.28**	**(21.15, 25.61)**	26.8

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, 28% of Māori in Lakes and 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, Lakes DHB, 2013

	Lakes DHB			New Zealand	
Language spoken at home	Estimated number	%	(95% CI)	%	(95% CI)
Māori is main language	1,500*	5.8*	(3.1, 8.4)	2.6	(2.2, 3.0)
Māori is used regularly	6,500	29.0	(22.5, 35.4)	20.5	(19.2, 21.8)

Source: Te Kupenga 2013, Statistics New Zealand customised report.
Note: * Sampling error is 30% or more but less than 50%.

Over a quarter of Lakes Māori (29%) reported that te reo Māori was used regularly in the home, and for 6% Māori was the main language.

Access to marae

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

	Lakes DHB			New Zealand	
Been to marae	Estimated number	%	(95% CI)	%	(95% CI)
At some time	24,000	98.7	(97.5, 100.0)	96.0	(95.5, 96.6)
In previous 12 months[(1)]	17,500	72.5	(65.9, 79.1)	58.2	(56.6, 59.7)
Ancestral marae at some time[(2)]	18,000	75.1	(69.1, 81.1)	62.3	(60.9, 63.7)
Ancestral marae in previous 12 months[(3)]	13,000	55.1	(48.1, 62.0)	33.6	(32.3, 34.9)
Like to go to ancestral marae more often[(2)]	10,500	55.0	(47.6, 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, almost all Māori in Lakes DHB (99%) had been to a marae, with most (73%) having been in the last 12 months. Three-quarters had been to at least one of their ancestral marae, with 55% having been in the previous 12 months. A similar proportion 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, Lakes DHB, 2013

Lakes DHB			New Zealand	
Estimated number	%	(95% CI)	%	(95% CI)
4,000	16.2	(11.9, 20.4)	10.9	(10.0, 11.7)

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

An estimated 4,000 Māori adults (16%) in Lakes took part in traditional healing or massage in 2013, a greater 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, Lakes DHB, 2006 and 2013

	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage
Year	Number	%	(95% CI)	Number	%	(95% CI)		
2006	7,242	40.3	(39.6, 41.0)	24,855	58.0	(57.5, 58.6)	**0.69 (0.68, 0.71)**	-17.7
2013	8,322	45.7	(45.0, 46.5)	26,151	63.4	(62.9, 63.9)	**0.72 (0.71, 0.73)**	-17.7

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 40% to 46% between 2006 and 2013. The absolute gap between Māori and non-Māori in Lakes remained the same (a difference of 18 percentage points).

Work

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

	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage
Labour force status	Number	%	(95% CI)	Number	%	(95% CI)		
2006								
Employed full-time	9,636	48.7	(48.1, 49.4)	26,289	58.6	(58.2, 59.1)	**0.83 (0.82, 0.84)**	-9.9
Employed part-time	2,946	14.0	(13.5, 14.5)	7,737	16.6	(16.3, 17.0)	**0.84 (0.81, 0.87)**	-2.7
Unemployed	1,635	8.4	(8.0, 8.8)	1,197	3.5	(3.3, 3.7)	**2.40 (2.22, 2.59)**	4.9
Not in the labour force	6,102	28.7	(28.1, 29.3)	14,946	21.3	(20.9, 21.7)	**1.35 (1.31, 1.39)**	7.5
2013								
Employed full-time	8,721	43.1	(42.5, 43.8)	24,450	55.2	(54.7, 55.6)	**0.78 (0.77, 0.80)**	-12.0
Employed part-time	2,961	13.7	(13.2, 14.2)	7,593	16.7	(16.3, 17.1)	**0.82 (0.79, 0.86)**	-3.0
Unemployed	2,445	12.6	(12.1, 13.1)	1,677	5.2	(5.0, 5.5)	**2.41 (2.26, 2.57)**	7.4
Not in the labour force	6,849	30.6	(30.0, 31.2)	15,558	23.0	(22.6, 23.4)	**1.33 (1.29, 1.37)**	7.6

Source: 2006 and 2013 Censuses, Statistics New Zealand
Notes Percentages are age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori. Employed part-time includes people working 1 hour per week or more. Employed full-time includes people who usually work 30 or more hours per week. Unemployed people are without a paid job, available for work and actively seeking work. People not in the labour force includes people in the working age population who are neither employed nor unemployed.

Between 2006 and 2013 there was a drop in the proportion of Māori adults employed full-time. The unemployment rate increased from 8% to 13%. Māori were 2.4 times as likely as non-Māori to be unemployed. There was also a small increase in the proportion of the working age population who were not in the labour force.

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

	Lakes DHB						New Zealand	
	Māori			Non-Māori				
ANZSIC Industry	Number	%	Rank	Number	%	Rank	%	Rank
Females								
Education and Training	870	16.0	1	2,001	13.7	2	12.9	2
Health Care and Social Assistance	831	15.3	2	2,535	17.4	1	17.1	1
Accommodation and Food Services	828	15.2	3	1,683	11.5	4	7.3	5
Retail Trade	600	11.0	4	1,818	12.5	3	11.6	3
Public Administration and Safety	318	5.9	5	558	3.8	9	5.0	7
Males								
Manufacturing	885	17.1	1	1,962	12.2	3	13.4	1
Agriculture, Forestry and Fishing	849	16.4	2	1,977	12.3	2	8.7	4
Construction	678	13.1	3	2,058	12.8	1	13.2	2
Transport, Postal and Warehousing	372	7.2	4	870	5.4	7	5.9	7
Retail Trade	321	6.2	5	1,485	9.2	4	8.3	5

Source: 2013 Census, Statistics New Zealand
Note: ANZSIC is the Australian and New Zealand Standard Industrial Classification

The main industries employing Māori women in Lakes during 2013 were education and training (16%); health care and social assistance (15%); and accommodation and food services (15%). These were followed by retail, and public administration and safety. For Māori men, 17% were employed in manufacturing; 16% in agriculture, forestry and fishing; and 13% in construction. Other leading industries included transport, postal and warehousing, and retail.

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

	Lakes DHB						New Zealand	
	Māori			Non-Māori				
ANZSCO Occupation	Number	%	Rank	Number	%	Rank	%	Rank
Females								
Professionals	1,161	21.2	1	3,705	25.3	1	26.7	1
Labourers	927	17.0	2	1,167	8.0	6	8.3	6
Community and Personal Service Workers	915	16.7	3	1,971	13.5	4	12.9	4
Clerical and Administrative Workers	861	15.7	4	2,886	19.7	2	19.5	2
Managers	660	12.1	5	2,286	15.6	3	14.4	3
Sales Workers	627	11.5	6	1,713	11.7	5	11.7	5
Technicians and Trades Workers	204	3.7	7	768	5.2	7	5.0	7
Machinery Operators and Drivers	114	2.1	8	138	0.9	8	1.5	8
Males								
Labourers	1,431	27.0	1	2,043	12.8	4	13.6	4
Machinery Operators and Drivers	933	17.6	2	1,506	9.4	5	9.1	5
Technicians and Trades Workers	900	17.0	3	3,369	21.1	2	18.5	3
Managers	711	13.4	4	4,119	25.8	1	22.7	1
Professionals	525	9.9	5	2,241	14.0	3	18.6	2
Community and Personal Service Workers	429	8.1	6	1,008	6.3	7	5.4	7
Sales Workers	201	3.8	7	1,131	7.1	6	7.1	6
Clerical and Administrative Workers	165	3.1	8	570	3.6	8	5.1	8

Source: 2013 Census, Statistics New Zealand
Note: Australian and New Zealand Standard Classification of Occupations (ANZSCO), major grouping

Among employed Māori women, the leading occupational groupings were professionals (21%); labourers (17%); and community and personal service workers (17%). The next most common occupations were clerical and administrative workers; managers; and sales workers.

Māori men were most likely to be employed as labourers (27%); machinery operators and drivers (18%); and technicians and trade workers (17%). The next most common occupations were managers; professionals; and community and personal service workers.

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

	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Difference in percentage
Unpaid work	Number	%	(95% CI)	Number	%	(95% CI)			
Any unpaid work	16,899	88.6	(88.1, 89.0)	41,790	89.7	(89.4, 90.1)	**0.99**	**(0.98, 0.99)**	-1.2
Looking after disabled/ill household member	2,447	12.7	(12.2, 13.2)	3,141	6.2	(5.9, 6.4)	**2.07**	**(1.95, 2.19)**	6.6
Looking after disabled/ill non-household member	2,323	11.6	(11.1, 12.0)	4,086	6.9	(6.7, 7.2)	**1.67**	**(1.58, 1.77)**	4.7

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 twice as likely than non-Māori to look after someone who was disabled or ill without pay within the home, and nearly 70% 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, Lakes DHB, 2013

	Lakes DHB			New Zealand	
Actions taken a lot to keep costs down	Estimated number	%	(95% CI)	%	(95% CI)
Put up with feeling the cold	2,500*	9.7*	(6.7, 12.6)	11.0	(10.2, 11.8)
Go without fresh fruit and vegetables	1,500*	7.2*	(4.7, 9.7)	5.4	(4.8, 6.0)
Postpone or put off visits to the doctor	2,000*	8.5*	(5.5, 11.4)	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 2,500 Māori adults (10%) in Lakes DHB reported putting up with feeling cold a lot to keep costs down during the previous 12 months, 1,500 (7%) had gone without fresh fruit and vegetables, and 2,000 (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, Lakes DHB, 2006 and 2013

	Māori families			Non-Māori families			Māori/non-Māori ratio (95% CI)		Difference in percentage
Year	Number	%	(95% CI)	Number	%	(95% CI)			
2006	2,865	21.8	(21.2, 22.6)	642	5.3	(4.9, 5.7)	**4.11**	**(3.78, 4.46)**	16.5
2013	3,072	23.9	(23.2, 24.7)	558	5.2	(4.8, 5.6)	**4.63**	**(4.25, 5.05)**	18.8

Source: Statistics New Zealand, 2006 and 2013 Censuses

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 an increase in the proportion of children living in Māori families where the only income was means-tested benefits between 2006 and 2013 (from 22% to 24%). Children in Māori families were 4.6 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, Lakes 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	4,494	42.9	(42.0, 43.8)	1,839	17.8	(17.1, 18.6)	**2.41 (2.30, 2.52)**	25.1
Adults 18 years & over	6,912	38.5	(37.8, 39.3)	5,766	19.6	(19.1, 20.2)	**1.96 (1.90, 2.03)**	18.9

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.

In 2013, 43% of the children in Māori households (almost 4,500) were in households with low equivalised household incomes in 2013, 2.4 times the proportion of other children. Two out of five adults in Māori households (over 6,900) lived in low income households, twice the proportion of adults in other households.

Table 19: Households with no access to a motor vehicle, Lakes 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	1,170	10.7	(10.1, 11.3)	1,212	5.4	(5.2, 5.8)	**1.96 (1.81, 2.11)**	5.2
2013	1,503	12.7	(12.1, 13.3)	1,281	5.7	(5.4, 6.0)	**2.23 (2.07, 2.39)**	7.0
People (% age-standardised)								
2006	2,970	8.2	(7.9, 8.5)	1,650	2.2	(2.0, 2.3)	**3.79 (3.51, 4.08)**	6.0
2013	3,774	10.3	(10.0, 10.6)	1,800	2.8	(2.6, 2.9)	**3.73 (3.47, 4.00)**	7.5

Source: 2006 and 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.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, 13% of Māori households had no access to a motor vehicle, twice the proportion of non-Māori households (6%). The proportion of people living in Māori households without a vehicle was 3.7 times 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, Lakes 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 cell/mobile phone	4,857	12.2	(11.8, 12.5)	6,612	9.7	(9.4, 10.0)	**1.25 (1.20, 1.31)**	2.4
No telephone	12,015	34.2	(33.7, 34.7)	5,478	13.7	(13.4, 14.1)	**2.49 (2.42, 2.57)**	20.5
No internet	13,947	37.6	(37.1, 38.1)	8,793	13.3	(13.0, 13.7)	**2.82 (2.73, 2.90)**	24.2
No tele-communications	1,329	3.6	(3.4, 3.8)	516	1.1	(1.0, 1.3)	**3.18 (2.84, 3.57)**	2.5

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.
% is age–sex-standardised to the 2001 Māori population.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, 38% of people in Māori households had no access to the internet, 34% had no landline, 12% did not have a cell phone, and almost 4% had no access to any telecommunications in the home. The largest absolute gaps between Lakes Māori and non-Māori households were in access to the internet (24 percentage points) and telephone (21 percentage points).

Housing

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

Housing problem (a big problem)	Lakes DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Too small	2,000*	7.3*	(4.0, 10.6)	5.3	(4.7 5.9)
Damp	3,500*	13.5*	(9.2, 17.7)	11.3	(10.5 12.2)
Hard to keep warm	4,000	16.6	(12.4, 20.8)	16.5	(15.4 17.7)
Needs repairs	4,000	16.3	(11.6, 21.1)	13.8	(12.7 14.9)
Pests in the house	2,000*	7.4*	(3.8, 11.0)	5.8	(5.1 6.5)

Source: Te Kupenga 2013, Statistics New Zealand customised report.
Note: An asterisk (*) shows the sampling error is 30% or more but less than 50%

Housing problems reported to be a big problem by Māori adults in Lakes DHB in 2013 included difficulty keeping the house warm (17%), needing repairs (16%), and damp (14%). Seven percent felt their house was too small, and 7% 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, Lakes DHB, 2013

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	5,880	50.4	(49.5, 51.3)	5,337	24.2	(23.6, 24.7)	**2.08 (2.02, 2.15)**	26.2
Children under 18 years (% age-standardised)	7,638	57.8	(57.0, 58.7)	3,303	29.7	(28.9, 30.6)	**1.94 (1.88, 2.01)**	28.1
Adults 18 years and over (% age-standardised)	11,013	50.6	(50.0, 51.3)	9,114	33.8	(33.2, 34.4)	**1.50 (1.47, 1.53)**	16.9

Source: 2013 Census, Statistics New Zealand
Note: A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, half of Māori households in Lakes were rented, compared to a quarter (24%) of non-Māori households.

Among children living in a Māori household, 58% (over 7,600) were living in rented homes, compared to 30% (3,303 children) in non-Māori households.

Half of adults living in Māori households were living in rented accommodation (around 11,000), compared to a third of adults living in non-Māori households (approximately 9,100).

Household crowding

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

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	1,335	11.3	(10.7, 11.9)	417	1.9	(1.7, 2.0)	**6.07 (5.45, 6.76)**	9.4
People (% age standardised)	7,107	20.5	(20.1, 21.0)	2,001	5.9	(5.7, 6.2)	**3.47 (3.30, 3.65)**	14.6

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 6 times as likely as non-Māori households to be classified as crowded using the Canadian National Occupancy Standard. This involved 1,300 homes needing at least one additional bedroom, affecting over 7,000 people. Residents of Māori households were three-and-a-half times 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, Lakes DHB, 2013

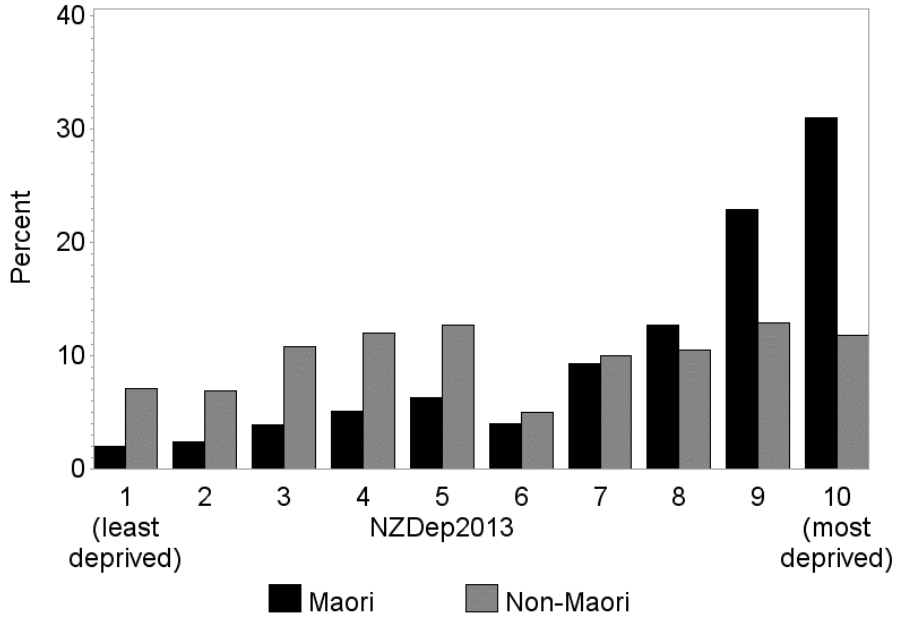
Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	285	2.4	(2.1, 2.7)	228	1.0	(0.9, 1.2)	**2.37 (2.00, 2.82)**	1.4
People (% age standardised)	675	1.9	(1.7, 2.0)	453	1.2	(1.0, 1.3)	**1.62 (1.43, 1.84)**	0.7

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, 2% of Māori households (285 homes) had no heating, compared to 1% of non-Māori households (228 homes).

Area deprivation

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



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

In 2013, over half of Lakes Māori (54%) lived in the two most deprived quintile (deciles 9 and 10) compared to 25% of non-Māori. Māori were two-and-a-half times as likely as non-Māori to live in the most deprived decile (31% compared to 12%), and less than a third as likely to live in the least deprived decile (2% compared to 7%) (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, Lakes DHB, 2009–2013

	Māori			Non-Māori				
Indicator	Ave. no. per year	% of live births (95% CI)		Ave. no. per year	% of live births (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Low birth-weight	62	6.9	(6.2, 7.7)	35	5.1	(4.4, 5.9)	**1.35 (1.12, 1.61)**	1.8
High birth-weight	17	1.9	(1.5, 2.4)	18	2.6	(2.1, 3.2)	**0.72 (0.54, 0.97)**	-0.7
Preterm	66	7.3	(6.6, 8.1)	42	6.2	(5.4, 7.1)	1.18 (1.00, 1.39)	1.1

Source: Birth registrations, Ministry of Health

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

During 2009 to 2013 a majority of Lakes infants were Māori, with 899 Māori infants born per year on average, 57% of all live births in the DHB (1,572 per year). On average, 62 Māori babies per year were born with low birthweight, 7% of all live births and one third higher than non-Māori babies. Seventeen per year (2%) were born with high birth-weight (a quarter lower than non-Māori). Sixty-six Māori babies per year (7%) were born prematurely.

Well child/Tamariki ora indicators

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

		Māori	
Indicator	Period	Count	%
1. Babies enrolled with a Primary Health Organisation (PHO) by three months old	20 Aug to 19 Nov 2013	108	81
11. Babies exclusively or fully breastfed at 2 weeks	January to June 2013	291	85
12. Babies exclusively or fully breastfed at 6 weeks		271	75
19. Mothers smoke-free two weeks postnatal		211	62
5. Children under 5 years enrolled with oral health services (PHO enrolled children)	2012	2,371	53
7. Children starting school who have participated in ECE	2013	800	93
15. Children with a healthy weight at 4 years, DHB of service	July to Dec 2013	288	68

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

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

Indicator 1: Source: PHO Enrolment Collection (numerator), National Immunisation Register enrolment (denominator)

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

During late 2013, 81% of Māori babies were enrolled with a PHO by three months of age. In the first half of 2013, 85% of Māori babies were breastfed at two weeks of age and 75% at six weeks. Sixty-two percent of Māori mothers were smoke-free two weeks after giving birth.

Among pre-school children enrolled with a PHO 53% of Māori were enrolled with oral health services in 2012. Nearly all (93%) 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, Lakes DHB, 1 Jan 2014 to 31 Dec 2014

	Māori		Non-Māori			
Milestone age	No. fully immunised for age	% fully immunised	No. fully immunised for age	% fully immunised	Māori/non-Māori ratio	Difference in percentage
6 months	544	70	551	85	0.82	-15
8 months	708	90	615	93	0.97	-3
12 months	732	93	618	94	0.99	-1
18 months	628	73	544	83	0.88	-10
24 months	804	90	582	91	0.99	-1
5 years	640	66	584	71	0.92	-6

Source: National Immunisation Register

In the 12 months to 31 December 2014, 70% of Māori infants aged six months were fully immunised, compared to 85% of non-Māori infants. However, 90% of Māori children aged eight months and 90% aged 24 months had completed their appropriate immunisations. At five years of age 66% of Māori children were fully immunised.

Oral health

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

	Māori				Non-Māori					
Age group	Total	% with caries (95% CI)		Mean DMFT	Total	% with caries (95% CI)		Mean DMFT	Māori/non-Māori ratio % with caries (95% CI)	Difference in percentage
Age 5	603	71	(67, 75)	3.4	534	40	(36, 44)	1.6	**1.78 (1.58, 2.00)**	31
Year 8	550	69	(65, 73)	2.5	702	46	(42, 50)	1.1	**1.50 (1.36, 1.65)**	23

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.

Seventy-one percent of Māori children aged five years in 2012 had caries, three-quarters higher than the proportion of non-Māori children. The mean number of decayed, missing or filled teeth (DMFT) was 3.4 for Māori compared to 1.6 for non-Māori. Of those in School Year 8 (aged around 12 years), 69% of Māori and 46% of non-Māori children had caries. The mean DMFTs for this age group were 2.5 for Māori and 1.1 for non-Māori.

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

	Māori			Non-Māori				
Gender	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	87	1,485.1	(1,315.4, 1,676.7)	36	655.8	(542.5, 792.8)	**2.26 (1.81, 2.84)**	829.3
Male	67	1,103.5	(961.3, 1,266.7)	45	766.3	(647.2, 907.2)	**1.44 (1.16, 1.79)**	337.2
Total	154	1,294.3	(1,181.5, 1,417.8)	81	711.0	(626.7, 806.7)	**1.82 (1.56, 2.13)**	583.2

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 154 hospital admissions per year on average for tooth and gum disease among Māori children, at a rate of 1,294 per 100,000, 82% higher than the non-Māori rate.

Middle ear disease

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

	Māori			Non-Māori				
Gender	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	38	654.5	(545.1, 785.8)	31	570.8	(465.2, 700.4)	1.15 (0.87, 1.51)	83.7
Male	55	893.6	(767.1, 1040.9)	50	863.5	(735.7, 1013.4)	1.03 (0.83, 1.29)	30.1
Total	93	774.0	(688.4, 870.3)	81	717.1	(632.2, 813.6)	1.08 (0.91, 1.28)	56.9

Source: NMDS

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

On average, 93 Māori children per year were admitted for insertion of grommets for otitis media, at a rate of 774 per 100,000, similar to that of non-Māori.

Healthy skin

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

	Māori			Non-Māori				
Gender	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	36	601.8	(497.9, 727.4)	13	236.7	(172.8, 324.1)	**2.54 (1.76, 3.67)**	365.1
Male	28	456.4	(368.5, 565.2)	9	158.5	(109.4, 229.6)	**2.88 (1.88, 4.42)**	297.9
Total	64	529.1	(459.1, 609.7)	22	197.6	(155.4, 251.2)	**2.68 (2.03, 3.54)**	331.5

Source: NMDS

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

There was an average of 64 admissions per year for serious skin infections among Māori children, with a rate 2.7 times the rate for non-Māori, or 332 more admissions per 100,000 children.

Acute rheumatic fever

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

	Māori			Non-Māori				
Age group and Gender	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
0–14 years								
Female	1	11.5	(2.9, 46.1)	<1	5.4	(0.8, 38.4)	2.13 (0.19, 23.53)	6.1
Male	3	54.8	(29.5, 101.9)	<1	5.0	(0.7, 35.7)	**10.91 (1.40, 85.24)**	49.8
Total	4	33.2	(18.8, 58.5)	1	5.2	(1.3, 20.9)	**6.36 (1.42, 28.45)**	28.0
15–24 years								
Female	2	63.9	(28.7, 142.3)	0	0.0			63.9
Male	1	44.3	(16.6, 118.1)	<1	8.7	(1.2, 61.5)	5.11 (0.57, 45.75)	35.7
Total	3	54.1	(29.1, 100.6)	<1	4.3	(0.6, 30.8)	**12.48 (1.60, 97.54)**	49.8

Source: NMDS

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

An average of four Māori children in Lakes DHB were admitted to hospital per year for acute rheumatic fever during 2011–2013, at a rate 6 times that of non-Māori children, or 28 more per 100,000. There were also three hospitalisations per year of Māori in the 15–24 year age group, at a rate 12.5 times that of non-Māori, or 50 more per 100,000.

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, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	349	5,919.7	(5,571.8, 6,289.3)	211	3,952.4	(3,656.0 , 4,272.9)	**1.50 (1.36, 1.65)**	1,967.3
Male	410	6,656.4	(6,294.5, 7,039.1)	269	4,653.9	(4,343.3, 4,986.8)	**1.43 (1.31, 1.56)**	2,002.4
Total	759	6,288.0	(6,034.9, 6,551.8)	480	4,303.2	(4,086.2, 4,531.7)	**1.46 (1.37, 1.56)**	1,984.9

Source: NMDS

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

There were approximately 760 potentially avoidable hospitalisations per year on average among Māori children aged 14 years and under in the Lakes DHB region. The admission rate was 46% higher for Māori than for non-Māori children, or 1,985 more admissions per 100,000 children per year.

Table 34: Ambulatory care sensitive hospitalisations for children aged 1 month to 14 years, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	246	4,183.0	(3,891.6, 4,496.3)	152	2,832.0	(2,583.0, 3,105.0)	**1.48 (1.31, 1.66)**	1,351.0
Male	254	4,145.1	(3,860.9, 4,450.2)	172	2,960.4	(2,715.3, 3,227.7)	**1.40 (1.25, 1.57)**	1,184.6
Total	500	4,164.0	(3,958.4, 4,380.4)	323	2,896.2	(2,719.2, 3,084.7)	**1.44 (1.33, 1.56)**	1,267.8

Source: NMDS

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

On average there were 500 admissions per year for ambulatory care sensitive conditions among Māori children, at a rate 44% higher than that of non-Māori children, or 1,268 more admissions per 100,000 children.

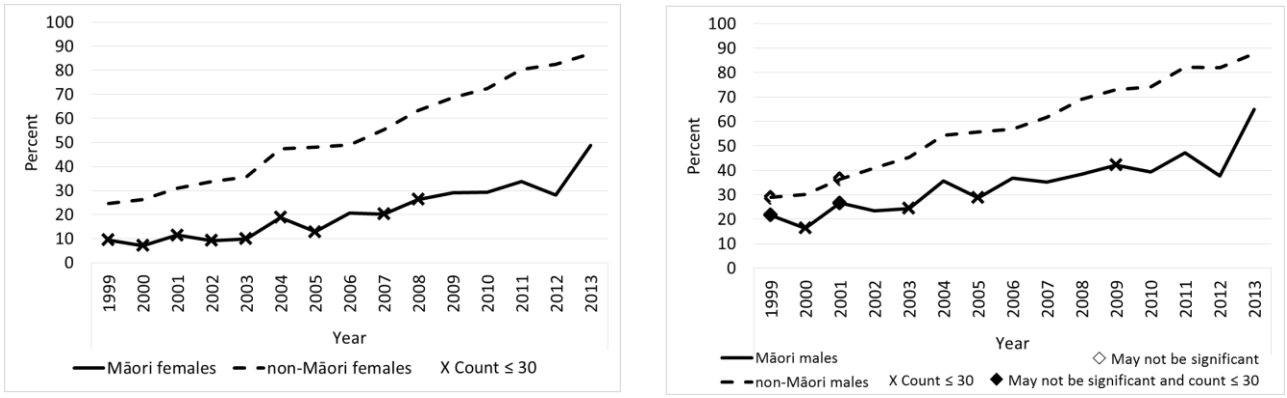
Mauri ora: Rangatahi – Young adults

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

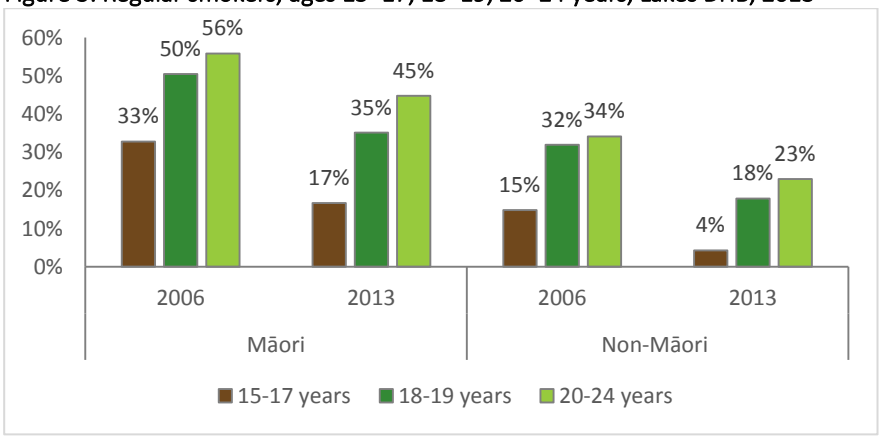
Figure 2: Trends in the proportion of students aged 14–15 years who have never smoked, by gender, Lakes DHB, 1999–2013



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 years who have never smoked (Figure 2). In 2013, approximately half of the Māori females in this age group and 65% of Māori males had never smoked.

Figure 3: Regular smokers, ages 15–17, 18–19, 20–24 years, Lakes 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 Lakes since 2006. However, smoking is relatively high among those aged 18–24 years, indicating a sizeable group start smoking in young adulthood. At ages 20–24 years, 45% 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, Lakes 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	254	68.6%	233	59.7%	1.15	8.9
1999	15	2012	272	82.4%	226	55.1%	1.50	27.3
1998	16	2011	232	59.5%	206	49.0%	1.21	10.4
1997	17	2010	297	80.3%	220	56.4%	1.42	23.9

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

By September 2014, 69% of Māori girls aged 14 years in 2014 had received three doses of the HPV vaccine, compared to 60% of non-Māori. Among Māori girls aged 17 in 2014, 80% were fully immunised, compared to 56% of non-Māori. Maori aged 16 years had the lowest coverage at 60%, and those aged 15 years had the highest at 82%.

Mental health

Table 36: Hospitalisations for injury from intentional self-harm, 15–24 and 25–44 years, Lakes 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	16	511.9	(385.8, 679.3)	26	764.1	(611.9, 954.0)	**0.67**	**(0.47,**	**0.96)**	-252.1
Male	7	216.5	(139.7, 335.7)	9	231.4	(157.5, 339.9)	0.94	(0.52,	1.68)	-14.9
Total	23	364.2	(287.2, 462.0)	35	497.7	(410.6, 603.3)	**0.73**	**(0.54,**	**0.99)**	-133.5
25–44 years										
Female	13	267.7	(194.6, 368.2)	13	157.2	(114.4, 216.1)	**1.70**	**(1.09,**	**2.67)**	110.4
Male	6	158.2	(99.4, 251.8)	10	130.7	(90.4, 189.0)	1.21	(0.67,	2.19)	27.5
Total	19	212.9	(163.4, 277.4)	23	144.0	(113.1, 183.2)	**1.48**	**(1.03,**	**2.12)**	69.0

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 23 admissions per year on average for injury from intentional self-harm. Females had a higher rate of admission than males. The overall rate for Māori was 27% lower than that for non-Māori.

Among Māori aged 25–44 years there were 19 admissions per year on average. Maori were admitted at a rate 48% higher than non-Māori, or 69 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 Lakes can be found in the accompanying Excel© tables labelled 'Death registrations' and 'Hospitalisations by principal diagnosis'. For example, the hospitalisations table shows disparities between Lakes Māori and non-Māori in rates of admission for viral hepatitis, epilepsy, bronchiectasis, gastric ulcers, pancreatitis, gallbladder disease, renal failure, burns, and head injuries.

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, Lakes DHB, 2013

	Lakes DHB			New Zealand	
Health status	Estimated number	%	(95% CI)	%	(95% CI)
Excellent	5,000*	21.0	(15.3, 26.7)	18.1	(16.8, 19.3)
Very good	8,500	36.0	(29.9, 42.2)	37.0	(35.5, 38.5)
Good	6,500	27.0	(21.9, 32.1)	28.5	(27.3, 29.7)
Fair / poor	4,000	15.9	(11.9, 20.0)	16.4	(15.3, 17.5)

Source: Te Kupenga 2013, Statistics New Zealand customised report.
Note: * Sampling error is 30% or more but less than 50%.

Over half of Māori adults (57%) in Lakes DHB reported having excellent or very good health in 2013, and another quarter (27%) described their health as good. Sixteen percent reported having fair or poor health status.

Smoking status

Table 38: Cigarette smoking status, 15 years and over, Lakes DHB, 2006 and 2013

	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Difference in proportion
Smoking status	Number	%	(95% CI)	Number	%	(95% CI)			
2006									
Regular smoker	8,560	45.5	(44.8, 46.2)	9,561	23.9	(23.4, 24.4)	**1.90**	**(1.86, 1.95)**	21.6
Ex-smoker	3,486	17.4	(16.9, 17.9)	12,324	20.2	(19.9, 20.6)	**0.86**	**(0.83, 0.89)**	-2.8
Never smoked	6,977	37.1	(36.4, 37.7)	25,680	55.8	(55.3, 56.4)	**0.66**	**(0.65, 0.68)**	-18.8
2013									
Regular smoker	6,876	36.3	(35.6, 37.0)	6,603	16.6	(16.1, 17.0)	**2.19**	**(2.12, 2.26)**	19.7
Ex-smoker	4,527	20.9	(20.4, 21.5)	12,762	20.2	(19.8, 20.6)	**1.04**	**(1.00, 1.07)**	0.7
Never smoked	8,271	42.8	(42.1, 43.5)	27,777	63.2	(62.7, 63.7)	**0.68**	**(0.67, 0.69)**	-20.4

Source: 2006 and 2013 Censuses, Statistics New Zealand
Notes: Regular smokers smoke one or more cigarettes per day. % is age-standardised to the 2001 Māori population.
Ratios in bold show a statistically significant difference between Maori and non-Maori rates.

Between 2006 and 2013 the proportion of Māori adults who smoked cigarettes regularly decreased from 46% to 36%. There was a corresponding increase in those who have never smoked and an increase in ex-smokers. However, Māori remained more than twice as likely as non-Māori to smoke regularly.

Heart disease and stroke

Table 39: Hospitalisations for circulatory system diseases, 25 years and over, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	236	1,806.1	(1,673.5, 1,949.3)	623	918.6	(862.4, 978.5)	**1.97 (1.78, 2.17)**	887.5
Male	275	2,680.7	(2,496.9, 2,878.1)	828	1,679.9	(1,596.0, 1,768.3)	**1.60 (1.46, 1.74)**	1,000.8
Total	511	2,243.4	(2,128.9, 2,364.1)	1,451	1,299.3	(1,248.4, 1,352.3)	**1.73 (1.62, 1.84)**	944.1

Source: NMDS

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

During 2011 –2013, an average of 511 Lakes Māori were admitted to hospital per year for diseases of the circulatory system (including heart disease and stroke), at a rate 73% higher than non-Māori, or 944 more admissions per 100,000.

Table 40: Ischaemic heart disease indicators, 25 years and over, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Ischaemic heart disease admissions								
Female	60	459.3	(395.0, 533.9)	149	193.1	(172.0, 216.7)	**2.38 (1.97, 2.88)**	266.2
Male	84	773.3	(681.8, 877.2)	287	573.1	(529.2, 620.8)	**1.35 (1.16, 1.57)**	200.2
Total	144	616.3	(559.4, 679.0)	436	383.1	(358.5, 409.4)	**1.61 (1.43, 1.81)**	233.2
Angiography procedures								
Female	36	293.5	(242.0, 356.0)	77	131.8	(112.7, 154.0)	**2.23 (1.74, 2.86)**	161.8
Male	52	499.6	(425.2, 587.0)	165	358.3	(323.2, 397.1)	**1.39 (1.15, 1.69)**	141.4
Total	88	396.6	(350.3, 449.0)	242	245.0	(224.8, 267.1)	**1.62 (1.39, 1.88)**	151.6
Angioplasty procedures								
Female	9	67.7	(46.3, 99.2)	20	31.8	(23.4, 43.3)	**2.13 (1.30, 3.47)**	35.9
Male	16	152.3	(114.6, 202.3)	54	122.1	(102.4, 145.6)	1.25 (0.89, 1.74)	30.2
Total	25	110.0	(87.5, 138.3)	74	77.0	(66.0, 89.7)	**1.43 (1.09, 1.88)**	33.0
Coronary Artery Bypass Graft (CABG)								
Female	6	43.1	(26.6, 69.7)	7	9.7	(6.1, 15.5)	**4.44 (2.26, 8.70)**	33.4
Male	8	73.6	(49.5, 109.5)	32	62.9	(50.1, 79.0)	1.17 (0.74, 1.85)	10.7
Total	14	58.3	(42.9, 79.3)	39	36.3	(29.5, 44.7)	**1.61 (1.11, 2.33)**	22.0
Acute coronary syndrome admissions								
Female	49	368.5	(312.2, 435.1)	114	140.5	(122.8, 160.7)	**2.62 (2.12, 3.25)**	228.1
Male	63	589.8	(510.0, 682.2)	208	419.9	(382.2, 461.4)	**1.40 (1.18, 1.67)**	169.9
Total	112	479.2	(429.3, 534.9)	322	280.2	(259.1, 303.0)	**1.71 (1.49, 1.96)**	199.0

Source: NMDS.

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

On average, 144 Māori per year were admitted to hospital for ischaemic heart disease (IHD), at a rate 61% higher than non-Māori. The difference was greater between Māori and non-Māori women. Of those Māori admitted for IHD, 112 per year were admitted with acute coronary syndrome (ACS), a rate 71% higher than non-Māori (2.6 times as high for Māori females, 40% higher for Māori males).

There were 88 angiography procedures conducted for Māori patients per year on average, at a rate 62% higher than for non-Māori. On average, 16 Māori men and 9 Māori women per year had angioplasty procedures, with the rate

for Māori women twice the non-Māori rate. Fourteen Māori per year had a CABG, at a rate 61% higher than for non-Māori.

Table 41: Hospitalisations for heart failure, stroke, and hypertensive disease, 25 years and over, Lakes DHB, 2011–2013

	Māori			Non-Māori					
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)		Rate difference
Heart failure									
Female	40	276.7	(230.5, 332.3)	65	45.4	(36.9, 56.0)	**6.09**	**(4.62, 8.03)**	231.3
Male	46	406.8	(342.8, 482.7)	68	88.8	(75.6, 104.2)	**4.58**	**(3.63, 5.79)**	318.0
Total	86	341.7	(301.3, 387.6)	133	67.1	(59.1, 76.2)	**5.09**	**(4.26, 6.09)**	274.6
Stroke									
Female	32	238.4	(193.5, 293.8)	93	114.1	(96.2, 135.3)	**2.09**	**(1.60, 2.74)**	124.3
Male	26	240.3	(190.4, 303.4)	94	143.8	(122.9, 168.2)	**1.67**	**(1.26, 2.21)**	96.6
Total	57	239.4	(204.7, 279.9)	187	128.9	(114.9, 144.7)	**1.86**	**(1.53, 2.26)**	110.4
Hypertensive disease									
Female	5	42.5	(25.0, 72.3)	9	16.8	(9.8, 28.7)	**2.54**	**(1.19, 5.41)**	25.8
Male	3	26.1	(13.0, 52.7)	4	7.7	(4.3, 13.8)	**3.41**	**(1.37, 8.50)**	18.5
Total	8	34.3	(22.5, 52.4)	14	12.2	(8.1, 18.5)	**2.81**	**(1.56, 5.08)**	22.1

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

There were 86 admissions per year on average for Māori with heart failure, at 5 times the rate for non-Māori, or 275 more admissions per 100,000. Men were more likely to be admitted than women.

On average, 57 Māori per year were admitted for stroke, at a rate 86% higher than that of non-Māori, or 110 more admissions per 100,000.

Eight Māori per year on average were admitted for hypertensive disease, at a rate 2.8 times the non-Māori rate.

Table 42: Hospitalisations for chronic rheumatic heart disease and heart valve replacements, 25 years and over, Lakes DHB, 2011–2013

	Māori			Non-Māori					
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)		Rate difference
Chronic rheumatic heart disease									
Female	6	44.7	(27.5, 72.8)	8	11.8	(6.9, 20.2)	**3.80**	**(1.84, 7.87)**	33.0
Male	5	55.1	(32.8, 92.6)	4	7.7	(4.1, 14.5)	**7.12**	**(3.15, 16.06)**	47.3
Total	11	49.9	(34.8, 71.6)	11	9.7	(6.5, 14.7)	**5.12**	**(2.97, 8.83)**	40.2
Heart valve replacements									
Female	4	31.4	(17.5, 56.4)	7	10.5	(6.1, 18.2)	**2.99**	**(1.34, 6.68)**	20.9
Male	2	23.3	(10.2, 53.4)	11	23.0	(14.9, 35.6)	1.01	(0.40, 2.58)	0.3
Total	6	27.4	(16.8, 44.6)	18	16.8	(11.9, 23.7)	1.63	(0.90, 2.96)	10.6

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

On average, there were 11 hospital admissions per year for Māori with chronic rheumatic heart disease, at a rate 5 times that of non-Māori. There was an average of six admissions per year for heart valve replacements in Māori aged 25 years and over, Four of these were female, at 3 times the rate of non-Māori females.

Table 43: Early deaths from circulatory system disease, Lakes DHB, 2007–2011

	Māori			Non-Māori					
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)		Rate difference
Female	18	75.1	(61.1, 92.4)	13	14.3	(10.7, 19.3)	**5.24**	**(3.65, 7.52)**	60.8
Male	22	103.1	(85.2, 124.7)	28	29.9	(24.7, 36.1)	**3.45**	**(2.64, 4.52)**	73.2
Total	40	89.1	(77.4, 102.5)	41	22.1	(18.8, 26.0)	**4.03**	**(3.26, 4.99)**	67.0

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 40 Māori died early from cardiovascular disease per year during 2007–2011, at a rate 4 times that of non-Māori, or 67 more deaths per 100,000.

Diabetes

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

	Māori		Non-Māori			
Indicator	Count	% (crude)	Count	% (crude)	Māori/non-Māori ratio	Difference in percentage
Prevalence of diabetes (all ages)	1,909	5.3	3,488	5.2	1.02	0.1
People with diabetes regularly receiving metformin or insulin, 25+	977	51.2	1,825	52.3	0.98	-1.1
People with diabetes having regular Hb1Ac monitoring, 25+	1,506	78.9	2,838	77.7	1.02	1.2
People with diabetes having regular screening for renal disease, 25+	1,180	61.8	2,180	62.5	0.99	-0.7

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 1,900 Māori in Lakes were estimated to have diabetes in 2013, giving a crude prevalence of 5.3%. The prevalence has not been adjusted for age. Half (51%) of Māori with diabetes were regularly receiving metformin or insulin. Seventy-nine percent were having regular monitoring of blood glucose levels and 62% were being screened regularly for renal disease.

Table 45: Hospitalisations for lower limb amputations for people with concurrent diabetes, 15 years and over, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	5	35.0	(21.1, 58.2)	2	2.9	(1.2, 7.3)	**12.06 (4.23, 34.35)**	32.1
Male	5	28.5	(16.7, 48.6)	5	5.4	(3.0, 9.6)	**5.28 (2.41, 11.57)**	23.1
Total	10	31.8	(22.0, 45.9)	7	4.2	(2.5, 6.8)	**7.65 (4.13, 14.15)**	27.6

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

On average ten Māori per year with concurrent diabetes had lower limbs amputated, at a rate 7.7 times that of non-Māori.

Cancer

Table 46: Most common cancer registrations for Māori by site, all ages, Lakes 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	62	244.7	(218.4, 274.3)	184	187.9	(172.3, 205.0)	**1.30**	**(1.13,**	**1.50)**	56.8
Breast	21	85.8	(70.4, 104.7)	51	57.6	(49.7, 66.7)	**1.49**	**(1.16,**	**1.91)**	28.2
Lung	14	49.5	(38.9, 63.0)	16	12.2	(9.4, 15.8)	**4.08**	**(2.85,**	**5.82)**	37.4
Uterine	4	15.0	(9.6, 23.4)	5	4.8	(3.0, 7.6)	**3.11**	**(1.64,**	**5.89)**	10.2
Colorectal	4	13.5	(8.5, 21.5)	26	20.6	(16.4, 25.9)	0.66	(0.39,	1.10)	-7.1
Cervical	2	12.2	(6.9, 21.6)	3	6.7	(3.7, 12.1)	1.82	(0.80,	4.16)	5.5
Ovarian	2	8.6	(4.7, 15.6)	5	3.1	(1.9, 4.8)	**2.82**	**(1.33,**	**5.98)**	5.6
Male										
All cancers	49	217.1	(191.1, 246.6)	219	203.9	(189.0, 220.0)	1.06	(0.92,	1.24)	13.2
Lung	10	40.9	(30.9, 54.2)	17	12.5	(9.9, 15.9)	**3.26**	**(2.26,**	**4.71)**	28.4
Prostate	10	40.0	(30.1, 53.2)	71	60.0	(53.7, 67.1)	**0.67**	**(0.49,**	**0.90)**	-20.0
Colorectal	6	24.1	(16.7, 34.8)	30	24.6	(19.9, 30.3)	0.98	(0.64,	1.50)	-0.4
Liver	3	11.4	(6.6, 19.7)	2	1.7	(0.9, 3.3)	**6.62**	**(2.85,**	**15.40)**	9.7

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 62 cancer registrations per year on average among Māori females, at a rate 30% higher than for non-Māori females. The most common cancers registered for Māori females were breast (34% of all cancers) and lung (23%), followed by uterine, colorectal, cervical, and ovarian cancers. Registration rates were higher for Māori than non-Māori women for breast (49% higher), lung (4 times as high), uterine (3 times as high), and ovarian cancers (2.8 times as high).

Among Māori males there were 49 cancer registrations per year on average, at a similar rate to non-Māori. Lung (20% of all cancers) and prostate (20%) were the most common, followed by colorectal and liver cancers. Rates were higher for Māori than non-Māori males for lung cancer (3.3 times as high) and liver cancer (6.6 times), and 33% lower for prostate cancer.

Table 47: Most common cancer deaths for Māori by site, all ages, Lakes 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	33	125.4	(107.4, 146.4)	72	51.0	(44.0, 59.2)	**2.46**	**(1.98,**	**3.05)**	74.4
Lung	10	37.2	(28.1, 49.4)	12	7.0	(5.1, 9.6)	**5.33**	**(3.48,**	**8.16)**	30.3
Breast	6	22.4	(15.5, 32.5)	9	7.1	(5.0, 10.0)	**3.18**	**(1.90,**	**5.31)**	15.4
Ovarian	2	9.5	(5.4, 16.9)	3	1.7	(1.0, 3.0)	**5.66**	**(2.54,**	**12.64)**	7.9
Colorectal	2	7.5	(4.1, 14.0)	12	8.3	(5.9, 11.7)	0.90	(0.44,	1.84)	-0.8
Male										
All cancers	28	126.9	(107.3, 150.0)	94	68.5	(61.0, 77.0)	**1.85**	**(1.51,**	**2.27)**	58.3
Lung	10	42.5	(32.0, 56.3)	17	11.8	(9.4, 14.9)	**3.60**	**(2.50,**	**5.18)**	30.7
Stomach	3	12.9	(7.6, 22.0)	3	1.8	(0.8, 3.9)	**7.18**	**(2.79,**	**18.50)**	11.1
Prostate	3	11.6	(6.9, 19.7)	15	7.5	(5.8, 9.6)	1.56	(0.87,	2.79)	4.2
Colorectal	2	9.9	(5.5, 17.8)	14	9.8	(7.2, 13.2)	1.01	(0.52,	1.96)	0.1
Pancreas	2	8.0	(4.1, 15.4)	5	3.3	(2.2, 5.2)	**2.38**	**(1.08,**	**5.27)**	4.6

Source: Death registrations, Ministry of Health

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

For Māori females, deaths from cancer comprised a third of all deaths, with a rate 2.5 times the rate for non-Māori females. Lung cancer was the most common cause of cancer death (30% of all cancer deaths), followed by breast, ovarian, and colorectal cancers. The mortality rate for lung cancer was 5 times the non-Māori rate, or 30 more deaths per 100,000; breast cancer mortality was 3 times the rate for non-Māori or 15 more deaths per 100,000, and ovarian cancer mortality over 5 times the non-Māori rate, or eight more deaths per 100,000.

For Māori males, cancer deaths accounted for 27% of all deaths, with a rate 85% higher than that of non-Māori males. Lung cancer was the most common cause of cancer death for Māori males, comprising 35% of all cancer deaths, at a rate over 3 times that of non-Māori males, or 31 more deaths per 100,000. Stomach cancer was the second leading cause of cancer death, making up 10% of all cancer deaths among Māori males, at a rate 7 times the non-Māori rate, or 11 more deaths per 100,000. Prostate and colorectal cancers were the next leading causes of death, followed by pancreatic cancer for which the mortality rate as over twice the non-Māori rate, or five more deaths per 100,000.

Breast and cervical cancer screening

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

Māori			Non-Māori		
Number screened	Eligible population	% screened	Number screened	Eligible population	% screened
2,684	4,270	62.9	8,655	12,335	70.2

Source: National Screening Unit, Ministry of Health

BreastScreen Aotearoa provides free mammography screening for breast cancer to women aged 45 to 69 years, with a target of at least 70% of eligible women screened every two years. During the two years to 31 December 2014, 63% of eligible Māori women and 70% of non-Māori women in Lakes had been screened.

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

Māori					Non-Māori				
Eligible population	Women screened in last 5 years	5-year coverage %	Women screened in last 3 years	3-year coverage %	Eligible population	Women screened in last 5 years	5-year coverage %	Women screened in last 3 years	3-year coverage %
8,044	7,086	88.1	5,597	69.6	18,069	17,402	96.3	14,751	81.6

Source: National Screening Unit, Ministry of Health
Note: Population is adjusted for hysterectomy.

Among women aged 25 to 69 years, 88% of Māori and 96% of non-Māori had had a cervical smear test during the five years prior to 31 December 2014. The three year cervical screening coverage was 70% for Māori women and 82% 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, Lakes 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	33	554.7	(455.0, 676.2)	20	372.4	(289.1, 479.7)	**1.49**	**(1.08, 2.05)**	182.3
Male	53	854.9	(731.4, 999.2)	25	418.6	(333.2, 525.9)	**2.04**	**(1.55, 2.69)**	436.3
Total	85	704.8	(623.5, 796.7)	45	395.5	(333.7, 468.6)	**1.78**	**(1.45, 2.20)**	309.3
15–34 years									
Female	26	465.9	(372.4, 582.8)	7	105.2	(69.1, 160.1)	**4.43**	**(2.75, 7.13)**	360.7
Male	6	135.0	(85.5, 213.3)	5	64.5	(38.2, 108.9)	**2.10**	**(1.04, 4.20)**	70.6
Total	32	300.4	(245.6, 367.6)	12	84.8	(61.1, 117.7)	**3.54**	**(2.41, 5.21)**	215.6
35–64 years									
Female	30	547.9	(443.0, 677.6)	24	176.6	(136.9, 227.9)	**3.10**	**(2.23, 4.32)**	371.3
Male	9	202.0	(136.6, 298.8)	11	95.3	(66.6, 136.4)	**2.12**	**(1.25, 3.60)**	106.7
Total	39	375.0	(310.8, 452.4)	36	136.0	(110.5, 167.4)	**2.76**	**(2.08, 3.65)**	239.0
65 years and over									
Female	4	333.8	(183.6, 607.1)	10	135.2	(91.8, 199.1)	**2.47**	**(1.21, 5.03)**	198.6
Male	0	0.0		2	30.8	(12.7, 74.6)	0.00		-30.8
Total	4	166.9	(91.8, 303.5)	12	83.0	(58.2, 118.4)	**2.01**	**(1.00, 4.03)**	83.9

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

There were 85 hospital admissions for asthma per year among Māori children aged 0–14 years, at a rate almost 80% higher than that of non-Māori. Māori aged 15–34 years had an average of 32 admissions per year with a rate 3.5 times as high as for non-Māori. Among Māori aged 35–64 years, there were 39 admissions per year on average, at a rate 2.8 times the rate of non-Māori. Older Māori aged 65 years and over were admitted at a rate twice the non-Māori rate, with four admissions per year on average.

Table 51: Hospitalisations for chronic obstructive pulmonary disease (COPD), 45 years and over, Lakes 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	110	2,188.0	(1,962.7, 2,439.2)	114	372.1	(327.7, 422.5)	**5.88**	**(4.98, 6.95)**	1,815.9
Male	71	1,627.3	(1,420.8, 1,863.8)	130	429.2	(384.6, 479.0)	**3.79**	**(3.18, 4.51)**	1,198.1
Total	181	1,907.6	(1,752.1, 2,077.0)	244	400.6	(368.6, 435.4)	**4.76**	**(4.23, 5.36)**	1,507.0

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

There were 181 hospitalisations per year on average for Māori with COPD, at a rate 4.8 times that of non-Māori, or just over 1,500 more admissions per 100,000. Māori women had a higher rate of admission than Māori men, and a greater disparity with non-Māori women (5.9 times the rate, or over 1,800 more admissions per 100,000).

Table 52: Early deaths from respiratory disease, Lakes 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	23.3	(16.0, 33.8)	7	7.1	(4.7, 10.6)	**3.30**	**(1.90, 5.72)**	16.2
Male	4	18.4	(11.7, 29.0)	7	5.7	(4.0, 8.0)	**3.25**	**(1.83, 5.76)**	12.7
Total	9	20.8	(15.6, 27.8)	13	6.4	(4.8, 8.4)	**3.28**	**(2.20, 4.88)**	14.5

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, nine Lakes Māori per year died early from respiratory disease, at a rate 3.3 times that of non-Māori, or 15 more deaths per 100,000.

Mental disorders

Table 53: Hospitalisations for mental disorders, all ages, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Disorder	Ave. no. per year	Age-standardised rate (95% CI)		Ave. no. per year	Age-standardised rate (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female								
All disorders	115	595.9	(535.2, 663.6)	174	429.8	(385.6, 479.0)	**1.39 (1.19, 1.62)**	166.1
Schizophrenia	26	138.8	(110.9, 173.7)	11	25.0	(16.7, 37.6)	**5.54 (3.49, 8.82)**	113.8
Mood (affective)	44	230.0	(193.4, 273.4)	68	153.5	(129.5, 181.9)	**1.50 (1.18, 1.91)**	76.5
—Bipolar	32	161.3	(131.7, 197.7)	23	49.0	(36.0, 66.9)	**3.29 (2.27, 4.77)**	112.3
—Depressive episode	9	51.2	(35.1, 74.7)	31	74.1	(58.3, 94.1)	0.69 (0.44, 1.08)	-22.9
Substance use	24	114.7	(90.2, 145.9)	18	60.9	(45.2, 82.0)	**1.88 (1.28, 2.76)**	53.8
—Alcohol	18	82.3	(62.5, 108.4)	17	59.6	(44.0, 80.7)	1.38 (0.92, 2.08)	22.8
Anxiety, stress-related	15	76.7	(56.7, 103.8)	21	54.9	(40.6, 74.2)	1.40 (0.91, 2.14)	21.9
Male								
All disorders	105	651.7	(582.0, 729.8)	168	401.5	(361.1, 446.4)	**1.62 (1.39, 1.90)**	250.2
Schizophrenia	51	327.1	(278.3, 384.5)	32	102.5	(82.5, 127.4)	**3.19 (2.43, 4.18)**	224.6
Mood (affective)	15	98.0	(72.6, 132.2)	53	115.4	(95.9, 138.7)	0.85 (0.60, 1.21)	-17.4
—Bipolar	8	54.7	(36.4, 82.3)	7	17.3	(10.5, 28.4)	**3.17 (1.67, 6.03)**	37.5
—Depressive episode	6	37.2	(23.1, 59.7)	28	58.8	(45.6, 76.0)	0.63 (0.37, 1.08)	-21.7
Substance use	25	151.3	(120.3, 190.2)	36	102.2	(82.1, 127.3)	**1.48 (1.08, 2.03)**	49.0
—Alcohol	19	112.5	(86.3, 146.6)	29	77.5	(60.4, 99.4)	**1.45 (1.01, 2.09)**	35.0
Anxiety, stress-related	5	29.5	(17.5, 49.7)	17	32.6	(23.6, 45.1)	0.90 (0.49, 1.67)	-3.1
Total								
All disorders	221	623.8	(576.8, 674.6)	341	415.6	(385.2, 448.4)	**1.50 (1.35, 1.67)**	208.2
Schizophrenia	78	233.0	(204.2, 265.7)	43	63.8	(52.6, 77.3)	**3.65 (2.89, 4.61)**	169.2
Mood (affective)	59	164.0	(141.0, 190.7)	121	134.4	(118.6, 152.4)	**1.22 (1.00, 1.48)**	29.5
—Bipolar	40	108.0	(89.9, 129.8)	30	33.1	(25.5, 43.1)	**3.26 (2.36, 4.49)**	74.9
—Depressive episode	15	44.2	(32.9, 59.4)	59	66.5	(55.8, 79.2)	**0.67 (0.47, 0.94)**	-22.3
Substance use	49	133.0	(112.6, 157.1)	54	81.6	(68.3, 97.3)	**1.63 (1.28, 2.08)**	51.4
—Alcohol	37	97.4	(80.4, 118.0)	46	68.5	(56.5, 83.1)	**1.42 (1.08, 1.87)**	28.9
Anxiety, stress-related	20	53.1	(40.9, 69.0)	38	43.7	(34.9, 54.8)	1.21 (0.86, 1.71)	9.4

Source: NMDS

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

Rates of hospitalisation for mental disorders were 50% higher for Māori than for non-Māori.

Among Māori females, the most common cause of admission was mood disorders, with 44 admissions per year on average, at a rate 50% higher than that for non-Māori. Admission rates for schizophrenia were 5.5 times the rate for non-Māori women. Rates of admission for mood disorders were 50% higher, and for substance use disorders 88% higher, than the rates for non-Māori women.

Among Māori males, the overall admission rate was 62% higher than the non-Māori rate. Admissions for schizophrenia type disorders were the most common, at a rate 3.2 times that of non-Māori. Māori men had 3.2 times the non-Māori rate of admission for bipolar disorder and 1.5 times the rate of admission for substance use disorders.

Gout

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

Indicator	Māori		Non-Māori		Māori/non-Māori ratio	Difference in percentage
	Count	%	Count	%		
Gout prevalence	1,433	6.2	1774	3.6	1.71	2.6
People with gout who received allopurinol regularly	454	31.7	659	37.1	0.85	-5.5
Colchicine use by people with gout not dispensed allopurinol	170	11.9	147	8.3	1.43	3.6
NSAID use by people with gout	709	49.5	757	42.7	1.16	6.8
Serum urate test within six months following allopurinol dispensing	235	31.4	284	31.0	1.01	0.4

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

Among Lakes Māori, 1,433 were estimated to have gout in 2011, a crude prevalence of 6.2%, (71% higher than the prevalence of non-Māori). About a third of Māori with gout regularly received allopurinol, a preventive therapy to lower urate levels. Of those who received allopurinol (for gout or other reasons), just under a third had a lab test for serum urate levels within the following six months. Half of Lakes DHB Māori diagnosed with gout were using NSAIDs (non-steroidal anti-inflammatory medication).

Table 55: Hospitalisations for gout, 25 years and over, Lakes 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	5	34.6	(20.5, 58.4)	2	2.1	(0.8, 5.3)	**16.29**	**(5.66, 46.89)**	32.5
Male	24	248.7	(194.4, 318.1)	13	34.0	(22.5, 51.3)	**7.32**	**(4.53, 11.85)**	214.7
Total	29	141.6	(113.0, 177.5)	15	18.0	(12.2, 26.7)	**7.85**	**(4.99, 12.35)**	123.6

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

On average, there were 29 hospital admissions for gout per year among Māori, (mostly among males). The admission rate was nearly 8 times as high for Māori as for non-Māori, or 124 more admissions per 100,000.

Hip fractures

Table 56: Hospitalisations for hip fractures, 65 years and over, Lakes 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	235.8	(129.9, 428.3)	49	386.6	(318.5, 469.3)	0.61	(0.33, 1.14)	-150.8
Male	2	157.4	(65.1, 380.3)	20	255.4	(193.8, 336.5)	0.62	(0.24, 1.55)	-98.0
Total	5	196.6	(118.9, 325.0)	69	321.0	(273.5, 376.8)	0.61	(0.36, 1.04)	-124.4

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

On average, five Māori aged 65 and over were admitted to hospital per year for hip fractures, at a rate of just under 200 per 100,000.

Elective surgery

Table 57: Hospitalisations for hip replacements, 50 years and over, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	15	413.1	(308.7, 552.9)	54	290.8	(245.5, 344.5)	**1.42 (1.01, 1.99)**	122.3
Male	15	498.0	(372.7, 665.5)	40	248.7	(205.2, 301.5)	**2.00 (1.41, 2.84)**	249.3
Total	31	455.6	(370.7, 559.9)	94	269.7	(237.5, 306.4)	**1.69 (1.33, 2.15)**	185.8

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

On average, 31 Māori aged 50 years and over were admitted to hospital per year for a hip replacement, at a rate 69% higher than that of non-Māori.

Table 58: Publicly funded hospitalisations for cataract surgery, 45 years and over, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	48	872.1	(738.4, 1030.0)	146	409.4	(366.0, 458.0)	**2.13 (1.74, 2.60)**	462.7
Male	35	771.5	(635.5, 936.8)	116	397.8	(352.9, 448.6)	**1.94 (1.54, 2.44)**	373.7
Total	82	821.8	(723.9, 933.0)	262	403.6	(371.8, 438.1)	**2.04 (1.75, 2.37)**	418.2

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

On average 82 Lakes Māori aged 45 years and over were admitted to hospital each year for cataract surgery. The rate for Māori was twice that for non-Māori, or 418 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 Waikato and Bay of Plenty Regions, as this data was not available by DHB.

Hospitalisations

Table 59: All-cause hospitalisations, all ages, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	5,356	27,577.3	(27,140.1, 28,021.6)	9,376	23,100.2	(22,737.1, 23,469.1)	**1.19 (1.17, 1.22)**	4,477.1
Male	3,852	20,784.7	(20,397.6, 21,179.2)	7,768	17,698.9	(17,383.7, 18,019.9)	**1.17 (1.14, 1.21)**	3,085.8
Total	9,207	24,181.0	(23,888.3, 24,477.3)	17,143	20,399.6	(20,158.5, 20,643.5)	**1.19 (1.17, 1.21)**	3,781.4

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

On average, there were 9,207 Māori hospital admissions per year at a rate 19% higher than that of non-Māori, or approximately 3,780 more 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, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	1,359	6,902.0	(6,686.3, 7,124.7)	1,428	4,305.7	(4,144.5, 4,473.2)	**1.60 (1.53, 1.68)**	2,596.3
Male	1,154	6,377.0	(6,162.8, 6,598.7)	1,629	4,627.0	(4,464.5, 4,795.4)	**1.38 (1.31, 1.45)**	1,750.1
Total	2,512	6,639.5	(6,486.8, 6,795.9)	3,057	4,466.4	(4,351.3, 4,584.5)	**1.49 (1.44, 1.54)**	2,173.2

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 2,500 Māori hospital admissions per year were potentially avoidable through population based prevention strategies. The rate of admission was 49% higher for Māori than for non-Māori, or 2,173 more admissions per 100,000.

Table 61: Ambulatory care sensitive hospitalisations, 0–74 years, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	682	3,487.4	(3,334.6, 3,647.3)	618	1,822.7	(1,717.8, 1,934.1)	**1.91 (1.78, 2.06)**	1,664.7
Male	592	3,222.0	(3,071.7, 3,379.7)	744	1,930.1	(1,827.4, 2,038.6)	**1.67 (1.55, 1.80)**	1,291.9
Total	1,274	3,347.5	(3,239.8, 3,458.7)	1,362	1,872.4	(1,798.5, 1,949.3)	**1.79 (1.70, 1.88)**	1,475.1

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

On average, there were 1,274 ambulatory care sensitive hospitalisations per year among Lakes Māori, at a rate 79% higher than the non-Māori rate, or 1,475 more admissions per 100,000.

Mortality

Table 62: Life expectancy at birth, Waikato and Bay of Plenty Districts, 2012–2014

Region and Gender	Māori		Non-Māori		Difference in years
	Years (95% credible interval)		Years (95% credible interval)		
Waikato Region					
Female	76.5	(75.8, 77.2)	84.0	(83.8, 84.3)	-7.5
Male	72.2	(71.5, 72.9)	80.3	(80.0, 80.5)	-8.1
Bay of Plenty Region					
Female	76.7	(76.0, 77.5)	84.5	(84.2, 84.7)	-7.8
Male	72.3	(71.6, 73.1)	80.7	(80.4, 81.0)	-8.4

Source: Statistics New Zealand Subnational Period Life Tables: 2012–14.
Notes: This data is for the two regions which overlap with Lakes DHB: Bay of Plenty (which includes the Rotorua District) and Waikato (which includes the Taupo District). A map of Regional Council boundaries can be found here. The credible interval is the 2.5th percentile and the 97.5th percentile, the expected years of life at birth is the 50th percentile. Further information on the regional life tables and methods can be found here.

Life expectancy at birth is a summary measure of age-specific mortality rates during a specific period, and takes no account of any changes in mortality rates after that period. Māori females in the Waikato Region had a life expectancy at birth of 76.5 years, 7.5 years lower than that of non-Māori females (84.0 years). Māori females in the Bay of Plenty Region had a life expectancy of 76.7 years, 7.8 years lower than that of non-Māori females (84.5 years).

Māori males in the Waikato Region had a life expectancy at birth of 72.2 years, 8.1 years lower than the life expectancy of non-Māori males. In the Bay of Plenty region, Māori males had a life expectancy of 72.3 years, 8.4 years lower than that of non-Māori males.

For both genders, there was only one-tenth of a year's difference the life expectancy at birth of Māori residents of the Waikato and Bay of Plenty Regions. Māori males had a life expectancy 4.3 years lower than Māori females in both regions.

Table 63: All-cause deaths, all ages, Lakes 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	94	372.3	(348.5, 397.8)	270	139.3	(130.6, 148.5)	**2.67**	**(2.44, 2.93)**	233.0
Male	102	509.2	(478.4, 542.0)	277	237.5	(224.2, 251.5)	**2.14**	**(1.97, 2.33)**	271.8
Total	196	440.8	(421.1, 461.3)	547	188.4	(180.4, 196.7)	**2.34**	**(2.20, 2.49)**	252.4

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 almost 200 Māori deaths per year on average in Lakes from 2008 to 2012. The Māori mortality rate was 2.3 times as high as the non-Māori rate, or 252 more deaths per 100,000.

Table 64: Leading causes of death for Māori, all ages, Lakes 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	14	49.0	(38.7, 62.0)	49	15.3	(12.9, 18.3)	**3.19 (2.38, 4.29)**	33.6
Lung cancer	10	37.2	(28.1, 49.4)	12	7.0	(5.1, 9.6)	**5.33 (3.48, 8.16)**	30.3
COPD	7	25.8	(18.5, 36.1)	17	8.3	(6.0, 11.4)	**3.13 (1.97, 4.96)**	17.6
Stroke	6	22.3	(15.6, 32.0)	32	8.7	(7.2, 10.6)	**2.56 (1.70, 3.86)**	13.6
Diabetes	6	20.8	(14.6, 29.8)	7	3.5	(2.2, 5.5)	**5.97 (3.33, 10.70)**	17.4
Male								
IHD	18	81.6	(66.2, 100.7)	54	33.6	(28.9, 39.1)	**2.43 (1.87, 3.14)**	48.0
Accidents	12	68.9	(53.0, 89.6)	11	28.5	(20.5, 39.6)	**2.42 (1.59, 3.69)**	40.4
Lung cancer	10	42.5	(32.0, 56.3)	17	11.8	(9.4, 14.9)	**3.60 (2.50, 5.18)**	30.7
Diabetes	8	33.6	(24.5, 46.1)	8	5.7	(3.9, 8.4)	**5.90 (3.59, 9.69)**	27.9
COPD	6	24.3	(16.9, 35.1)	21	9.9	(8.1, 12.2)	**2.45 (1.61, 3.72)**	14.4
Total								
IHD	32	65.3	(55.8, 76.5)	102	24.5	(21.8, 27.6)	**2.67 (2.19, 3.25)**	40.8
Lung cancer	20	39.9	(32.6, 48.7)	29	9.4	(7.8, 11.3)	**4.24 (3.23, 5.58)**	30.5
Accidents	18	50.2	(40.5, 62.2)	20	18.0	(13.6, 24.0)	**2.79 (1.95, 3.98)**	32.2
Diabetes	14	27.2	(21.4, 34.6)	15	4.6	(3.4, 6.2)	**5.92 (4.05, 8.66)**	22.6
COPD	13	25.1	(19.6, 32.1)	38	9.1	(7.6, 10.9)	**2.75 (2.03 3.75)**	16.0

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 (IHD), lung cancer, chronic obstructive pulmonary disease (COPD), stroke, and diabetes. Māori mortality rates for these conditions ranged between 2.6 times and 6 times as high as those of non-Māori females.

For Māori men, the leading causes of death were IHD, accidents, lung cancer, diabetes and COPD. Māori men's mortality rates for these conditions ranged between 2.4 and 5.9 times those of non-Māori men.

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, Lakes 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	54	229.4	(203.1, 259.0)	50	64.3	(54.8, 75.4)	**3.57 (2.92, 4.36)**	165.1
Male	62	318.9	(284.8, 357.2)	80	122.6	(107.6, 139.8)	**2.60 (2.19, 3.09)**	196.3
Total	116	274.2	(252.3, 298.0)	130	93.5	(84.4, 103.5)	**2.93 (2.57, 3.35)**	180.7

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 116 potentially avoidable Māori deaths per year in Lakes DHB on average, at a rate almost three times as high as the non-Māori rate, or 181 more deaths per 100,000.

Table 66: Amenable mortality, 0–74 years, Lakes DHB, 2007–2011

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	38	160.6	(138.8, 185.8)	34	42.9	(35.2, 52.3)	**3.74 (2.93, 4.78)**	117.7
Male	47	242.9	(213.2, 276.7)	58	92.3	(79.2, 107.6)	**2.63 (2.15, 3.22)**	150.6
Total	85	201.8	(183.0, 222.5)	91	67.6	(59.9, 76.4)	**2.98 (2.55, 3.49)**	134.1

Source: Mortality, Ministry of Health
Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

Amenable mortality was 3 times as high for Māori as for non-Māori, or 134 more deaths per 100,000. On average, there were 85 Māori deaths per year from causes amenable to health care.

Injuries

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

Table 67: Hospitalisations for injury, all ages, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	439	2,304.8	(2,180.1, 2,436.7)	810	1,857.9	(1,757.1, 1,964.6)	**1.24 (1.15, 1.34)**	446.9
Male	648	3,842.0	(3,670.8, 4,021.2)	1,003	2,896.7	(2,772.4, 3,026.5)	**1.33 (1.25, 1.41)**	945.4
Total	1,087	3,073.4	(2,966.8, 3,183.9)	1,813	2,377.3	(2,296.7, 2,460.7)	**1.29 (1.23, 1.36)**	696.1

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

On average, 1,087 Māori per year were hospitalised for injury at a rate 29% higher than non-Māori, or nearly 700 more admissions per 100,000.

Table 68: Hospitalisations for assault, all ages, Lakes DHB, 2011–2013

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	37	211.6	(175.3, 255.5)	12	46.9	(33.1, 66.6)	**4.51 (3.03, 6.71)**	164.7
Male	84	534.1	(470.8, 605.8)	48	184.4	(155.2, 219.2)	**2.90 (2.34, 3.59)**	349.6
Total	120	372.9	(335.7, 414.1)	60	115.7	(99.1, 135.1)	**3.22 (2.67, 3.89)**	257.2

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

On average 120 Māori per year were admitted to hospital for injury caused by assault, at a rate 3.2 times the non-Māori rate, or 257 more admissions per 100,000. Males had higher admission rates than females.

Table 69: Deaths from injury, all ages, Lakes DHB, 2007–2011

	Māori			Non-Māori				
Gender	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Māori/non-Māori ratio (95% CI)	Rate difference
Female	8	40.2	(29.0, 55.7)	11	10.4	(6.6, 16.4)	**3.85 (2.21, 6.74)**	29.8
Male	18	109.0	(88.4, 134.6)	21	51.6	(40.8, 65.2)	**2.12 (1.54, 2.90)**	57.5
Total	26	74.6	(62.5, 89.1)	31	31.0	(25.1, 38.2)	**2.41 (1.83, 3.17)**	43.6

Source: Mortality dataset, Ministry of Health.
Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average 26 Lakes Māori died from injuries per year, at a rate 2.4 times as high as that for non-Māori, or 44 more deaths per 100,000. Mortality rates were higher for males than for females.

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Appendix 1: Population projections

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

Projected Māori Ethnic Group Population by Age and Sex at 30 June 2014-20 (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	410	380	800	410	390	800	410	380	790	400	380	780
1-4	1,690	1,660	3,350	1,650	1,610	3,250	1,630	1,570	3,200	1,600	1,530	3,130
5-9	2,000	1,940	3,940	2,060	1,980	4,040	2,040	1,980	4,020	2,060	2,010	4,070
10-14	1,940	1,810	3,750	1,900	1,850	3,750	1,880	1,810	3,700	1,870	1,790	3,660
15-19	1,760	1,730	3,480	1,820	1,720	3,540	1,920	1,800	3,720	1,910	1,790	3,710
20-24	1,360	1,400	2,750	1,350	1,380	2,730	1,350	1,330	2,680	1,360	1,360	2,720
25-29	980	1,270	2,250	1,020	1,260	2,280	1,040	1,300	2,340	1,110	1,300	2,410
30-34	850	1,120	1,970	830	1,110	1,940	840	1,120	1,960	850	1,120	1,970
35-39	920	1,120	2,040	880	1,120	2,000	860	1,070	1,930	830	1,070	1,890
40-44	1,020	1,160	2,180	1,000	1,140	2,130	970	1,140	2,110	950	1,110	2,050
45-49	950	1,140	2,090	970	1,130	2,100	940	1,120	2,060	960	1,120	2,070
50-54	950	1,120	2,070	910	1,130	2,050	900	1,130	2,030	890	1,110	2,000
55-59	730	870	1,600	790	920	1,710	840	950	1,790	830	990	1,820
60-64	550	660	1,210	580	670	1,250	590	700	1,290	610	730	1,340
65-69	400	440	840	400	460	860	420	490	910	440	530	980
70–74	280	330	620	300	350	650	290	360	660	290	360	650
75-79	170	210	370	160	230	380	170	240	410	200	250	450
80-84	80	120	200	80	110	190	80	120	210	80	120	200
85-89	30	60	80	30	60	90	40	50	90	40	70	100
90+	10	10	20	10	20	30	10	20	30	10	20	30
All Ages	**17,100**	**18,600**	**35,600**	**17,200**	**18,600**	**35,800**	**17,200**	**18,700**	**35,900**	**17,300**	**18,700**	**36,000**
		2017			2018			2019			2020	
0	400	370	770	390	370	770	390	370	760	390	370	750
1-4	1,590	1,500	3,090	1,570	1,490	3,060	1,550	1,480	3,030	1,540	1,460	3,000
5-9	2,030	1,990	4,020	2,010	1,960	3,970	1,960	1,910	3,870	1,940	1,860	3,800
10-14	1,890	1,830	3,720	1,880	1,830	3,710	1,940	1,870	3,810	1,920	1,870	3,780
15-19	1,860	1,720	3,590	1,820	1,680	3,500	1,780	1,720	3,500	1,760	1,680	3,440
20-24	1,430	1,430	2,860	1,530	1,510	3,030	1,590	1,490	3,080	1,690	1,580	3,270
25-29	1,140	1,250	2,390	1,180	1,230	2,410	1,180	1,210	2,390	1,180	1,160	2,340
30-34	860	1,150	2,010	890	1,200	2,080	920	1,190	2,110	950	1,220	2,160
35-39	840	1,070	1,910	780	1,050	1,820	750	1,040	1,800	760	1,050	1,810
40-44	860	1,080	1,950	850	1,050	1,900	810	1,050	1,850	780	1,000	1,790
45-49	970	1,110	2,080	940	1,090	2,040	920	1,070	1,990	890	1,070	1,970
50-54	860	1,080	1,930	870	1,080	1,950	890	1,060	1,950	860	1,050	1,920
55-59	870	1,020	1,890	870	1,040	1,910	830	1,060	1,890	820	1,060	1,880
60-64	640	770	1,410	650	800	1,450	710	850	1,560	760	880	1,630
65-69	460	560	1,020	480	590	1,070	510	600	1,100	520	630	1,140
70–74	310	370	680	330	380	700	320	390	710	340	410	760
75-79	200	250	440	210	270	480	220	290	510	220	300	520
80-84	90	130	220	100	140	240	90	160	240	100	160	260
85-89	40	70	110	30	70	100	30	60	90	30	70	100
90+	10	20	30	10	30	40	20	30	40	20	20	40
All Ages	**17,300**	**18,800**	**36,100**	**17,400**	**18,800**	**36,200**	**17,400**	**18,900**	**36,300**	**17,500**	**18,900**	**36,400**

These projections were derived in October 2014.

Source: Statistics New Zealand
Population Projections

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

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

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

Age	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
		2013(Base)			2014			2015			2016	
0	750	700	1,450	740	700	1,440	740	700	1,450	740	700	1,450
1-4	3,290	3,100	6,390	3,140	3,010	6,150	3,040	2,910	5,950	2,970	2,830	5,800
5-9	3,970	3,800	7,770	4,060	3,780	7,840	4,030	3,790	7,820	4,050	3,790	7,840
10-14	4,010	3,730	7,740	3,880	3,720	7,610	3,790	3,640	7,430	3,730	3,550	7,280
15-19	3,690	3,480	7,160	3,750	3,460	7,210	3,870	3,530	7,400	3,840	3,510	7,350
20-24	3,150	3,020	6,170	3,180	2,990	6,170	3,190	2,890	6,070	3,140	2,870	6,010
25-29	2,770	3,070	5,840	2,900	3,190	6,090	3,000	3,320	6,320	3,160	3,420	6,570
30-34	2,580	3,000	5,590	2,580	2,980	5,550	2,590	2,980	5,570	2,680	3,040	5,720
35-39	2,930	3,280	6,210	2,780	3,200	5,980	2,680	3,110	5,790	2,610	3,040	5,660
40-44	3,410	3,730	7,140	3,350	3,610	6,960	3,290	3,510	6,800	3,140	3,350	6,490
45-49	3,380	3,710	7,100	3,350	3,680	7,040	3,290	3,660	6,950	3,330	3,690	7,020
50-54	3,560	3,830	7,390	3,530	3,880	7,410	3,530	3,900	7,430	3,440	3,800	7,230
55-59	3,090	3,310	6,400	3,170	3,410	6,580	3,290	3,450	6,740	3,390	3,580	6,970
60-64	2,790	3,030	5,820	2,840	3,040	5,880	2,880	3,100	5,980	2,900	3,200	6,100
65-69	2,470	2,600	5,070	2,550	2,720	5,270	2,630	2,870	5,490	2,700	2,960	5,660
70–74	1,920	2,000	3,920	2,020	2,100	4,120	2,030	2,170	4,200	2,020	2,190	4,210
75-79	1,230	1,350	2,580	1,250	1,410	2,650	1,360	1,470	2,820	1,510	1,580	3,080
80-84	860	1,040	1,900	870	1,050	1,920	870	1,050	1,930	880	1,080	1,960
85-89	400	670	1,070	400	650	1,050	410	640	1,050	430	660	1,090
90+	150	330	480	160	350	520	180	380	560	180	380	560
All Ages	50,400	52,800	103,200	50,500	52,900	103,400	50,700	53,100	103,700	50,800	53,200	104,000
		2017			2018			2019			2020	
0	740	700	1,440	740	700	1,440	740	700	1,440	740	700	1,440
1-4	2,930	2,780	5,700	2,920	2,780	5,690	2,910	2,770	5,690	2,910	2,770	5,680
5-9	3,940	3,740	7,680	3,860	3,610	7,470	3,700	3,520	7,220	3,600	3,410	7,010
10-14	3,750	3,590	7,340	3,730	3,580	7,310	3,820	3,560	7,380	3,790	3,570	7,350
15-19	3,750	3,370	7,120	3,620	3,270	6,890	3,490	3,260	6,750	3,390	3,160	6,550
20-24	3,140	2,870	6,010	3,210	2,920	6,130	3,270	2,890	6,160	3,380	2,950	6,320
25-29	3,250	3,430	6,670	3,330	3,390	6,730	3,350	3,340	6,690	3,340	3,220	6,550
30-34	2,790	3,150	5,940	2,880	3,290	6,170	3,000	3,390	6,390	3,090	3,510	6,610
35-39	2,590	3,020	5,610	2,540	2,960	5,510	2,530	2,930	5,460	2,540	2,920	5,470
40-44	2,960	3,240	6,200	2,820	3,110	5,930	2,670	3,020	5,690	2,560	2,940	5,500
45-49	3,360	3,650	7,010	3,330	3,610	6,940	3,260	3,490	6,750	3,200	3,390	6,590
50-54	3,320	3,660	6,980	3,270	3,610	6,880	3,240	3,580	6,820	3,180	3,550	6,720
55-59	3,460	3,730	7,190	3,470	3,790	7,270	3,450	3,840	7,290	3,440	3,860	7,300
60-64	2,980	3,280	6,270	3,050	3,320	6,370	3,130	3,410	6,540	3,240	3,450	6,690
65-69	2,700	2,930	5,630	2,700	2,950	5,650	2,750	2,960	5,710	2,790	3,020	5,810
70–74	2,110	2,320	4,430	2,290	2,460	4,750	2,370	2,580	4,950	2,440	2,730	5,160
75-79	1,610	1,710	3,320	1,620	1,790	3,420	1,720	1,880	3,600	1,720	1,950	3,670
80-84	870	1,050	1,920	900	1,080	1,980	900	1,130	2,020	990	1,180	2,160
85-89	470	680	1,160	480	690	1,170	500	700	1,210	520	720	1,230
90+	180	390	560	170	390	560	170	380	550	180	380	560
All Ages	50,900	53,300	104,200	50,900	53,300	104,200	51,000	53,300	104,300	51,000	53,400	104,400

These projections were derived in October 2014.

Source: Statistics New Zealand

Population Projections

Appendix 2: Technical notes

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

Data sources

Table 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

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 others 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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