



Northland
District Health Board

Māori Health Profile 2015



Te Rei Puta

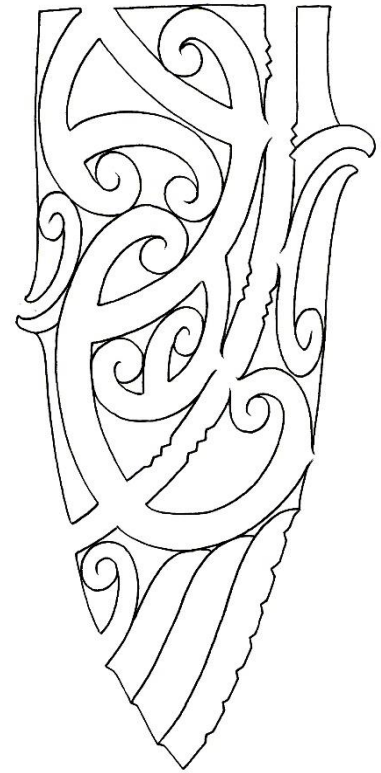
The cover design represents the journey of data from its production to its use by the health sector. The overall shape of the design is the prized rei puta. This signifies the importance of information and the acknowledgement that knowledge is a taonga.

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

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

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He Mihi

Tūi Tuia i Te Herenga Tangata

Te tangi a Te Rōpū Rangahau Hauora a Eru Pōmare.

Tui Tui Tui Tuia

E ngā maunga whakahii, ngā pū kōrero huri noa

Tēnā koutou, tēnā koutou, tēnā tātou katoa.

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

Haere atu rā, okioki ai.

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

Anei te mihi ki ngā kaimahi hauora

Whakapiki te kaha

Whakapiki te ora

Whakapiki te māramatanga

Kia eke tātou katoa ki Te Pae Ora.

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Ngā mihi nui ki a koutou katoa.

Nā,

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



Tiro whānui

– Northland at a glance

Northland population

- In 2013, 55,200 Māori lived in the Northland District Health Board region, 34% of the District's total population. Just over half of the District's children aged 0–14 years were Māori (52%) and just under half of the DHB's youth aged 15–24 years were Māori (47%).
- The Northland Māori population is youthful, but showing signs of ageing. In 2013, half were aged 24.5 years or under. The Māori population aged 65 years and over will increase by nearly 50% between 2013 and 2020.

Whānau ora – Healthy families

- In 2013, most Northland Māori adults (82%) reported that their whānau was doing well, but 7% felt their whānau was doing badly. A small proportion (5%) found it hard to access whānau support in times of need, but most found it easy (85%).
- Being involved in Māori culture was important to the majority of Māori adults (81%). Spirituality was important to 71%.
- Practically all (99%) Northland Māori had been to a marae at some time. Most (79%) had been to their ancestral marae, with over half (54%) stating they would like to go more often.
- One in six (16%) had taken part in traditional healing or massage in the last 12 months.
- A quarter of Northland Māori could have a conversation about a lot of everyday things in te reo Māori.

Wai ora – Healthy environments

Education

- In 2013, 86% of Northland Māori children starting school had participated in early childhood education.
- Forty-two percent of Māori adults aged 18 years and over had at least a Level 2 Certificate, a higher proportion than in 2006 (36%). The proportion of non-Māori with this level of qualification was 62% in 2013.

Work

- In 2013, 14% of Māori adults aged 15 years and over were unemployed, more than twice the non-Māori unemployment rate (6%).
- Most Māori adults (89%) do voluntary work.
- In 2013, Northland 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, one in two children and two out of five 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, 15% of Northland Māori adults 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 8% had postponed or put off visits to the doctor.

- Residents of Māori households were over 4 times as likely as non-Māori to have no access to a motor vehicle (10% compared to 2%).
- People in Māori households were less likely to have access to telecommunications than those living in other households: 39% had no internet, 32% no telephone, 15% no mobile phone, and 4% had no access to any telecommunications.

Housing

- The most common housing problems reported to be a big problem by Māori adults in 2013 were finding it hard to keep warm (19%), needing repairs (18%), and damp (13%).
- Over half of children in Northland Māori households were living in rented accommodation (57%), twice the proportion of children in other households (27%).
- Northland residents living in Māori households were over 4 times as likely as others to be in crowded homes (i.e. requiring at least one additional bedroom) (23% compared to 5%).

Area deprivation

- Using the NZDep2013 index of small area deprivation, 39% of Northland Māori lived in the most deprived decile areas (decile 10) compared to 14% of non-Māori.

Mauri ora – Healthy individuals

Pepi, tamariki – Infants and children

- On average 1,386 Māori infants were born per year during 2009–2013, 60% of all live births in Northland DHB. Seven percent of Māori and 4% of non-Māori babies had low birth weight.
- In 2013, 78% of Māori babies in Northland were fully breastfed at 6 weeks.
- Two-thirds of Māori infants were enrolled with a Primary Health Organisation by three months of age.
- In 2014, 87% of Māori children were fully immunised at 8 months of age, 90% at 24 months.
- In 2013, three-quarters of Northland Māori children aged 5 years and half of non-Māori children had caries. At Year 8 of school, two out of three Māori children and two out of five non-Māori children had caries. Māori children under 15 years were twice as likely as non-Māori to be hospitalised for tooth and gum disease.
- During 2011–2013, on average there were 119 hospital admissions per year for grommet insertions among Māori children (at a rate 20% higher than non-Māori) and a similar number of admissions for serious skin infections (with the rate over twice that of non-Māori children).
- Māori children under 15 years were 21 times as likely as non-Māori children to be hospitalised for acute rheumatic fever, with 14 Māori children per year admitted at least once.
- Approximately 1,280 hospitalisations per year of Māori children were potentially avoidable through population-based health promotion and intersectoral actions, at a rate two-thirds higher than that of non-Māori.
- Around 870 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 two-thirds higher than for non-Māori children.

Rangatahi – Young adults

- There has been a significant increase in the proportion of Northland Māori aged 14 and 15 years who have never smoked, and a decrease in the proportion of Māori aged 15–24 years who smoke regularly.
- By September 2014, 60% of Māori girls aged 17 years and 52% of those aged 14 years had completed all three doses of the human papilloma virus (HPV) immunisation. Coverage was higher for Māori than for non-Māori.
- Māori aged 15–24 years were 5 times as likely as non-Māori to be admitted to hospital for acute rheumatic fever, with three rangatahi Māori and one non-Māori admitted per year during 2011–2013.
- Rates of hospitalisation for serious injury from self-harm were lower for Māori than for non-Māori among those aged 15–24 years during 2011–2013 but higher for Māori than for non-Māori at ages 25–44 years.

Pakeke – Adults

- Just over half of Māori adults in Northland reported having excellent or very good health in 2013, and a third reported good health. One in six (16%) reported having fair or poor health.
- Smoking rates are decreasing, but remained twice as high for Māori as for non-Māori in 2013 (36% compared to 16%).

Circulatory system diseases

- Northland Māori adults aged 25 years and over were 80% more likely than non-Māori to be hospitalised for circulatory system diseases (including heart disease and stroke) in 2011–2013.
- Māori were 72% more likely than non-Māori to be admitted with acute coronary syndrome, 48% more likely to have angiography, just as likely to have angioplasty, and twice as 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 twice as high for Māori as for non-Māori. Admissions for hypertensive disease were 3 times as high.
- Chronic rheumatic heart disease admissions were 5 times as common for Māori as for non-Māori, and heart valve replacements 65% higher.
- Māori under 75 years were 4 times as likely as non-Māori to die from circulatory system diseases in 2007–2011.

Diabetes

- In 2013, 8% of Māori and 7% of non-Māori were estimated to have diabetes. Nearly half of Māori aged 25 years and over who had diabetes were regularly receiving metformin or insulin, 86% were having their blood sugar monitored regularly, and two-thirds were being screened regularly for renal disease.
- In 2011–2013 Māori with diabetes were nearly 6 times as likely as non-Māori to have a lower limb amputated.

Cancer

- Compared to non-Māori, cancer incidence was 37% higher for Māori females and 27% higher for Māori males, while cancer mortality was twice as high for Māori of both genders.
- Breast, lung, uterine, and colorectal cancers were the most commonly registered among Northland Māori women during 2008–2012. The rate of lung cancer was over 4 times as high as for non-Māori, uterine cancer 2.5 times as high, breast cancer 26% higher, and colorectal cancer 42% lower.
- Breast screening coverage of Māori women aged 45–69 years was 66% compared to 73% of non-Māori women at December 2014. Cervical screening coverage of Māori women aged 25–69 years was 63% over 3 years and 81% over five years (compared to 76% and 90% of non-Māori respectively).
- Lung, prostate, colorectal and stomach were the most common cancers among Northland Māori men. Lung and stomach cancer registration rates were 4 and 5 times as high as for non-Māori men respectively, while the prostate cancer rate was lower, and the colorectal cancer rate similar.
- Lung cancer was the most common cause of death from cancer among Māori men and women.

Respiratory disease

- Māori aged 45 years and over were 4 times as likely as non-Māori to be admitted to hospital for chronic obstructive pulmonary disease (COPD).
- Asthma hospitalisation rates were higher for Māori than non-Māori in each age group.
- Māori under 75 years had 3.5 times the non-Māori rate of death from respiratory disease in 2007–2011.

Mental disorders

- Māori were around twice as likely as non-Māori to be admitted to hospital for a mental disorder during 2011–2013. Schizophrenia type disorders were the most common disorders, followed by mood disorders.

Gout

- In 2011 the prevalence of gout among Northland Māori was estimated to be 8%, nearly twice the prevalence in non-Māori (4%).
- Just under 40% of Māori with gout regularly received allopurinol, a preventive therapy to lower urate levels. Of those who received allopurinol, only 36% had a lab test for serum urate levels in the following six months.

- During 2011–2013 the rate of hospitalisations for gout was 7 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 60% higher for Māori than for non-Māori during 2011–2013.
- More than 3,400 Māori hospital admissions per year were potentially avoidable, with the rate 47% higher for Māori than for non-Māori. The ASH rate was twice as high.

Mortality

- Life expectancy at birth for Māori residents in the Northland Region during 2012–2014 was 75.9 years for females (8.6 years lower than for non-Māori females), and 71.4 years for males (9.3 years lower than for non-Māori males).
- The all-cause mortality rate for Northland Māori was 2.4 times the non-Māori rate during 2008–2012.
- Leading causes of death for Māori females were ischaemic heart disease (IHD), lung cancer, stroke, diabetes, and COPD. Leading causes of death for Māori males were IHD, diabetes, accidents, lung cancer, and COPD.
- Potentially avoidable mortality and mortality amenable to health care were over two-and-a-half times as high for Māori as for non-Māori in Northland during 2007–2011.

Injuries

- The rate of hospitalisation due to injury was 27% higher for Māori than for non-Māori.
- The most common causes of injury resulting in hospitalisations among Māori were falls; complications of medical and surgical care; exposure to mechanical forces; transport accidents; and assault.
- Rates of hospital admission for injury caused by assault were 2.8 times as high for Māori as for non-Māori.
- Injury mortality was 58% higher for Māori than for non-Māori in Northland.

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Introduction

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

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

This document presents data for residents of **Te Poari Hauora ā Rohe o Te Taitokerau (Northland 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 Northland DHB. Accompanying Excel tables also include data for the total Northland DHB population and the total New Zealand population for reo speakers, socioeconomic indicators, mortality, cancer registrations, and hospital discharges.

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

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

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

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

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.

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.

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

Further technical notes and methods are provided in Appendix 2.

Further sources of data

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

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



Te Tatauranga o te Iwi

– Key demographics

In 2013, approximately 8% (55,200) of the country's total Māori population lived in the Northland District Health Board area. The total population of the DHB (164,700) made up 4% of the national population. In 2015, the Māori population is estimated to be 57,100 and the total population 168,200.²

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

Age group (years)	Māori			Non-Māori		Total DHB Number
	Number	Age distribution	% of DHB	Number	Age distribution	
0–14	18,860	34%	52	17,580	16%	36,440
15–24	9,130	17%	47	10,320	9%	19,450
25–44	11,920	22%	35	22,020	20%	33,940
45–64	11,380	21%	25	34,630	32%	46,010
65+	3,930	7%	14	24,990	23%	28,920
Total	55,200	100%	34	109,500	100%	164,700

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

In 2013, Māori residents comprised 34% of the DHB population. The Māori population is relatively young, with a median age in 2013 of 24.5 years, compared with 41.5 years for the total DHB population. Māori comprised 52% of the DHB's children aged 0–14 years and 47% of those aged 15–24 years.

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

Year	Māori							Total DHB			NZ	
	Residents	% of DHB	% of NZ Māori	% 0–14 years	% 15–64 years	% 65+ years	Median age	Residents	Median age	% of NZ pop	NZ Māori	Total NZ
2013	55,200	34	8	34	59	7	24.5	164,700	41.5	4	692,300	4,442,100
2018	59,200	34	8	33	58	9	25.7	172,600	42.4	4	734,500	4,726,200
2023	62,800	35	8	32	58	11	27.0	177,800	43.1	4	773,500	4,935,200
2028	66,200	36	8	30	57	13	28.2	182,600	43.4	4	811,700	5,139,700
2033	69,700	37	8	30	56	14	29.0	186,200	44.2	4	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 7% but is projected to increase to 14% in 2033. Between 2013 and 2020 the number of Māori aged 65 and over will increase by 48% from 3,930 to 5,820 (see Appendix 1). In 2013, there were 1300 Māori aged 75 years and over in Northland, with 360 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, Northland DHB, 2013

How the whānau is doing	Northland DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Well / Extremely well	30,500	81.7	(78.5, 84.9)	83.4	(82.5, 84.4)
Neither well nor badly	4,000	11.3	(8.5, 14.1)	10.3	(9.4, 11.2)
Badly / Extremely badly	2,500*	7.0*	(4.7, 9.2)	6.3	(5.6, 7.0)

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

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

Over 80% of Northland Māori adults reported that their whānau was doing well or extremely well in 2013. However, 7% felt their whānau was doing badly or extremely badly.

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

Whānau description	Northland DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Size of whānau					
10 or less	17,000	45.6	(41.4, 49.9)	53.7	(52.1, 55.3)
11 to 20	9,500	25.8	(22.1, 29.4)	22.6	(21.3, 24.0)
More than 20	10,500	28.6	(24.4, 32.7)	23.6	(22.4, 24.8)
Groups included in whānau					
Parents, partner, children, brothers & sisters	37,000	98.4	(97.4, 99.5)	94.6	(94.0, 95.2)
Aunts & uncles, cousins, nephews & nieces, other in-laws	17,000	44.8	(40.4, 49.1)	41.3	(39.8, 42.8)
Grandparents, grandchildren	18,500	49.7	(45.6, 53.7)	41.9	(40.5, 43.4)
Friends, others	4,000	11.1	(8.6, 13.6)	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 over a quarter reporting whānau sizes of more than 20 people. Over 10% of Northland Te Kupenga respondents included friends in their description of whānau.

Whānau support

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

How easy is it to get help	Northland DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Support in times of need					
Easy, very easy	32,000	85.1	(82.3, 88.0)	81.2	(80.1, 82.4)
Sometimes easy, sometimes hard	4,000	10.2	(7.6, 12.8)	12.7	(11.7, 13.6)
Hard / very hard	2,000	4.7	(3.0, 6.4)	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	26,000	69.2	(65.1, 73.4)	64.1	(62.7, 65.6)
Sometimes easy, sometimes hard	4,000	10.8	(8.5, 13.2)	16.9	(15.9, 18.0)
Hard / very hard	2,500*	6.0*	(4.0, 8.0)	14.7	(13.5, 15.9)
Don't need help	5,000	13.9	(10.8, 17.0)	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%.

In 2013, the majority of Māori adults in Northland (85%) reported having easy access to support in times of need. However, an estimated 2000 (5%) had difficulty getting help.

A smaller proportion found it easy to get help with Māori cultural practices (69%), with 6% finding it hard or very hard. A further 14% reported not needing help.

Importance of participation in Māori culture

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

	Northland DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Importance of being involved in Māori culture					
Very / quite	22,500	60.3	(55.8, 64.9)	46.3	(44.9, 47.6)
Somewhat	8,000	21.3	(17.4, 25.1)	24.2	(22.9, 25.6)
A little / not at all	7,000	18.4	(15.2, 21.6)	29.5	(28.3, 30.7)
Importance of spirituality					
Very / quite	21,500	57.6	(53.1, 62.1)	48.7	(47.4, 49.9)
Somewhat	5,000	13.8	(10.8, 16.8)	17	(16.0, 18.0)
A little / not at all	10,500	28.6	(24.8, 32.4)	34.3	(33.1, 35.5)

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

Being involved in Māori culture was important to a majority (60%) of Northland Māori adults, and somewhat important to a further 21%. Spirituality was important to over half of Northland Māori (58%).

Te Reo Māori

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

Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in proportion
Number	%	(95% CI)	Number	%	(95% CI)		
11,571	24.9	(24.5, 25.3)	924	1.1	(1.0, 1.2)	22.58 (20.78, 24.55)	23.8%

Source: 2013 Census, Statistics New Zealand

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

According to the 2013 Census, a quarter of all Māori in Northland and 1% of non-Māori could have a conversation about a lot of everyday things in te reo Māori.

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

Language spoken at home	Northland DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Māori is main language	2,000*	5.1*	(3.1, 7.1)	2.6	(2.2, 3.0)
Māori is used regularly	8,500	24.1	(20.4, 27.9)	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%.

In 2013, a quarter of Māori adults reported that Māori language was used regularly in the home, and for 5% te reo Māori was the main language.

Access to marae

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

Been to marae	Northland DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
At some time	37,000	99.2	(98.5, 99.9)	96.0	(95.5, 96.6)
In previous 12 months ⁽¹⁾	28,000	75.5	(72.4, 78.7)	58.2	(56.6, 59.7)
Ancestral marae at some time ⁽²⁾	29,500	79.4	(75.9, 82.9)	62.3	(60.9, 63.7)
Ancestral marae in previous 12 months ⁽³⁾	19,500	52.7	(48.6, 56.8)	33.6	(32.3, 34.9)
Like to go to ancestral marae more often ⁽²⁾	17,000	54.0	(49.1, 58.9)	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 Northland (99%) had been to a marae, with most (76%) having been in the last 12 months. Around 80% had been to at least one of their ancestral marae, but just over half had been in the last 12 months, with a similar proportion reporting 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, Northland DHB, 2013

Northland DHB			New Zealand	
Estimated number	%	(95% CI)	%	(95% CI)
6,000	16.4	(13.4, 19.5)	10.9	(10.0, 11.7)

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

In 2013, an estimated 6,000 Māori adults (16%) in Northland had taken part in traditional healing or massage during the previous 12 months, higher 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 Northland DHB, 2006 and 2013

Year	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
2006	8,505	35.6	(34.9, 36.2)	35,883	56.3	(55.8, 56.7)	0.63 (0.62, 0.64)	-20.7
2013	10,680	42.2	(41.5, 42.8)	39,078	61.8	(61.3, 62.2)	0.68 (0.67, 0.69)	-19.6

Source: 2006 and 2013 Censuses, Statistics New Zealand

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

The proportion of Māori adults aged 18 years and over with at least a Level 2 Certificate increased from 36% to 42% between 2006 and 2013. However, Māori remained two-thirds as likely as non-Māori to have this level of qualification as the non-Māori proportion increased at the same rate.

Work

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

Labour force status	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
2006								
Employed full-time	11,373	42.9	(42.4, 43.5)	36,468	55.2	(54.8, 55.6)	0.78 (0.77, 0.79)	-12.3
Employed part-time	3,843	13.3	(12.9, 13.7)	11,859	16.7	(16.4, 17.1)	0.79 (0.77, 0.82)	-3.4
Unemployed	2,448	9.6	(9.2, 10.0)	1,956	3.9	(3.7, 4.1)	2.44 (2.29, 2.60)	5.7
Not in the labour force	10,287	34.2	(33.7, 34.8)	26,787	24.1	(23.7, 24.4)	1.42 (1.39, 1.45)	10.1
2013								
Employed full-time	10,644	37.6	(37.1, 38.2)	34,449	51.9	(51.5, 52.3)	0.73 (0.71, 0.74)	-14.2
Employed part-time	3,888	12.5	(12.1, 12.9)	11,802	15.7	(15.3, 16.0)	0.80 (0.77, 0.83)	-3.2
Unemployed	3,594	13.8	(13.4, 14.3)	2,901	6.0	(5.8, 6.3)	2.30 (2.18, 2.42)	7.8
Not in the labour force	11,655	36.0	(35.5, 36.6)	29,829	26.4	(26.0, 26.8)	1.37 (1.34, 1.40)	9.6

Source: 2006 and 2013 Censuses, Statistics New Zealand

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

Between 2006 and 2013 there was a decrease in the number and proportion of Māori adults employed full-time, or part-time, and a corresponding increase in the unemployment rate (from 10% to 14%). There was also an increase in Māori adults who were not in the labour force.

The absolute gaps between Māori and non-Māori full-time employment and unemployment rates increased during this time period. In 2013, Māori were 2.3 times as likely as non-Māori to be unemployed, or an absolute gap of 8% in unemployment rates. The absolute gap in labour force participation was 10% in both periods.

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

ANZSIC Industry	Northland DHB						New Zealand	
	Māori			Non-Māori			%	Rank
	Number	%	Rank	Number	%	Rank		
Females								
Health Care and Social Assistance	1,554	23.3	1	4,254	20.0	1	17.1	1
Education and Training	1,239	18.6	2	2,706	12.7	2	12.9	2
Retail Trade	708	10.6	3	2,577	12.1	3	11.6	3
Accommodation and Food Services	636	9.5	4	1,539	7.2	6	7.3	5
Public Administration and Safety	399	6.0	5	867	4.1	7	5.0	7
Males								
Agriculture, Forestry and Fishing	1,119	17.9	1	4,161	18.3	1	8.7	4
Manufacturing	1,002	16.1	2	2,778	12.2	3	13.4	1
Construction	900	14.4	3	3,234	14.2	2	13.2	2
Retail Trade	471	7.6	4	1,986	8.7	4	8.3	5
Transport, Postal and Warehousing	456	7.3	5	1,170	5.1	5	5.9	7

Source: 2013 Census, Statistics New Zealand

Note: Australian and New Zealand Standard Industrial Classification (ANZSIC)

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

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

ANZSCO Occupation	Northland DHB						New Zealand	
	Māori			Non-Māori			%	Rank
	Number	%	Rank	Number	%	Rank		
Females								
Professionals	1,590	23.6	1	5,379	25.2	1	26.7	1
Community and Personal Service Workers	1,269	18.8	2	2,778	13.0	4	12.9	4
Clerical and Administrative Workers	1,035	15.4	3	4,200	19.7	2	19.5	2
Labourers	978	14.5	4	1,728	8.1	6	8.3	6
Managers	786	11.7	5	3,603	16.9	3	14.4	3
Sales Workers	702	10.4	6	2,238	10.5	5	11.7	5
Technicians and Trades Workers	282	4.2	7	1,152	5.4	7	5.0	7
Machinery Operators and Drivers	096	1.4	8	252	1.2	8	1.5	8
Males								
Labourers	1,869	29.1	1	3,516	15.4	3	13.6	4
Technicians and Trades Workers	1,014	15.8	2	4,566	20.1	2	18.5	3
Machinery Operators and Drivers	1,005	15.6	3	1,824	8.0	5	9.1	5
Managers	954	14.8	4	6,348	27.9	1	22.7	1
Professionals	606	9.4	5	3,219	14.1	4	18.6	2
Community and Personal Service Workers	489	7.6	6	1,044	4.6	7	5.4	7
Sales Workers	276	4.3	7	1,476	6.5	6	7.1	6
Clerical and Administrative Workers	216	3.4	8	777	3.4	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 (24%); community and personal service workers (19%); clerical and administrative workers (15%). The next most common occupations were labourers, managers, and sales workers.

Māori men were most likely to be employed as labourers (29%); technicians and trade workers (16%); machinery operators and drivers (16%); and managers (15%).

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

Unpaid work	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage	
	Number	%	(95% CI)	Number	%	(95% CI)			
Any unpaid work	24,045	89.3	(88.9, 89.7)	66,492	90.3	(90.0, 90.6)	0.99	(0.98, 0.99)	-0.9
Looking after disabled/ill household member	4,086	15.1	(14.7, 15.6)	5,502	7.2	(7.0, 7.5)	2.09	(2.00, 2.19)	7.9
Looking after disabled/ill non-household member	4,201	14.7	(14.3, 15.2)	7,128	8.1	(7.8, 8.3)	1.82	(1.74, 1.90)	6.6

Source: 2013 Census, Statistics New Zealand

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

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

Income and standard of living

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

Actions taken a lot to keep costs down	Northland DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Put up with feeling the cold	5,500	14.5	(11.7, 17.4)	11.0	(10.2, 11.8)
Go without fresh fruit and vegetables	2,500*	6.8*	(4.7, 9.0)	5.4	(4.8, 6.0)
Postpone or put off visits to the doctor	3,000	8.0	(5.7, 10.4)	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 5,500 Māori adults (15%) reported putting up with feeling cold to keep costs down, 2,500 (7%) went without fresh fruit and vegetables, and 3,000 (8%) 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, Northland DHB, 2006 and 2013

Year	Māori families			Non-Māori families			Māori/non-Māori ratio (95% CI)	Difference in percentage	
	Number	%	(95% CI)	Number	%	(95% CI)			
2006	4,695	25.0	(24.4, 25.6)	1,095	6.2	(5.9, 6.6)	4.01	(3.77, 4.27)	18.8
2013	5,544	29.8	(29.1, 30.4)	1,128	7.0	(6.7, 7.4)	4.23	(3.98, 4.49)	22.7

Source: 2006 and 2013 Censuses, Statistics New Zealand

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

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

There was an increase in the number of children living in Māori families where the only income was means-tested benefits between 2006 and 2013, with the proportion increasing from 25% to 30%. Children in Māori families were 4 times as likely as non-Māori children to be in this situation.

Table 18: Children and adults living in households with low incomes, Northland 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	7,422	49.7	(48.9, 50.5)	2,892	19.0	(18.4, 19.6)	2.62 (2.53, 2.72)	30.8
Adults 18 years & over	10,917	42.9	(42.3, 43.6)	9,879	19.3	(18.8, 19.8)	2.22 (2.16, 2.29)	23.6

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

Half of the children in Māori households (over 7,400) were in households with low equalised household incomes, 2.6 times the proportion of other children. Over 40% of adults in Māori households (over 10,900) lived in low income households, more than twice the proportion of other adults.

Table 19: Households with no access to a motor vehicle, Northland 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	1,581	10.1	(9.7, 10.6)	2,106	6.0	(5.8, 6.3)	1.68 (1.58, 1.78)	4.1
2013	2,040	11.9	(11.4, 12.3)	1,953	5.3	(5.1, 5.6)	2.23 (2.10, 2.36)	6.5
People (% age-standardised)								
2006	4,068	7.9	(7.6, 8.1)	2,655	2.0	(1.8, 2.1)	4.03 (3.76, 4.31)	5.9
2013	5,184	9.8	(9.6, 10.1)	2,553	2.2	(2.1, 2.4)	4.41 (4.13, 4.71)	7.6

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, 12% of Māori households had no access to a motor vehicle, over twice the proportion of non-Māori households. The proportion of Māori households without a vehicle increased between 2006 and 2013.

Table 20: People in households with no access to telephone, mobile/cell phone, internet, or any telecommunications, Northland 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	9,189	15.5	(15.2, 15.8)	12,078	10.3	(10.0, 10.5)	1.51 (1.46, 1.56)	5.2
No telephone	16,101	32.5	(32.1, 32.9)	7,899	12.6	(12.3, 12.9)	2.57 (2.50, 2.65)	19.9
No internet	21,078	39.0	(38.6, 39.4)	15,435	13.7	(13.4, 14.1)	2.84 (2.77, 2.91)	25.3
No tele-communications	2,316	4.4	(4.2, 4.6)	831	1.1	(1.0, 1.2)	4.06 (3.69, 4.47)	3.3

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, 39% of people in Māori households had no access to the internet, 32% had no landline, 15% did not have a cell phone, and 4% had no access to any telecommunications in the home. The largest absolute gap between Northland Māori and non-Māori households was in access to the internet (a difference of 25 percentage points).

Housing

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

Housing problem (a big problem)	Northland DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Too small	2,500*	6.7*	(4.6, 8.8)	5.3	(4.7, 5.9)
Damp	4,500	12.9	(10.1, 15.6)	11.3	(10.5, 12.2)
Hard to keep warm	7,000	18.9	(15.7, 22.0)	16.5	(15.4, 17.7)
Needs repairs	6,500	17.5	(14.0, 20.9)	13.8	(12.7, 14.9)
Pests in the house	3,000	7.5	(5.4, 9.5)	5.8	(5.1, 6.5)

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

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

Housing problems reported to be a big problem by Northland Māori adults in 2013 included difficulty keeping the house warm (19%), needing repairs (18%), and damp (13%). Seven percent felt their house was too small and 8% 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, Northland DHB, 2013

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage	
	Number	%	(95% CI)	Number	%	(95% CI)			
Households	7,785	45.9	(45.2, 46.7)	7,107	19.7	(19.2, 20.1)	2.34	(2.27, 2.40)	26.2
Children under 18 years (% age- standardised)	11,013	57.2	(56.5, 57.9)	4,467	27.3	(26.7, 28.0)	2.09	(2.04, 2.15)	29.9
Adults 18 years and over (% age- standardised)	14,415	48.2	(47.7, 48.8)	11,589	28.6	(28.1, 29.1)	1.69	(1.65, 1.72)	19.6

Source: 2013 Census, Statistics New Zealand

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

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

In 2013, 7,785 Māori households were rented, making up 46% of all Māori households, compared to 20% of non-Māori households.

Among children living in a Māori household, 57% (over 11,000) were living in rented homes, compared to 27% (4,500 children) in non-Māori households.

Just under half of adults living in Māori households (48%) were living in rented accommodation (around 14,400), two-thirds higher than the proportion of adults living in non-Māori households (29%).

Household crowding

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

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage	
	Number	%	(95% CI)	Number	%	(95% CI)			
Households	2,037	11.9	(11.4, 12.3)	573	1.6	(1.4, 1.7)	7.57	(6.92, 8.30)	10.3%
People (% age standardised)	11,247	23.0	(22.7, 23.4)	2,652	5.4	(5.2, 5.6)	4.25	(4.07, 4.44)	17.6%

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 more than 7 times as likely as non-Māori households to be classified as crowded using the Canadian National Occupancy Standard, with over 2000 homes needing at least one additional bedroom, affecting over 11,000 people. People living in Māori households were 4 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, Northland DHB, 2013

Measure	Māori households			Non-Māori households			Māori/non-Māori ratio (95% CI)	Difference in percentage
	Number	%	(95% CI)	Number	%	(95% CI)		
Households	1,356	8.0	(7.6, 8.4)	1,407	3.9	(3.7, 4.1)	2.07 (1.93, 2.23)	4.1%
People (% age standardised)	3,933	7.7	(7.5, 8.0)	2,757	4.0	(3.8, 4.2)	1.93 (1.82, 2.03)	3.7%

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).

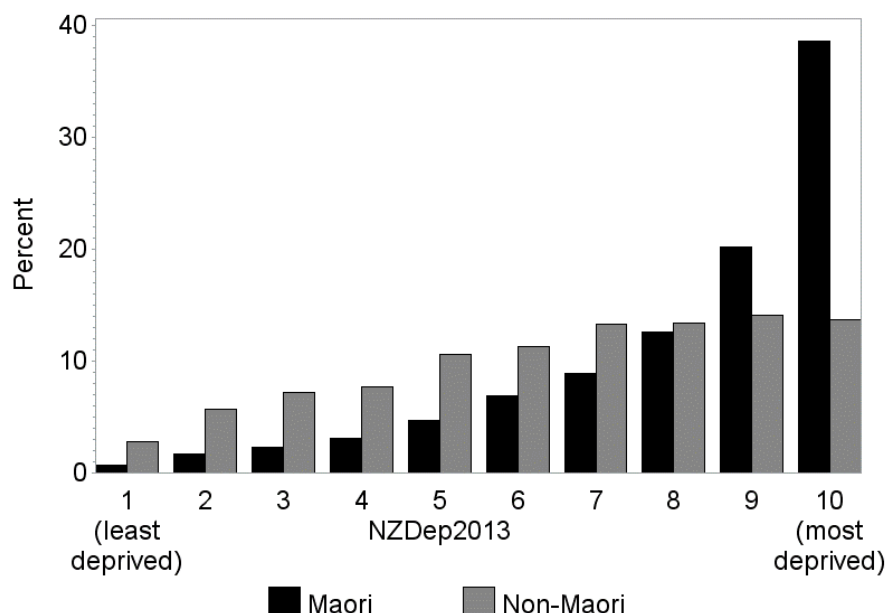
A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.

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

In 2013, 8% of Māori households (1,356 homes) had no heating, twice the proportion of non-Māori households (1,407 homes).

Area deprivation

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



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

Northland Māori and non-Māori have a more deprived small area profile than the national population. In 2013, 80% of Māori lived in the four most deprived decile areas, as did 55% of non-Māori (see accompanying Excel table). However, 39% of Māori lived in the most deprived areas (decile 10) compared to 14% of non-Māori.



Mauri ora: Pepi, tamariki

– Infants and children

This section presents information on infants and children. Indicators include birth-weight and gestation, immunisations, breastfeeding and other well-child/tamariki ora indicators, oral health, skin infections, middle ear disease, 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, Northland DHB, 2009–2013

Indicator	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	% of live births (95% CI)		Ave. no. per year	% of live births (95% CI)			
Low birth-weight	98	7.1	(6.5, 7.7)	41	4.4	(3.8, 5.0)	1.61 (1.37, 1.88)	2.7
High birth-weight	37	2.7	(2.3, 3.1)	26	2.8	(2.3, 3.3)	0.95 (0.76, 1.19)	-0.1
Preterm	105	7.6	(6.9, 8.2)	52	5.7	(5.0, 6.4)	1.33 (1.15, 1.53)	1.9

Source: Birth registrations, Ministry of Health

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

During 2009 to 2013 there were 1,386 Māori infants born per year on average, 60% of all live births in the DHB (2,307 per year). On average, 98 Māori babies per year were born with low birth-weight, at a rate of 7%, 61% higher than the rate for non-Māori; 37 Māori infants per year (3%) were born with high birth-weight, and 105 per year (8%) were born preterm, at a rate 33% higher than non-Māori.

Well child/Tamariki ora indicators

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

Indicator	Period	Māori	
		Count	%
1. Babies enrolled with a Primary Health Organisation (PHO) by three months old	20 Aug to 19 Nov 2013	187	66
11. Babies exclusively or fully breastfed at 2 weeks	January to June 2013	451	82
12. Babies exclusively or fully breastfed at 6 weeks		432	78
19. Mothers smoke-free two weeks postnatal		310	60
5. Children under 5 years enrolled with oral health services (PHO enrolled children)	2012	3,939	83
7. Children starting school who have participated in ECE	2013	1,064	86
15. Children with a healthy weight at 4 years, DHB of service	July to Dec 2013	331	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: Plunket. 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, 66% of Māori babies were enrolled with a PHO by three months of age. In the first half of 2013, 82% of Māori babies were breastfed at two weeks of age and 78% at six weeks. Sixty percent of Māori mothers were smoke-free two weeks after giving birth.

Among pre-school children enrolled with a PHO 83% of Māori were enrolled with oral health services in 2012. In 2013, 86% of Māori children who started school had participated in early childhood education. Two-thirds of Māori children who had their BMI recorded at their B4 School Check had a healthy weight.

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

Milestone age	Māori		Non-Māori		Māori/non-Māori ratio	Difference in percentage
	No. fully immunised for age	% fully immunised	No. fully immunised for age	% fully immunised		
6 months	801	61%	692	77%	0.78	-17%
8 months	1,178	87%	790	89%	0.98	-2%
12 months	1,208	90%	817	89%	1.01	1%
18 months	1,055	76%	804	82%	0.93	-6%
24 months	1,273	90%	836	86%	1.04	4%
5 years	1,077	76%	788	74%	1.03	2%

Source: National Immunisation Register

In the 12 months to 31 December 2014, 61% of Māori infants aged six months were fully immunised, compared to 77% of non-Māori infants. However, 87% of Māori children aged eight months and 90% of those aged 24 months had completed their appropriate immunisations. At five years of age 76% of Māori children were fully immunised.

Oral health

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

Age group	Māori				Non-Māori				Māori/non-Māori ratio % with caries (95% CI)	Difference in percentage
	Total	% with caries (95% CI)	Mean DMFT		Total	% with caries (95% CI)	Mean DMFT			
Age 5	750	77 (74, 80)	4.8		529	49 (45, 54)	2.0		1.57 (1.43, 1.73)	28%
Year 8	722	65 (62, 69)	2.3		433	38 (33, 42)	0.9		1.74 (1.52, 1.98)	28%

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.

Three-quarters of Māori children aged five years in 2013 had caries, 50% higher than the proportion of non-Māori children. The mean number of decayed, missing or filled teeth was 4.8 for Māori and 2.0 for non-Māori. Of those in Year 8, 65% of Māori children had caries, 70% higher than non-Māori with a mean DMFT of 2.3 compared to 0.9.

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

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)			
Female	156	1,735.0 (1,584.5, 1,899.8)		62	740.7 (641.6, 855.1)		2.34 (1.98, 2.78)	994.3
Male	166	1,748.7 (1,601.3, 1,909.6)		77	873.3 (767.2, 994.0)		2.00 (1.71, 2.34)	875.4
Total	321	1,741.8 (1,635.1, 1,855.5)		139	807.0 (733.0, 888.5)		2.16 (1.92, 2.42)	934.8

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 321 hospital admissions per year on average for tooth and gum disease among Māori children, at a rate that was twice as high as non-Māori, or just over 900 more admissions per 100,000 children per year.

Middle ear disease

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

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)				
Female	44	494.4	(417.1, 586.1)	36	436.7	(361.2, 528.1)	1.13	(0.88, 1.46)	57.7
Male	74	775.5	(680.0, 884.4)	53	621.2	(531.6, 725.8)	1.25	(1.02, 1.53)	154.3
Total	119	635.0	(572.2, 704.6)	89	529.0	(469.0, 596.7)	1.20	(1.02, 1.41)	106.0

Source: NMDS

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

On average, there were 119 admissions per year for grommet insertions among Māori children per year, at a rate 20% higher than the non-Māori rate, or 106 more procedures per 100,000 Māori children.

Healthy skin

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

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)				
Female	64	704.5	(611.6, 811.6)	20	239.0	(185.0, 308.8)	2.95	(2.20, 3.95)	465.5
Male	57	590.0	(508.0, 685.2)	25	288.6	(230.3, 361.5)	2.04	(1.56, 2.68)	301.4
Total	121	647.3	(584.0, 717.4)	45	263.8	(222.7, 312.5)	2.45	(2.01, 2.99)	383.5

Source: NMDS

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

On average there were 121 admissions per year for serious skin infections among Māori children. The rate was nearly 2.5 times as high as for non-Māori children, or 384 more admissions per 100,000 children per year.

Acute rheumatic fever

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

Age group and Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)				
0–14 years									
Female	6	67.9	(42.8, 107.7)	<1	3.5	(0.5, 24.5)	19.66	(2.62, 147.26)	64.4
Male	8	87.3	(59.0, 129.3)	<1	3.7	(0.5, 26.3)	23.60	(3.20, 174.15)	83.6
Total	14	77.6	(57.5, 104.7)	1	3.6	(0.9, 14.3)	21.70	(5.25, 89.64)	74.0
15–24 years									
Female	1	29.7	(11.1, 79.1)	<1	6.2	(0.9, 44.2)	4.77	(0.53, 42.70)	23.5
Male	1	30.0	(11.2, 80.2)	<1	5.8	(0.8, 41.1)	5.18	(0.58, 46.41)	24.2
Total	3	29.8	(14.9, 59.7)	1	6.0	(1.5, 24.0)	4.97	(1.05, 23.43)	23.8

Source: NMDS

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

Among Northland Māori children aged 14 years and under, on average 14 per year were hospitalised at least once for acute rheumatic fever, at a rate 22 times as high as the rate for non-Māori, or 74 more children per 100,000. Among Māori aged 15 to 24 years, an average of three per year were admitted, at 5 times the non-Māori rate, or 24 more youth admitted 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, Northland DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)			
Female	563	6,226.7	(5,936.5, 6,531.0)	314	3,886.1	(3,645.1, 4,142.9)	1.60 (1.48, 1.74)	2,340.6
Male	720	7,418.4	(7,111.6, 7,738.3)	366	4,289.3	(4,042.4, 4,551.3)	1.73 (1.61, 1.86)	3,129.0
Total	1,282	6,822.5	(6,610.0, 7,041.9)	680	4,087.7	(3,913.6, 4,269.5)	1.67 (1.58, 1.76)	2,734.8

Source: NMDS

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

There were around 1,280 potentially avoidable hospitalisations per year on average among Māori children aged 14 years and under, at a rate nearly 70% higher than the non-Māori rate, or over 2,700 more admissions per 100,000.

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

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Rate per 100,000 (95% CI)		Ave. no. per year	Rate per 100,000 (95% CI)			
Female	400	4,447.9	(4,203.0, 4,707.0)	226	2,771.4	(2,570.0, 2,988.6)	1.60 (1.46, 1.76)	1,676.5
Male	472	4,913.2	(4,663.6, 5,176.1)	256	2,981.5	(2,777.4, 3,200.5)	1.65 (1.51, 1.80)	1,931.7
Total	872	4,680.5	(4,504.3, 4,863.6)	482	2,876.4	(2,731.6, 3,029.0)	1.63 (1.53, 1.74)	1,804.1

Source: NMDS

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

On average there were 872 admissions per year for ambulatory care sensitive conditions among Māori children, at a rate two-thirds higher again than the rate for non-Māori children, or around 1,800 more admissions per 100,000 children.



Mauri ora: Rangatahi

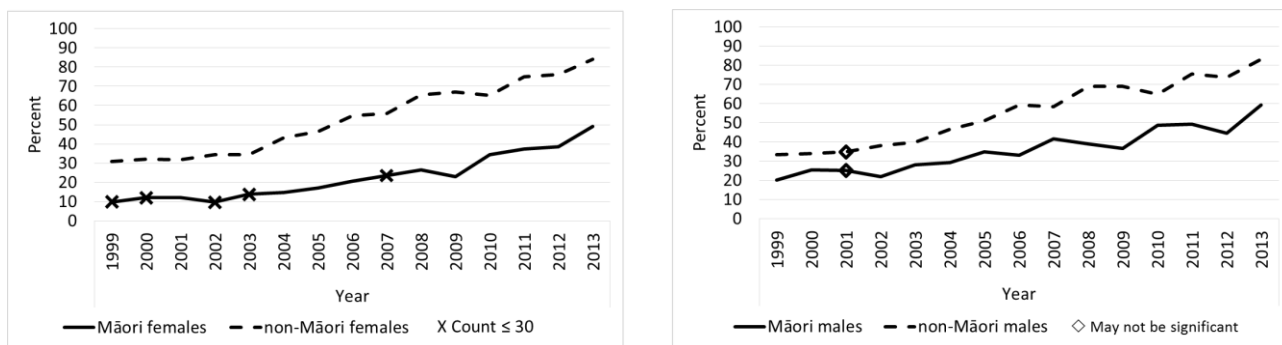
– Young adults

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

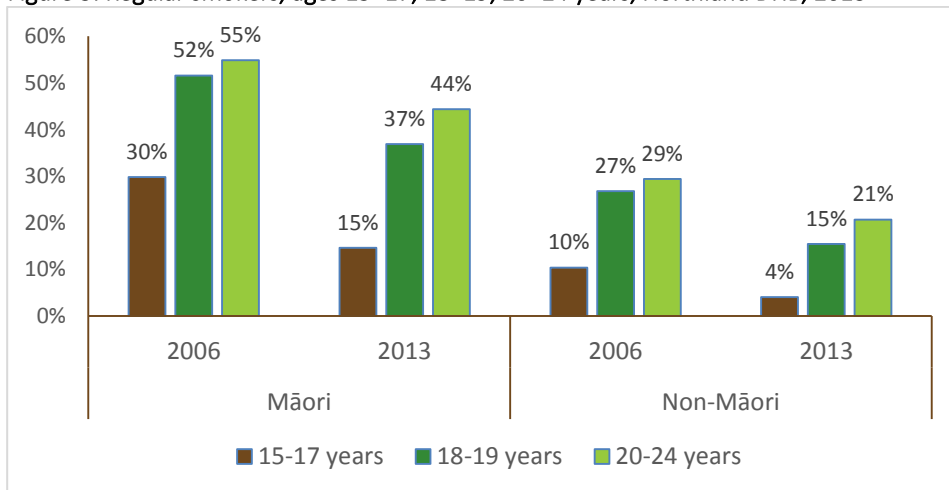
Figure 2: Trends in the proportion of students aged 14–15 years who have never smoked, by gender, Northland DHB, 1999–2013



Source: ASH Year 10 Snapshot Survey, 2013

Over the last 15 years there has been a significant increase in the number of Māori aged 14 or 15 who have never smoked cigarettes (Figure 2). In 2013, 57% had never smoked.

Figure 3: Regular smokers, ages 15–17, 18–19, 20–24 years, Northland 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 Northland since 2006. However, smoking uptake remains relatively high among those aged 18–24 years, with a sizeable group starting smoking in this age group. At ages 20–24 years, 44% of Māori were smoking regularly in 2013. Non-Māori in each age group were less than half as likely as Māori to smoke regularly.

Immunisations

Table 35: Human papilloma virus immunisations (HPV) by birth cohorts, Northland 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	274	51.7%	288	44.3%	1.17	7.4%
1999	15	2012	297	56.0%	297	47.1%	1.19	8.9%
1998	16	2011	293	55.3%	247	38.6%	1.43	16.7%
1997	17	2010	326	60.4%	256	42.7%	1.41	17.7%

Source: National Immunisation Register.

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

Human papilloma virus immunisation rates in Northland are higher for Māori than for non-Māori girls. Just over half of Māori girls who were age 14 years in 2014 had received all three doses by September 2014. The highest coverage was among Māori girls aged 17 years (60%).

Mental health

Table 36: Hospitalisations for serious injury from intentional self-harm, 15–24 and 25–44 years, Northland 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	21	468.3	(366.5, 598.3)		36	715.0	(592.4, 863.1)	0.65	(0.48, 0.89)	-246.7
Male	9	196.2	(133.4, 288.5)		13	246.2	(179.7, 337.2)	0.80	(0.48, 1.31)	-50.0
Total	30	332.2	(270.1, 408.6)		49	480.6	(408.9, 564.9)	0.69	(0.53, 0.90)	-148.4
25–44 years										
Female	18	282.8	(216.3, 369.7)		23	192.8	(151.0, 246.3)	1.47	(1.02, 2.11)	90.0
Male	11	207.0	(145.9, 293.6)		13	125.0	(90.4, 172.8)	1.66	(1.03, 2.67)	82.0
Total	29	244.9	(197.7, 303.3)		36	158.9	(130.7, 193.2)	1.54	(1.15, 2.06)	86.0

Source: NMDS

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

Māori aged 15–24 years were less likely than non-Māori to be admitted to hospital for serious intentional self-harm. However, Māori aged 25–44 years were just over 50% more likely than non-Māori to be admitted. On average 29 Māori per year in this age group were admitted for injury caused by intentional self-harm.



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 Northland can be found in the accompanying Excel® tables labelled 'Death registrations' and 'Hospitalisations by principal diagnosis'. For example, the hospitalisations table shows disparities between Northland Māori and non-Māori in rates of admission for atrial fibrillation and flutter, acute bronchitis and bronchiolitis, bronchiectasis, gastric ulcers, gallstones (cholelithiasis), renal failure, glomerular diseases, epilepsy, 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, Northland DHB, 2013

Health status	Northland DHB			New Zealand	
	Estimated number	%	(95% CI)	%	(95% CI)
Excellent	6,000	15.7	(12.9, 18.5)	18.1	(16.8, 19.3)
Very good	14,000	37.5	(33.4, 41.5)	37.0	(35.5, 38.5)
Good	11,500	30.6	(26.8, 34.3)	28.5	(27.3, 29.7)
Fair / poor	6,000	16.2	(12.7, 19.8)	16.4	(15.3, 17.5)

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

Just over half of Northland Māori adults (53%) report having excellent or very good health and another third (31%) described their health as good in 2013. One in six (16%) report having fair or poor health status.

Smoking status

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

Smoking status	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Difference in percentage	
	Number	%	(95% CI)	Number	%	(95% CI)			
2006									
Regular smoker	11,334	45.3	(44.7, 46.0)	14,220	23.3	(22.9, 23.7)	1.95	(1.91, 1.99)	22.1%
Ex-smoker	5,202	18.2	(17.7, 18.7)	20,280	20.8	(20.4, 21.1)	0.88	(0.85, 0.90)	-2.6%
Never smoked	9,531	36.4	(35.9, 37.0)	39,027	56.0	(55.5, 56.4)	0.65	(0.64, 0.66)	-19.5%
2013									
Regular smoker	9,471	36.2	(35.6, 36.8)	10,392	16.4	(16.1, 16.8)	2.20	(2.14, 2.26)	19.7%
Ex-smoker	6,948	21.7	(21.3, 22.2)	22,251	21.1	(20.8, 21.5)	1.03	(1.00, 1.06)	0.6%
Never smoked	11,505	42.0	(41.4, 42.6)	43,170	62.5	(62.0, 62.9)	0.67	(0.66, 0.68)	-20.4%

Source: 2006 and 2013 Census, Statistics New Zealand

Notes: % is age-standardised to the 2001 Māori population.
Regular smokers smoke one or more cigarettes per day.

Between 2006 and 2013 the proportion of Māori adults who smoked cigarettes regularly decreased from 45% to 36%. The corresponding increase in those who had never smoked was greater than the 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, Northland 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	375	1,675.4	(1,573.3, 1,784.2)	1,016	824.7	(780.2, 871.7)	2.03 (1.87, 2.21)	850.8
Male	399	2,304.7	(2,169.0, 2,448.9)	1,440	1,387.6	(1,328.7, 1,449.1)	1.66 (1.54, 1.79)	917.1
Total	774	1,990.1	(1,904.4, 2,079.6)	2,457	1,106.1	(1,069.0, 1,144.6)	1.80 (1.70, 1.90)	883.9

Source: NMDS

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

Around 770 Northland Māori were admitted to hospital per year for diseases of the circulatory system (including heart disease and stroke), at a rate 80% higher than non-Māori, or 884 more admissions per 100,000.

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

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Ischaemic heart disease admissions								
Female	91	405.7	(358.1, 459.7)	261	180.2	(164.5, 197.3)	2.25 (1.93, 2.63)	225.6
Male	120	650.5	(584.2, 724.2)	487	444.4	(416.4, 474.2)	1.46 (1.29, 1.66)	206.1
Total	211	528.1	(486.7, 573.1)	748	312.3	(296.1, 329.3)	1.69 (1.53, 1.86)	215.8
Angiography procedures								
Female	61	285.5	(245.4, 332.2)	158	148.5	(132.4, 166.5)	1.92 (1.59, 2.32)	137.0
Male	82	459.7	(403.6, 523.5)	349	368.6	(341.3, 398.0)	1.25 (1.07, 1.45)	91.1
Total	143	372.6	(337.5, 411.4)	507	258.6	(242.6, 275.6)	1.48 (1.28, 1.62)	114.0
Angioplasty procedures								
Female	14	65.8	(48.2, 90.0)	51	45.0	(37.6, 53.9)	1.46 (1.02, 2.10)	20.8
Male	31	181.9	(146.6, 225.7)	155	168.7	(151.2, 188.1)	1.08 (0.85, 1.37)	13.2
Total	45	123.9	(103.6, 148.1)	207	106.8	(97.2, 117.4)	1.16 (0.95, 1.42)	17.0
Coronary Artery Bypass Graft (CABG)								
Female	7	34.5	(22.4, 53.0)	13	9.5	(6.7, 13.7)	3.61 (2.06, 6.33)	24.9
Male	16	83.9	(63.3, 111.4)	53	47.2	(39.1, 57.0)	1.78 (1.27, 2.50)	36.7
Total	24	59.2	(46.7, 75.0)	66	28.4	(24.0, 33.6)	2.09 (1.56, 2.79)	30.8
Acute coronary syndrome admissions								
Female	70	308.0	(266.8, 355.5)	190	131.7	(118.0, 146.9)	2.34 (1.95, 2.80)	176.3
Male	84	470.0	(413.2, 534.7)	346	321.3	(297.3, 347.3)	1.46 (1.26, 1.70)	148.7
Total	154	389.0	(353.3, 428.3)	535	226.5	(212.5, 241.4)	1.72 (1.53, 1.93)	162.5

Source: NMDS.

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

On average, 211 Māori per year were admitted to hospital for ischaemic heart disease, at a rate 69% higher than non-Māori. Of these, 154 were admitted with acute coronary syndrome (72% higher rate than non-Māori).

Māori men had higher rates of angiography, angioplasty and coronary artery bypass graft on average (CABG) than Māori women. There were 143 angiography procedures conducted for Māori patients per year, at a rate 48% higher than non-Māori. On average, 31 Māori men and 14 Māori women per year had angioplasty procedures, with the rate for Māori women 46% higher than the non-Māori rate. Seven Māori women per year had a CABG, at over three

times the rate of non-Māori women. Sixteen Māori men per year on average had a CABG at a rate of 78% higher than non-Māori men.

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

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Heart failure									
Female	52	211.5	(178.3, 250.9)	91	36.8	(31.3, 43.2)	5.75	(4.55, 7.27)	174.7
Male	70	377.5	(327.2, 435.7)	120	69.9	(60.8, 80.2)	5.40	(4.43, 6.59)	307.7
Total	122	294.5	(263.8, 328.9)	211	53.3	(48.0, 59.3)	5.52	(4.74, 6.44)	241.2
Stroke									
Female	51	216.7	(183.4, 256.1)	152	106.8	(92.2, 123.8)	2.03	(1.62, 2.53)	109.9
Male	43	244.3	(203.1, 293.8)	168	132.8	(116.3, 151.6)	1.84	(1.47, 2.31)	111.5
Total	94	230.5	(203.3, 261.3)	320	119.8	(108.6, 132.2)	1.92	(1.64, 2.26)	110.7
Hypertensive disease									
Female	13	70.5	(49.6, 100.1)	26	20.3	(14.7, 27.9)	3.48	(2.16, 5.59)	50.2
Male	7	42.4	(26.7, 67.4)	18	16.5	(11.1, 24.5)	2.57	(1.40, 4.73)	25.9
Total	19	56.4	(42.7, 74.7)	44	18.4	(14.3, 23.6)	3.07	(2.11, 4.47)	38.1

Source: NMDS.

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

There were around 120 admissions per year on average for Māori with heart failure, at over 5 times the rate for non-Māori, or 241 more admissions per 100,000.

On average, 94 Māori per year were admitted for stroke, twice the non-Māori rate, or 111 more admissions per 100,000.

There were 19 Māori admissions per year on average for hypertensive disease, at 3 times the rate of non-Māori, or nearly 40 more admissions per 100,000.

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

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Chronic rheumatic heart disease									
Female	7	37.4	(23.8, 58.9)	11	7.9	(5.3, 11.8)	4.71	(2.57, 8.63)	29.5
Male	3	30.6	(15.1, 61.9)	7	5.5	(3.2, 9.3)	5.60	(2.31, 13.56)	25.1
Total	10	34.0	(22.7, 50.9)	18	6.7	(4.9, 9.2)	5.07	(3.03, 8.50)	27.3
Heart valve replacements									
Female	5	25.6	(15.4, 42.6)	13	7.9	(5.5, 11.3)	3.25	(1.74, 6.05)	17.7
Male	4	23.8	(13.1, 43.2)	27	22.1	(17.0, 28.7)	1.08	(0.56, 2.07)	1.7
Total	10	24.7	(16.7, 36.5)	40	15.0	(12.1, 18.6)	1.65	(1.05, 2.57)	9.7

Source: NMDS.

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

On average, there were 10 hospital admissions per year for Māori with chronic rheumatic heart disease, at a rate 5 times that of non-Māori.

Heart valve replacements were conducted on 10 Māori per year on average. The rate for Māori women was 3 times the non-Māori rate, while there was no difference between male rates.

Table 43: Early deaths from circulatory system disease, Northland 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	25	60.2	(50.3, 72.1)	20	11.1	(8.8, 13.9)	5.45 (4.08, 7.27)	49.2
Male	44	128.4	(112.1, 147.2)	56	32.3	(27.9, 37.3)	3.98 (3.26, 4.86)	96.2
Total	69	94.3	(84.6, 105.2)	76	21.7	(19.2, 24.5)	4.35 (3.69, 5.13)	72.7

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 69 Māori per year died early from circulatory system disease, at a rate 4 times as high as for non-Māori, or 73 more deaths per 100,000. Māori men had twice the mortality rate of Māori women.

Diabetes

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

Indicator	Māori		Non-Māori		Māori/non-Māori ratio	Difference in percentage
	Count	% (crude)	Count	% (crude)		
Prevalence of diabetes (all ages)	4,215	8.2	6,978	6.5	1.26	1.7%
People with diabetes regularly receiving metformin or insulin, 25+	2,014	47.8	3,100	44.4	1.08	3.4%
People with diabetes having regular Hb1Ac monitoring, 25+	3,622	85.9	6,235	86.6	0.99	-0.6%
People with diabetes having regular screening for renal disease, 25+	2,871	68.1	4,821	69.1	0.99	-1.0%

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.

Over 4,200 Northland Māori were estimated to have diabetes in 2013, giving a crude prevalence of 8%, 26% higher than the non-Māori crude prevalence. The prevalence has not been adjusted for age and the disparity would likely be higher if age differences were taken into account. Half of Māori with diabetes were regularly receiving metformin or insulin in 2013. Over 85% were having regular monitoring of blood glucose levels and 68% were being screened for renal disease.

Table 45: Hospitalisations for lower limb amputations for people with concurrent diabetes, 15 years and over, Northland 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	7	21.2	(13.7, 32.7)	4	1.9	(1.0, 3.7)	11.21 (5.05, 24.90)	19.3
Male	13	46.6	(33.8, 64.2)	11	9.7	(5.9, 15.9)	4.82 (2.66, 8.74)	36.9
Total	20	33.9	(26.1, 43.9)	15	5.8	(3.7, 8.9)	5.87 (3.55, 9.72)	28.1

Source: NMDS

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

On average 20 Māori individuals per year with diabetes had lower limbs amputated, at a rate nearly 6 times that of non-Māori.

Cancer

Table 46: Most common cancer registrations for Māori by site, all ages, Northland 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	101	242.6	(221.1, 266.2)	310	177.2	(165.0, 190.3)	1.37	(1.22, 1.54)	65.4
Breast	29	72.3	(61.1, 85.6)	86	57.5	(51.0, 64.9)	1.26	(1.02, 1.55)	14.7
Lung	20	41.0	(33.5, 50.1)	23	9.0	(7.3, 11.1)	4.55	(3.39, 6.11)	32.0
Uterus	8	19.1	(13.9, 26.3)	13	7.8	(5.8, 10.5)	2.45	(1.58, 3.78)	11.3
Colorectal	5	11.3	(7.6, 16.9)	49	19.4	(16.4, 23.0)	0.58	(0.38, 0.90)	-8.1
Male									
All cancers	88	236.5	(214.5, 260.8)	391	186.0	(175.1, 197.7)	1.27	(1.13, 1.43)	50.5
Lung	20	49.1	(40.2, 60.1)	31	11.1	(9.2, 13.2)	4.45	(3.40, 5.82)	38.1
Prostate	18	41.0	(33.2, 50.7)	126	54.2	(49.7, 59.1)	0.76	(0.60, 0.95)	-13.1
Colorectal	10	25.0	(18.7, 33.6)	55	22.0	(19.0, 25.5)	1.14	(0.82, 1.58)	3.1
Stomach	5	14.0	(9.5, 20.8)	7	2.8	(1.9, 4.1)	5.05	(2.90, 8.79)	11.2

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 101 cancer registrations per year on average among Northland Māori females, at a rate 37% higher than non-Māori. The most common cancers registered for Māori females were breast, lung, uterine, and colorectal cancers. Registration rates were higher for Māori than for non-Māori women for cancers of the lung (4.6 times as high), uterus (2.5 times as high) and breast (26% higher), but lower for colorectal cancer (around 40% lower).

Among Northland Māori males there were 88 cancer registrations per year on average, at a rate 27% higher than non-Māori. Lung, prostate, colorectal, and stomach cancer were the most common cancers registered for Māori males. Māori registrations rates were higher than those of non-Māori for lung cancer (4 times as high) and stomach cancer (5 times as high), but they were around 25% lower for prostate cancer.

Table 47: Most common cancer deaths for Māori by site, all ages, Northland 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	49	111.4	(97.6, 127.2)	133	52.6	(47.3, 58.4)	2.12	(1.79, 2.51)	58.8
Lung	18	37.5	(30.3, 46.4)	20	8.4	(6.7, 10.6)	4.46	(3.26, 6.11)	29.1
Breast	7	17.1	(12.1, 24.2)	17	9.5	(7.0, 12.9)	1.80	(1.13, 2.87)	7.6
Pancreas	3	5.5	(3.2, 9.4)	7	2.6	(1.7, 3.9)	2.11	(1.07, 4.17)	2.9
Stomach	3	6.8	(3.8, 12.1)	1	0.8	(0.3, 1.8)	9.02	(3.22, 25.26)	6.0
Male									
All cancers	49	134.6	(118.3, 153.2)	173	66.7	(60.9, 73.1)	2.02	(1.72, 2.36)	67.9
Lung	15	39.0	(31.0, 49.2)	30	10.9	(9.1, 13.1)	3.59	(2.67, 4.82)	28.2
Colorectal	5	13.8	(9.2, 20.8)	23	7.8	(6.4, 9.6)	1.76	(1.11, 2.79)	6.0
Prostate	4	9.2	(5.8, 14.5)	25	6.5	(5.4, 7.9)	1.41	(0.86, 2.32)	2.7
Stomach	3	8.8	(5.4, 14.4)	5	2.0	(1.3, 3.3)	4.35	(2.19, 8.64)	6.8
Liver	3	9.1	(5.4, 15.4)	4	2.2	(1.1, 4.6)	4.07	(1.68, 9.87)	6.9

Source: Death registrations, Ministry of Health

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

For Māori females, deaths from cancer accounted for 32% of all deaths, with a rate twice that of non-Māori. Lung cancer was the most common cause of cancer death, followed by cancers of the breast, pancreas and stomach. Māori mortality rates for each of these cancers were significantly higher than non-Māori rates.

For Māori males, cancer deaths accounted for 27% of all deaths, with a rate twice that of non-Māori males. Lung cancer was the most common cause of cancer death at a rate 3.6 times the non-Māori rate. The next most common were colorectal, prostate, stomach, and liver cancers. Liver and stomach cancer mortality rates were 4 times the non-Māori rates and colorectal cancer mortality was 76% higher.

Breast and cervical cancer screening

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

Māori			Non-Māori		
Number screened	Eligible population	% screened	Number screened	Eligible population	% screened
4,660	7,020	66.4%	16,136	22,065	73.1%

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 up to the end of 2014, 66% of Māori women and 73% of non-Māori women in Northland had been screened.

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

Māori					Non-Māori				
Eligible population	Women screened in		Women screened in		Eligible population	Women screened in		Women screened in	
	last 5 years	5-year coverage %	last 3 years	3-year coverage %		last 5 years	5-year coverage %	last 3 years	3-year coverage %
12,350	9,996	80.9%	7,843	63.5%	28,829	25,937	90.0%	21,985	76.3%

Source: National Screening Unit, Ministry of Health

Note: Population is adjusted for hysterectomy.

Among women aged 25 to 69 years, 81% of Māori women and 90% of non-Māori women had had a cervical smear test during the five years prior to December 2014. The three year cervical screening coverage was 64% for Māori women and 76% 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, Northland 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	43	482.8	(406.5, 573.4)	17	206.3	(157.1, 271.0)	2.34	(1.70, 3.23)	276.5
Male	60	621.3	(536.5, 719.4)	31	359.8	(293.8, 440.5)	1.73	(1.34, 2.22)	261.5
Total	103	552.0	(493.7, 617.2)	49	283.1	(240.6, 333.0)	1.95	(1.60, 2.38)	269.0
15–34 years									
Female	22	278.4	(218.0, 355.5)	15	158.8	(118.9, 212.2)	1.75	(1.20, 2.56)	119.6
Male	8	114.2	(75.6, 172.3)	9	96.6	(66.7, 140.0)	1.18	(0.68, 2.06)	17.5
Total	30	196.3	(159.0, 242.3)	25	127.7	(101.7, 160.5)	1.54	(1.13, 2.10)	68.5
35–64 years									
Female	26	307.1	(243.8, 386.8)	29	112.2	(88.0, 143.2)	2.74	(1.96, 3.83)	194.8
Male	10	124.2	(85.5, 180.3)	7	32.7	(19.7, 54.2)	3.80	(2.03, 7.12)	91.5
Total	36	215.6	(177.2, 262.4)	36	72.5	(58.1, 90.3)	2.98	(2.21, 4.00)	143.2
65 years and over									
Female	6	271.7	(168.8, 437.4)	7	56.4	(36.0, 88.3)	4.82	(2.51, 9.28)	215.4
Male	1	80.4	(29.8, 217.0)	4	32.8	(18.3, 58.8)	2.45	(0.77, 7.76)	47.6
Total	7	176.0	(114.3, 271.1)	11	44.6	(31.2, 63.6)	3.95	(2.26, 6.91)	131.5

Source: NMDS.

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

There were 103 admissions for asthma per year among Māori children aged 0–14 years, at a rate twice that of non-Māori. Young Māori adults were admitted at a rate more than 50% higher than non-Māori, with an average of 30 admissions per year. Among Māori adults aged 35–64 years, there were 36 admissions per year on average, at 3 times the rate of non-Māori. Māori aged 65 years and over were admitted at a rate nearly 4 times the non-Māori rate, with seven admissions per year on average.

Table 51: Hospitalisations for chronic obstructive pulmonary disease (COPD), 45 years and over, Northland 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	144	1,554.9	(1,411.6, 1,712.8)	169	331.7	(300.1, 366.8)	4.69	(4.08, 5.39)	1,223.2
Male	95	1,272.9	(1,131.6, 1,431.8)	203	355.4	(324.5, 389.2)	3.58	(3.09, 4.16)	917.5
Total	240	1,413.9	(1,311.7, 1,524.1)	372	343.6	(321.1, 367.6)	4.12	(3.72, 4.55)	1,070.3

Source: NMDS.

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

There were 240 hospitalisations per year on average for Māori with COPD, at a rate 4 times that of non-Māori, or 1,070 more admissions per 100,000.

Table 52: Early deaths from respiratory disease, Northland DHB, 2007–2011

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)		Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)				
Female	9	21.8	(16.2, 29.3)	8	5.1	(3.3, 8.1)	4.25	(2.47, 7.31)	16.7
Male	8	22.9	(16.5, 31.7)	13	7.6	(5.4, 10.6)	3.02	(1.90, 4.82)	15.3
Total	17	22.3	(17.9, 27.8)	21	6.3	(4.8, 8.3)	3.52	(2.48, 4.99)	16.0

Source: Mortality data, Ministry of Health

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

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

On average, 17 Māori per year died early from respiratory disease, at a rate 3.5 times the non-Māori rate, or 16 more deaths per 100,000.

Mental disorders

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

Disorder	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate (95% CI)		Ave. no. per year	Age-standardised rate (95% CI)			
Female								
All disorders	275	927.4	(862.8, 997.0)	340	483.2	(445.5, 524.1)	1.92 (1.72, 2.14)	444.2
Schizophrenia	114	410.8	(368.0, 458.6)	71	101.1	(85.5, 119.5)	4.07 (3.33, 4.97)	309.8
Mood (affective)	88	259.0	(226.9, 295.6)	116	119.5	(103.4, 138.1)	2.17 (1.78, 2.64)	139.4
—Bipolar	53	164.7	(139.5, 194.6)	62	54.3	(44.3, 66.5)	3.04 (2.33, 3.95)	110.5
—Depressive episode	26	60.9	(47.1, 78.7)	29	29.3	(21.5, 39.8)	2.08 (1.39, 3.11)	31.6
Substance use	38	144.2	(119.6, 174.0)	57	103.2	(86.5, 123.3)	1.40 (1.08, 1.81)	41.0
—Alcohol	29	110.0	(88.6, 136.4)	45	74.8	(61.1, 91.6)	1.47 (1.09, 1.98)	35.1
Anxiety, stress-related	19	62.6	(47.9, 82.0)	49	76.2	(61.5, 94.5)	0.82 (0.58, 1.16)	-13.6
Male								
All disorders	264	1,113.0	(1,034.9, 1,197.1)	315	568.5	(525.8, 614.8)	1.96 (1.76, 2.18)	544.5
Schizophrenia	183	789.4	(723.7, 861.2)	116	274.5	(244.5, 308.1)	2.88 (2.49, 3.32)	515.0
Mood (affective)	28	109.4	(87.2, 137.3)	51	69.3	(56.5, 84.9)	1.58 (1.16, 2.14)	40.2
—Bipolar	10	37.0	(25.3, 54.1)	18	25.3	(18.4, 34.8)	1.46 (0.89, 2.40)	11.7
—Depressive episode	12	51.0	(36.2, 72.0)	24	32.9	(24.2, 44.7)	1.55 (0.98, 2.46)	18.1
Substance use	31	132.1	(107.1, 163.0)	74	140.6	(120.2, 164.4)	0.94 (0.72, 1.22)	-8.5
—Alcohol	22	94.7	(73.9, 121.4)	54	94.0	(78.0, 113.4)	1.01 (0.74, 1.37)	0.7
Anxiety, stress-related	10	42.0	(28.8, 61.2)	26	35.2	(26.4, 46.9)	1.19 (0.74, 1.92)	6.8
Total								
All disorders	539	1,020.2	(969.0, 1,074.2)	654	525.9	(497.1, 556.4)	1.94 (1.80, 2.09)	494.4
Schizophrenia	297	600.1	(560.4, 642.7)	187	187.8	(170.6, 206.6)	3.20 (2.84, 3.60)	412.4
Mood (affective)	117	184.2	(164.2, 206.6)	167	94.4	(83.9, 106.2)	1.95 (1.66, 2.30)	89.8
—Bipolar	64	100.9	(86.6, 117.5)	80	39.8	(33.5, 47.2)	2.54 (2.01, 3.19)	61.1
—Depressive episode	37	56.0	(45.4, 69.0)	53	31.1	(25.0, 38.6)	1.80 (1.33, 2.44)	24.9
Substance use	69	138.2	(120.1, 159.0)	131	121.9	(108.4, 137.1)	1.13 (0.94, 1.36)	16.3
—Alcohol	51	102.3	(86.9, 120.5)	99	84.4	(73.6, 96.9)	1.21 (0.98, 1.50)	17.9
Anxiety, stress-related	29	52.3	(41.9, 65.3)	75	55.7	(46.9, 66.2)	0.94 (0.71, 1.24)	-3.4

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 around twice as high for Māori as for non-Māori.

Among Māori females, the most common cause of admission was schizophrenia related disorders, with 114 admissions per year on average, at a rate 4 times that of non-Māori females. Admissions for mood disorders, and substance use disorder were also higher for Māori than for non-Māori females.

Among Māori males, the overall admission rate was twice the non-Māori rate. Admissions for schizophrenia type disorders were the most common, at a rate 3 times the non-Māori rate. The admission rate for mood disorders was nearly 60% higher than the non-Māori rate.

Gout

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

Indicator	Māori		Non-Māori		Māori/non-Māori ratio	Difference in percentage
	Count	%	Count	%		
Gout prevalence	2,661	8.0	3,367	4.2	1.90	3.8%
People with gout who received allopurinol regularly	1,012	38.0	1,320	39.2	0.97	-1.2%
Colchicine use by people with gout not dispensed allopurinol	256	9.6	352	10.5	0.92	-0.8%
NSAID use by people with gout	1,283	48.2	1,439	42.7	1.13	5.5%
Serum urate test within six months following allopurinol dispensing	565	35.8	653	35.9	1.00	-0.1%

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

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

Around 2,660 Māori were estimated to have gout in 2011, a prevalence of 8%, 90% higher than the prevalence in non-Māori. Nearly 40% of Māori with gout regularly received allopurinol, a preventive therapy to lower urate levels. Of those who received allopurinol, 36% had a lab test for serum urate levels within the following six months.

Table 55: Hospitalisations for gout, 25 years and over, Northland 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	16	65.4 (48.3, 88.5)		5	6.3 (2.5, 15.7)		10.44 (3.97, 27.48)	59.2
Male	48	325.9 (273.6, 388.3)		24	47.3 (33.7, 66.4)		6.89 (4.71, 10.09)	278.6
Total	64	195.7 (167.7, 228.3)		29	26.8 (19.5, 36.8)		7.31 (5.13, 10.40)	168.9

Source: NMDS

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

There were 64 hospital admissions for gout per year on average among Northland Māori, more frequent among males than females. The rate of admission for Māori was 7 times the rate for non-Māori, or 169 more admissions per 100,000.

Hip fractures

Table 56: Hospitalisations for hip fractures, 65 years and over, Northland 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	7	277.2 (179.0, 429.4)		90	404.5 (351.3, 465.7)		0.69 (0.43, 1.09)	-127.3
Male	3	169.8 (87.4, 330.0)		35	211.6 (172.4, 259.6)		0.80 (0.40, 1.61)	-41.7
Total	10	223.5 (154.3, 323.8)		126	308.0 (274.2, 346.0)		0.73 (0.49, 1.07)	-84.5

Source: NMDS

On average, 10 Māori per year aged 65 and over were admitted to hospital for hip fractures, at a rate of just over 220 per 100,000.

Elective surgery

Table 57: Hospitalisations for hip replacements, 50 years and over, Northland 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	23	339.1 (266.8, 431.1)	91	248.9 (217.6, 284.6)	1.36 (1.04, 1.79)	90.3
Male	18	334.8 (255.8, 438.1)	75	249.5 (215.8, 288.6)	1.34 (0.99, 1.82)	85.2
Total	41	337.0 (281.4, 403.5)	166	249.2 (225.7, 275.1)	1.35 (1.10, 1.66)	87.8

Source: NMDS

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

On average, 41 Māori aged 50 years and over were admitted to hospital per year for a hip replacement, at a rate 35% higher than the rate for non-Māori, or 88 more admissions per 100,000.

Table 58: Publicly funded hospitalisations for cataract surgery, 45 years and over, Northland 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	113	1,132.1 (1,014.7, 1,263.1)	265	428.9 (395.4, 465.3)	2.64 (2.30, 3.03)	703.2
Male	80	1,049.7 (923.2, 1,193.6)	244	412.5 (379.0, 448.8)	2.55 (2.18, 2.97)	637.3
Total	193	1,090.9 (1,003.1, 1,186.4)	509	420.7 (396.7, 446.1)	2.59 (2.34, 2.87)	670.2

Source: NMDS

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

Around 190 Northland Māori per year aged 45 years and over were admitted to hospital for cataract surgery. The rate for Māori was 2.6 times that for non-Māori, or 670 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 Northland Region.

Hospitalisations

Table 59: All-cause hospitalisations, all ages, Northland 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	11,514	35,717.0	(35,315.5, 36,123.0)	16,058	22,700.4	(22,401.5, 23,003.2)	1.57 (1.55, 1.60)	13,016.6
Male	9,918	31,317.3	(30,942.3, 31,696.7)	15,510	19,067.8	(18,803.0, 19,336.3)	1.64 (1.61, 1.67)	12,249.5
Total	21,432	33,517.1	(33,242.0, 33,794.5)	31,567	20,884.1	(20,684.0, 21,086.0)	1.60 (1.58, 1.63)	12,633.1

Source: NMDS

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

On average, there were around 21,400 Māori hospital admissions per year and over 31,500 non-Māori admissions. All-cause admission rates were 60% higher for Māori than for non-Māori, or 12,633 more admissions per 100,000.

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

Potentially avoidable hospitalisations

Table 60: Potentially avoidable hospitalisations, 0–74 years, Northland DHB, 2011–2013

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	1,759	5,818.1	(5,655.4, 5,985.4)	2,181	3,933.4	(3,807.9, 4,063.0)	1.48 (1.42, 1.54)	1,884.6
Male	1,664	5,824.8	(5,658.3, 5,996.3)	2,500	3,983.0	(3,859.6, 4,110.3)	1.46 (1.40, 1.53)	1,841.8
Total	3,422	5,821.4	(5,704.5, 5,940.7)	4,681	3,958.2	(3,869.8, 4,048.6)	1.47 (1.43, 1.52)	1,863.2

Source: NMDS

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

More than 3,400 Māori hospital admissions per year were potentially avoidable through population based prevention strategies, with a rate 47% higher than for non-Māori, or 1,863 more admissions per 100,000.

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

Gender	Māori			Non-Māori			Māori/non-Māori ratio (95% CI)	Rate difference
	Ave. no. per year	Age-standardised rate per 100,000 (95% CI)		Ave. no. per year	Age-standardised rate per 100,000 (95% CI)			
Female	1,016	3,402.2	(3,277.7, 3,531.5)	877	1,683.7	(1,599.4, 1,772.4)	2.02 (1.90, 2.15)	1,718.5
Male	1,028	3,568.7	(3,439.4, 3,702.8)	1,124	1,815.0	(1,730.7, 1,903.4)	1.97 (1.85, 2.09)	1,753.7
Total	2,043	3,477.9	(3,387.9, 3,570.4)	2,000	1,745.6	(1,685.7, 1,807.6)	1.99 (1.91, 2.08)	1,732.4

Source: NMDS

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

On average, there were 2,043 ambulatory care sensitive hospitalisations per year among Māori, at a rate that was twice the non-Māori rate, or 1,732 more admissions per 100,000.

Mortality

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

Gender	Māori		Non-Māori		Difference in years
	Years (95% credible interval)		Years (95% credible interval)		
Female	75.9	(75.2, 76.7)	84.5	(84.1, 84.8)	-8.6
Male	71.3	(70.5, 72.0)	80.6	(80.3, 81.0)	-9.3

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

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

Life expectancy at birth is a summary measure of age-specific mortality rates during a specific period. It does not take account of changes in mortality rates after that period. During 2012–2014, among residents of the Northland Region, life expectancy at birth was 75.9 years for Māori females, 8.6 years lower than for non-Māori females (84.5 years). For Māori males, life expectancy was 71.3 years, 9.3 years lower than that of non-Māori males (80.6 years).

Table 63: All-cause deaths, all ages, Northland 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	150	356.5	(337.7, 376.5)	441	142.5	(134.6, 150.8)	2.50 (2.31, 2.71)	214.1
Male	176	539.8	(514.0, 566.8)	500	235.0	(224.1, 246.4)	2.30 (2.15, 2.46)	304.7
Total	325	448.2	(432.1, 464.8)	941	188.8	(182.0, 195.8)	2.37 (2.25, 2.50)	259.4

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 325 Māori deaths per year on average in Northland from 2008 to 2012. The Māori mortality rate was over twice the non-Māori rate, or 259 more deaths per 100,000.

Table 64: Leading causes of death for Māori, all ages, Northland 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	25	45.1	(37.6, 54.1)	75	13.0	(11.4, 14.9)	3.46 (2.76, 4.34)	32.1
Lung cancer	18	37.5	(30.3, 46.4)	20	8.4	(6.7, 10.6)	4.46 (3.26, 6.11)	29.1
Stroke	13	24.9	(19.4, 32.0)	44	7.7	(6.2, 9.4)	3.25 (2.36, 4.50)	17.3
Diabetes	11	21.5	(16.2, 28.5)	12	3.0	(2.0, 4.3)	7.24 (4.52, 11.60)	18.5
COPD	10	18.7	(14.1, 24.8)	24	6.1	(4.9, 7.6)	3.07 (2.15, 4.38)	12.6
Male								
IHD	37	101.8	(87.8, 118.0)	102	32.9	(29.3, 36.9)	3.09 (2.57, 3.73)	68.9
Diabetes	17	44.6	(35.9, 55.3)	13	4.3	(3.2, 5.7)	10.36 (7.25, 14.81)	40.3
Accidents	15	61.2	(48.4, 77.3)	28	36.0	(28.4, 45.7)	1.70 (1.22, 2.37)	25.2
Lung cancer	15	39.0	(31.0, 49.2)	30	10.9	(9.1, 13.1)	3.59 (2.67, 4.82)	28.2
COPD	8	19.7	(14.5, 26.8)	35	9.6	(8.1, 11.4)	2.05 (1.44, 2.90)	10.1
Total								
IHD	62	73.4	(65.3, 82.5)	177	23.0	(21.0, 25.1)	3.20 (2.76, 3.71)	50.5
Lung cancer	33	38.3	(32.7, 44.8)	50	9.6	(8.4, 11.1)	3.97 (3.21, 4.91)	28.6
Diabetes	28	33.0	(27.8, 39.2)	26	3.6	(2.9, 4.6)	9.08 (6.82, 12.09)	29.4
Accidents	23	43.0	(35.5, 52.2)	48	23.6	(19.3, 28.9)	1.82 (1.38, 2.41)	19.4
Stroke	21	22.4	(18.3, 27.4)	78	8.3	(7.2, 9.5)	2.72 (2.13, 3.47)	14.2

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 Northland Māori women were ischaemic heart disease (IHD), lung cancer, stroke, diabetes mellitus, and chronic obstructive pulmonary disease (COPD). Mortality rates for these conditions were between 3 and 7 times as high for Māori women as for non-Māori women.

For Northland Māori men, the leading causes of death were IHD, diabetes mellitus, accidents, lung cancer, and COPD. Mortality rates were between 2 and 10 times as high for Māori as for 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, Northland 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	79	204.2 (184.2, 226.4)		85	71.8 (62.1, 83.0)		2.84 (2.38, 3.40)	132.4
Male	105	330.7 (302.4, 361.7)		151	131.2 (118.0, 145.8)		2.52 (2.20, 2.90)	199.6
Total	184	267.5 (249.9, 286.3)		236	101.5 (93.2, 110.5)		2.64 (2.36, 2.94)	166.0

Source: Mortality, Ministry of Health

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

There were over 180 potentially avoidable Māori deaths per year in Northland, at a rate 2.6 times the non-Māori rate, or close to 170 more deaths per 100,000.

Table 66: Amenable mortality, 0–74 years, Northland 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	56	145.3 (128.6, 164.3)		53	45.0 (37.5, 53.6)		3.24 (2.61, 4.02)	100.5
Male	78	245.0 (220.8, 271.9)		111	102.3 (90.3, 115.8)		2.40 (2.04, 2.82)	142.8
Total	134	195.2 (180.2, 211.4)		164	73.6 (66.4, 81.5)		2.65 (2.33, 3.02)	121.6

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 2.7 times as high for Maori as for non-Maori, or 122 more deaths per 100,000. On average, 134 Maori per year died 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 Northland Māori were falls, complications of medical and surgical care, exposure to mechanical forces, transport accidents, and assault.

Table 67: Hospitalisations for injuries, all ages, Northland 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	614	2,098.4	(2,000.0, 2,201.6)	1,334	1,812.3	(1,730.5, 1,898.0)	1.16 (1.08, 1.24)	286.0
Male	921	3,524.6	(3,390.1, 3,664.5)	1,535	2,627.0	(2,528.3, 2,729.6)	1.34 (1.27, 1.42)	897.6
Total	1,535	2,811.5	(2,727.7, 2,897.9)	2,868	2,219.7	(2,155.2, 2,286.1)	1.27 (1.21, 1.32)	591.8

Source: NMDS

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

On average there were 1,535 hospitalisations for injury among Māori, at a rate 27% higher than non-Māori, or approximately 590 more admissions per 100,000.

Table 68: Hospitalisations for assault, all ages, Northland 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	48	186.8	(158.1, 220.6)	18	43.2	(31.9, 58.5)	4.32 (3.06, 6.10)	143.6
Male	93	399.3	(353.7, 450.9)	63	167.7	(143.8, 195.7)	2.38 (1.96, 2.90)	231.6
Total	141	293.1	(265.6, 323.3)	81	105.5	(91.9, 121.0)	2.78 (2.35, 3.29)	187.6

Source: NMDS

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

On average 141 Māori per year were admitted to hospital for injury caused by assault, at a rate almost 3 times the non-Māori rate, or 188 more admissions per 100,000. Males had higher admission rates than females.

Table 69: Deaths from injury, all ages, Northland 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	10	33.3	(24.8, 44.7)	22	15.6	(11.2, 21.7)	2.13 (1.37, 3.32)	17.7
Male	20	81.9	(66.7, 100.6)	40	57.3	(47.3, 69.3)	1.43 (1.08, 1.89)	24.6
Total	29	57.6	(48.6, 68.2)	62	36.5	(30.9, 43.0)	1.58 (1.25, 2.00)	21.1

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 29 Northland Māori died from injuries per year, at a rate nearly 60% higher than non-Māori, or 21 more deaths per 100,000. Mortality rates were higher for males than females for both Māori and non-Māori.



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Appendix 1: Population projections

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

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

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

Age	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	2013(Base)			2014			2015			2016		
0	670	640	1,320	680	640	1,320	670	640	1,310	670	640	1,310
1-4	2,800	2,610	5,410	2,750	2,650	5,400	2,740	2,640	5,380	2,740	2,600	5,340
5-9	3,160	3,040	6,190	3,330	3,070	6,400	3,440	3,160	6,610	3,510	3,250	6,760
10-14	3,140	2,800	5,940	3,060	2,810	5,860	2,960	2,780	5,750	2,920	2,810	5,730
15-19	2,710	2,550	5,250	2,830	2,600	5,430	2,920	2,680	5,600	2,960	2,680	5,640
20-24	1,860	2,020	3,880	1,900	1,990	3,890	2,010	1,940	3,950	2,080	1,960	4,040
25-29	1,390	1,680	3,070	1,470	1,780	3,250	1,500	1,850	3,350	1,590	1,880	3,470
30-34	1,200	1,510	2,710	1,230	1,490	2,720	1,280	1,550	2,830	1,320	1,640	2,960
35-39	1,270	1,640	2,910	1,240	1,620	2,860	1,210	1,550	2,760	1,200	1,520	2,720
40-44	1,500	1,730	3,230	1,460	1,770	3,220	1,440	1,820	3,250	1,380	1,760	3,150
45-49	1,530	1,750	3,280	1,530	1,690	3,220	1,510	1,670	3,170	1,520	1,700	3,220
50-54	1,580	1,860	3,440	1,580	1,860	3,450	1,600	1,880	3,480	1,570	1,820	3,390
55-59	1,230	1,420	2,660	1,310	1,550	2,860	1,350	1,620	2,970	1,380	1,700	3,080
60-64	890	1,110	2,000	950	1,140	2,100	1,020	1,200	2,220	1,080	1,280	2,360
65-69	690	810	1,500	710	850	1,560	730	910	1,640	790	970	1,750
70-74	520	610	1,130	540	650	1,190	540	670	1,210	550	680	1,230
75-79	300	420	720	330	440	780	380	500	880	430	530	960
80-84	160	240	390	170	260	430	190	270	460	210	300	510
85-89	60	100	150	70	100	170	70	120	180	70	130	190
90+	10	30	40	10	40	60	20	50	70	20	60	80
All Ages	26,700	28,600	55,200	27,100	29,000	56,200	27,600	29,500	57,100	28,000	29,900	57,900
	2017			2018			2019			2020		
0	670	630	1,300	670	640	1,310	670	640	1,310	670	640	1,310
1-4	2,710	2,580	5,290	2,700	2,570	5,270	2,690	2,550	5,250	2,690	2,550	5,240
5-9	3,510	3,240	6,750	3,480	3,270	6,750	3,420	3,310	6,730	3,410	3,290	6,700
10-14	3,010	2,930	5,940	3,110	2,990	6,100	3,280	3,010	6,290	3,380	3,100	6,480
15-19	2,920	2,590	5,510	2,860	2,490	5,350	2,770	2,490	5,260	2,660	2,460	5,120
20-24	2,170	2,010	4,180	2,250	2,060	4,310	2,360	2,110	4,470	2,440	2,180	4,630
25-29	1,650	1,950	3,600	1,750	1,950	3,710	1,790	1,920	3,710	1,900	1,870	3,770
30-34	1,370	1,640	3,000	1,370	1,710	3,090	1,440	1,810	3,250	1,470	1,870	3,340
35-39	1,200	1,510	2,710	1,200	1,550	2,750	1,230	1,520	2,750	1,280	1,580	2,850
40-44	1,310	1,770	3,090	1,270	1,650	2,920	1,230	1,630	2,870	1,210	1,560	2,760
45-49	1,510	1,710	3,220	1,490	1,740	3,230	1,440	1,770	3,210	1,420	1,820	3,240
50-54	1,540	1,780	3,320	1,500	1,740	3,240	1,490	1,680	3,170	1,470	1,650	3,120
55-59	1,450	1,750	3,200	1,530	1,830	3,360	1,530	1,830	3,360	1,550	1,850	3,390
60-64	1,140	1,340	2,480	1,180	1,390	2,570	1,250	1,510	2,770	1,290	1,570	2,850
65-69	810	1,020	1,830	840	1,070	1,910	900	1,100	1,990	950	1,150	2,110
70-74	590	710	1,300	630	760	1,390	640	790	1,440	670	840	1,510
75-79	430	530	970	450	540	990	460	580	1,040	460	590	1,050
80-84	230	350	580	240	360	600	260	380	640	310	430	730
85-89	80	140	220	90	170	270	100	190	290	120	190	310
90+	20	60	80	30	60	90	30	70	100	30	80	110
All Ages	28,300	30,200	58,600	28,600	30,500	59,200	29,000	30,900	59,900	29,400	31,300	60,600

These projections were derived in October 2014.

Source: Statistics New Zealand

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

Projected Total Population by Age and Sex at 30 June 2014–43 (2013-Base)

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

Age	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	2013(Base)			2014			2015			2016		
0	1,180	1,120	2,300	1,100	1,040	2,140	1,120	1,060	2,180	1,130	1,080	2,210
1-4	5,100	4,780	9,880	5,010	4,790	9,800	4,850	4,660	9,500	4,730	4,520	9,250
5-9	6,190	5,960	12,150	6,370	5,950	12,330	6,600	6,080	12,680	6,720	6,230	12,950
10-14	6,270	5,840	12,110	6,140	5,790	11,930	5,970	5,690	11,660	5,960	5,650	11,610
15-19	5,750	5,300	11,060	5,790	5,320	11,110	5,740	5,310	11,040	5,630	5,180	10,810
20-24	4,190	4,190	8,390	4,300	4,280	8,580	4,560	4,320	8,880	4,690	4,430	9,120
25-29	3,590	3,970	7,560	3,880	4,260	8,140	4,080	4,520	8,600	4,260	4,710	8,970
30-34	3,440	3,900	7,340	3,610	3,920	7,530	3,820	4,060	7,880	4,030	4,310	8,350
35-39	3,900	4,600	8,500	3,710	4,420	8,130	3,600	4,250	7,850	3,610	4,130	7,740
40-44	4,930	5,620	10,540	4,780	5,470	10,250	4,630	5,380	10,010	4,420	5,130	9,550
45-49	5,310	5,910	11,220	5,250	5,870	11,120	5,240	5,770	11,010	5,220	5,830	11,050
50-54	5,820	6,450	12,270	5,830	6,420	12,250	5,780	6,470	12,260	5,710	6,330	12,040
55-59	5,580	5,980	11,560	5,660	6,200	11,870	5,790	6,320	12,110	5,780	6,460	12,230
60-64	5,370	5,590	10,960	5,470	5,690	11,160	5,470	5,750	11,220	5,670	5,910	11,580
65-69	4,920	4,960	9,880	5,080	5,120	10,200	5,310	5,380	10,680	5,450	5,550	10,990
70-74	3,750	3,720	7,470	3,890	3,880	7,770	3,990	4,040	8,020	4,050	4,190	8,250
75-79	2,470	2,540	5,020	2,600	2,680	5,280	2,860	2,900	5,760	3,080	3,110	6,190
80-84	1,650	1,870	3,520	1,660	1,930	3,580	1,670	1,940	3,610	1,730	2,010	3,740
85-89	840	1,240	2,080	880	1,220	2,100	910	1,250	2,160	990	1,260	2,250
90+	310	640	950	340	690	1,020	350	710	1,060	360	750	1,110
All Ages	80,600	84,200	164,700	81,400	84,900	166,300	82,300	85,900	168,200	83,200	86,800	170,000
	2017			2018			2019			2020		
0	1,140	1,090	2,230	1,150	1,090	2,240	1,160	1,100	2,260	1,170	1,120	2,290
1-4	4,640	4,430	9,070	4,590	4,380	8,980	4,640	4,420	9,060	4,670	4,460	9,130
5-9	6,710	6,190	12,900	6,610	6,180	12,790	6,430	6,090	12,520	6,250	5,960	12,210
10-14	6,100	5,810	11,910	6,210	5,900	12,100	6,380	5,890	12,270	6,580	5,990	12,580
15-19	5,540	5,050	10,590	5,460	4,880	10,330	5,310	4,820	10,130	5,120	4,690	9,810
20-24	4,750	4,420	9,180	4,730	4,380	9,110	4,740	4,360	9,100	4,630	4,300	8,940
25-29	4,400	4,900	9,300	4,640	4,960	9,600	4,680	4,990	9,670	4,870	4,960	9,830
30-34	4,230	4,400	8,630	4,330	4,660	8,990	4,560	4,910	9,470	4,710	5,120	9,840
35-39	3,660	4,090	7,750	3,750	4,140	7,890	3,890	4,130	8,030	4,070	4,250	8,320
40-44	4,200	4,960	9,170	4,020	4,670	8,700	3,810	4,470	8,280	3,680	4,270	7,960
45-49	5,110	5,770	10,880	4,990	5,680	10,670	4,840	5,520	10,360	4,660	5,420	10,080
50-54	5,600	6,230	11,830	5,450	6,060	11,510	5,390	6,010	11,400	5,360	5,890	11,250
55-59	5,930	6,560	12,490	6,010	6,700	12,710	6,020	6,670	12,690	5,960	6,710	12,670
60-64	5,720	6,070	11,790	5,800	6,220	12,030	5,890	6,450	12,340	6,000	6,540	12,540
65-69	5,460	5,600	11,060	5,510	5,650	11,160	5,610	5,760	11,370	5,590	5,810	11,410
70-74	4,320	4,450	8,770	4,630	4,780	9,410	4,790	4,940	9,740	5,010	5,190	10,200
75-79	3,240	3,330	6,570	3,290	3,420	6,710	3,420	3,570	6,990	3,490	3,710	7,200
80-84	1,810	2,090	3,890	1,890	2,150	4,040	1,990	2,270	4,270	2,220	2,470	4,690
85-89	1,000	1,300	2,290	1,010	1,320	2,340	1,020	1,380	2,400	1,030	1,390	2,410
90+	410	790	1,200	450	820	1,270	480	830	1,310	480	850	1,330
All Ages	84,000	87,500	171,500	84,500	88,100	172,600	85,000	88,600	173,600	85,600	89,100	174,700

These projections were derived in October 2014.

Source: Statistics New Zealand



Appendix 2: Technical notes

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

Data sources

Table 72: Data sources

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

Note: *no causes for 2012

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Data from the Census of Population and Dwellings

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

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

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

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

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

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

Data from Te Kupenga 2013

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

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

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

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

Deaths, hospitalisations and cancer registrations

Ethnicity

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

Residence

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

Hospital transfers

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

Suppression of causes of death or hospitalisation

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

Ninety-five percent confidence intervals

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

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

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

Age standardisation

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

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

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

Table 73: 2001 Census total Māori population

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

ICD-10 codes

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

Table 74: Potentially avoidable hospitalisation ICD-10 codes for children aged 1 month to 14 years

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

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

Source: Anderson et al (2012)

Notes:

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

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

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

Table 75: Ambulatory care sensitive hospitalisation ICD-10 codes for children aged 1 month to 14 years

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

Source: Anderson et al (2012)

Notes:

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

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

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

Table 76: Ambulatory care sensitive hospitalisation ICD-10 codes for people aged 1 month to 74 years

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

Source: Ministry of Health

Notes:

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

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

* Aged 15 months to 14 years.

† Each admission counts as a half.

‡ Aged six months to 14 years.

§ Aged 15 years and over.

|| Aged more than 15 years.

¶ Aged 5 years and over.

Table 77: Avoidable mortality ICD-10 codes

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

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

Notes: *Added from amenable mortality

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

***All ages added from amenable mortality

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

Table 78: Amenable mortality ICD-10 codes

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

Source: Ministry of Health 2010

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



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