**

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For the Ministry of Health

Bay of Plenty

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.

Design by Graham Tipene

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Suggested citation: Robson B, Purdie G, Simmonds S, Waa A, Rameka R, Andrewes J. 2015*. Bay of Plenty District Health Board Māori Health Profile 2015.* Wellington: Te Rōpū Rangahau Hauora a Eru Pōmare.

ISBN 978-0-9941252-1-7 (electronic)

Published in October 2015 by Te Rōpū Rangahau Hauora a Eru Pōmare, University of Otago Wellington, PO Box 7343, Wellington South.

Further information on Te Rōpū Rangahau Hauora a Eru Pōmare can be found [here.](http://www.otago.ac.nz/wellington/departments/publichealth/research/erupomare/)





# He Mihi

Tūi Tuia i Te Herenga Tangata

Te tangi a Te Rōpū Rangahau Hauora a Eru Pōmare.

Tui Tui Tui Tuia

E ngā maunga whakahii, ngā pū kōrero huri noa

Tēnā koutou, tēnā koutou, tēnā tātou katoa.

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

Haere atu rā, okioki ai.

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

Anei te mihi ki ngā kaimahi hauora

Whakapiki te kaha

Whakapiki te ora

Whakapiki te māramatanga

Kia eke tātou katoa ki Te Pae Ora.

# Acknowledgements

Many people have contributed their time and expertise to the Māori Health Profiles. We would like to thank members of Te Tumu Whakarae, DHB Planning and Funding groups, Public Health Services, Māori providers, and Māori governance groups who contributed to our consultation discussions. We would also like to acknowledge those who participated in the workshop at the Tū Kaha conference in Hastings, October 2014.

Paula Searle, Peter Himona, Te Taiawatea Moko-Mead, Li-Chia Yeh, Roimata Timutimu, Natalie Talamaivao from Te Kete Hauora, Ministry of Health provided valuable advice.

The following people assisted us to obtain data: Roslyn Parker, Dale Robison, Catherine Gerard and Mishra Suriyaprakash from the Ministry of Health; Ester Goodwin and Andrew Maclaren, Statistics New Zealand; June Atkinson, University of Otago Wellington; Nikki Turner, Immunisation Advisory Centre; Ali Ajmal, Action on Smoking and Health New Zealand.

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

Doone Winnard and Sarah Sharpe from Counties Manukau DHB provided very useful peer review of early drafts.

We appreciated the discussions and input of the participants of the Māori Health Profiles Summer School in February 2015, and a special thanks to the guest presenters Paula Searle, Kirikowhai Mikaere, Ana Morrison, Sonia Hawkins, Gay Keating and Jean Gilmour.

We would like to particularly acknowledge Olga Rameka who provided cultural support and guidance throughout the project, ngā mihi aroha ki a koe.

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

− Bay of Plenty at a glance

Bay of Plenty population

* In 2013, 53,700 Māori lived in the Bay of Plenty District Health Board region, 25% of the District’s total population. Forty percent of the District’s children aged 0–14 year were Māori, and 35% of those aged 15–24 years.
* The Bay of Plenty Māori population is youthful, but showing signs of ageing. In 2013, around half were under 25 years of age. The number of Māori aged 65 years and over will increase by nearly 40% between 2013 and 2020.

Whānau ora – Healthy families

* In 2013, most Bay of Plenty Māori adults (84%) 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 (78%).
* Being involved in Māori culture was important to three-quarters of Māori adults (76%). Spirituality was important to two-thirds (65%).
* A quarter (27%) of Bay of Plenty Māori could have a conversation about a lot of everyday things in te reo Māori in 2013.
* Practically all Bay of Plenty Māori (98%) had been to a marae at some time. Most (67%) had been to their ancestral marae, with over half (55%) stating they would like to go more often.
* Fifteen percent had taken part in traditional healing or massage in the last 12 months.

Wai ora – Healthy environments

Education

* In 2013, 86% of Bay of Plenty Māori children starting school had participated in early childhood education.
* In 2013, 48% of Māori adults aged 18 years and over had at least a Level 2 Certificate, an increase since 2006 (39%). The proportion was three quarters that of non-Māori.

Work

* In 2013, 14% of Māori adults aged 15 years and over were unemployed, over twice the non-Māori rate (6%).
* Most Māori adults (89%) do voluntary work.
* In 2013, Māori were more likely than non-Māori to look after someone who was disabled or ill, within or outside of the home.

Income and standard of living

* In 2013, 42% of children and 37% of adults in Māori households (defined as households with at least one Māori resident) were in households with low equivalised household incomes (under $15,172), compared to 17% of children and 19% of adults in other households.
* Ten percent of Bay of Plenty Māori adults reported putting up with feeling the cold a lot to keep costs down during the previous 12 months, 9% had gone without fresh fruit and vegetables, and 13% had postponed or put off visits to the doctor.
* Residents of Māori households were more likely than non-Māori to have no access to a motor vehicle (9% compared to 2%).
* People in Māori households were less likely to have access to telecommunications than those living in other households: 35% had no internet, 15% no mobile phone, 30% no telephone, and 4% had no access to any telecommunications in the home.

Housing

* The most common housing problems reported to be a big problem by Māori adults in 2013 were needing repairs (12%), finding it hard to keep warm (10%), and damp (7%).
* Almost half (47%) of children in Bay of Plenty Māori households were living in rented accommodation, twice the proportion of children in other households (24%).
* Bay of Plenty residents living in Māori households were 3.5 times as likely as others to be in crowded homes (i.e. requiring at least one additional bedroom) (21% compared to 6%).

Area deprivation

* Using the NZDep2013 index of small area deprivation, 50% of Bay of Plenty Māori lived in the two most deprived decile areas compared to 17% of non-Māori. Conversely, only 4% of Māori lived in the two least deprived decile areas while the proportion of non-Māori was 15%.

Mauri ora – Healthy individuals

Pepi, tamariki – Infants and children

* On average 1,360 Māori infants were born per year over the 2009–2013 period, 46% of all live births in the DHB. Seven percent of Māori and 6% of non-Māori babies had low birth weight.
* In 2013, 78% of Māori babies in Bay of Plenty 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, 85% of Māori children were fully immunised at 8 months of age, 91% at 24 months.
* In 2013, 74% of Bay of Plenty Māori children and 44% of non-Māori children aged 5 years had caries. At school Year 8, two thirds of Māori children and half of non-Māori children had caries. Māori children under 15 years were a third more likely than non-Māori to be hospitalised for tooth and gum disease.
* During 2011–2013, on average there were 127 hospital admissions per year for grommet insertions among Māori children (at a rate similar to non-Māori) and 112 admissions for serious skin infections (with the rate 2.5 times that of non-Māori children).
* Māori children under 15 years were 10 times as likely as non-Māori children to be hospitalised for acute rheumatic fever, with 6 children per year admitted at least once.
* On average 1,255 hospitalisations per year of Māori children were potentially avoidable through population-based health promotion and intersectoral actions, at a rate one-third higher than that of non-Māori.
* On average, 850 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 one-third higher than for non-Māori children.

Rangatahi – Young adults

* There has been a significant increase in the proportion of Bay of Plenty 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. However, Māori youth are twice as likely as non-Māori youth to smoke regularly.
* By September 2014, between 56% and 64% of Māori girls aged 14 to 17 years had received all three doses of the human papilloma virus (HPV) vaccine (highest at age 14 and lowest at age 17 years). Coverage was higher for Māori than for non-Māori.
* During 2011–2013 30 Māori aged 15–24 years and 21 aged 25–44 years were admitted per year for injury from intentional self-harm. Rates were lower for Māori than for non-Māori among those aged 15–24 years but similar to those of non-Māori at ages 25–44 years.
* Two Māori and no non-Māori aged 15–24 years were admitted to hospital per year with acute rheumatic fever during 2011–2013.

Pakeke – Adults

* Just over half of Māori adults in Bay of Plenty (53%) reported having excellent or very good health in 2013, and a third reported having good health. One in seven (14%) reported having fair or poor health.
* Smoking rates are decreasing, but were more than twice as high for Māori as for non-Māori in 2013 (36% compared to 15%).

Circulatory system diseases

* Māori adults aged 25 years were almost 80% more likely than non-Māori to be hospitalised for circulatory system diseases (including heart disease and stroke) during 2011–2013.
* Bay of Plenty Māori were 64% more likely than non-Māori to be admitted with acute coronary syndrome, 19% more likely to have angiography, just as likely to have angioplasty or coronary artery bypass and graft.
* Heart failure admission rates were 3.9 times as high for Māori as for non-Māori.
* Stroke admission rates were 87% higher for Māori than for non-Māori, and admissions for hypertension over twice as high.
* Chronic rheumatic heart disease admissions were 4.7 times as common for Māori as for non-Māori, and heart valve replacements twice as frequent.
* Māori under 75 years were 4 times as likely as non-Māori to die from circulatory system diseases during 2007–2011.

Diabetes

* In 2013, 5% of Māori and non-Māori were estimated to have diabetes. Half of Māori aged 25 years and over who had diabetes were regularly receiving metformin or insulin, 78% were having their blood sugar monitored regularly, and 59% were being screened regularly for renal disease.
* In 2011–2013 Māori with diabetes were 3.3 times as likely as non-Māori to have a lower limb amputated.

Cancer

* Compared to non-Māori, cancer incidence was 34% higher for Māori females while cancer mortality was 2.4 times as high. Among males, cancer incidence was similar for Māori and non-Māori, but cancer mortality was 78% higher for Māori than for non-Māori.
* Breast, lung, uterine and colorectal cancers were the most commonly registered among Bay of Plenty Māori women. The rate of lung cancer was 4.4 times the non-Māori rate, uterine cancer 84% higher, breast cancer 38% higher, and colorectal cancer 41% lower.
* Cancers of the lung, breast, uterus and stomach were the most frequent causes of cancer death for Māori women. Mortality rates for each cancer were significantly higher for Māori than for non-Māori women.
* Breast screening coverage of Māori women aged 45–69 years was 57% compared to 70% of non-Māori women at the end of 2014. Cervical screening coverage of Māori women aged 25–69 years was 62% over 3 years and 78% over five years (compared to 83% and 97% of non-Māori respectively).
* Lung, prostate, colorectal and liver cancers were the most common cancers among Bay of Plenty Māori men. Liver cancer registration rates were 10 times as high as for non-Māori men respectively and lung cancer almost 4 times, while colorectal cancers was 40% lower.
* Lung, liver, prostate, stomach and colorectal cancers were the most common cause of cancer death among Māori men. Mortality rates for liver, lung and stomach cancers were significantly higher for Māori than for non-Māori men.

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 for non-Māori in each age group.
* Māori under 75 years had 4 times the non-Māori rate of death from respiratory disease in 2007–2011.

Mental disorders

* Māori were 55% more likely than non-Māori to be admitted to hospital for a mental disorder during 2011–2013. Schizophrenia type disorders were the most common disorders, followed by mood disorders.

Gout

* In 2011 the prevalence of gout among Bay of Plenty Māori was estimated to be 8%, nearly twice the prevalence in non-Māori (4.2%).
* 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.
* In 2011–2013 the rate of hospitalisations for gout was 6.5 times as high for Māori as for non-Māori, indicating a higher rate of flare-ups.

All ages

Hospitalisations

* The all-cause rate of hospital admissions was 17% higher for Māori than for non-Māori during 2011–2013.
* Close to 3,400 Māori hospital admissions per year were potentially avoidable, with the rate 40% higher than for non-Māori. The ASH rate was 62% higher for Māori, with just over 2,000 admissions per year.

Mortality

* Life expectancy at birth for Māori in the Bay of Plenty Region during 2012–2014 was 76.7 years for Māori females (7.8 years lower than for non-Māori) and 72.3 years for Māori males (8.4 years lower than for non-Māori).
* The all-cause mortality rate for Bay of Plenty Māori was 2.3 times the non-Māori rate in 2008–2012.
* Leading causes of death for Māori females were ischaemic heart disease (IHD), lung cancer, COPD, stroke, and diabetes. Leading causes of death for Māori males were IHD, accidents, lung cancer, diabetes, and suicide.
* Potentially avoidable mortality and mortality amenable to health care were both 2.8 times as high for Māori as for non-Māori in Bay of Plenty during 2007–2011.

Injuries

* The rate of hospitalisation due to injury was 24% 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.
* Compared to non-Māori, rates of hospital admission for injury caused by assault were 4.2 times as high as for Māori females, and 2.6 times as high as for Māori males. Admission rates were higher for males than for females.
* Injury mortality was twice as high for Māori as for non-Māori in Bay of Plenty, and higher for males than for females.

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# Introduction

T

he 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](http://www.health.govt.nz/our-work/populations/maori-health/dhb-maori-health-plans-and-health-needs-assessments#hna).

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](http://www.health.govt.nz/our-work/populations/maori-health/he-korowai-oranga/pae-ora-healthy-futures). 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 **Hauora a Toi, the Bay of Plenty 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 Bay of Plenty DHB. Accompanying Excel tables also include data for the total Bay of Plenty 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](http://www.stats.govt.nz/tekupenga). Data from Te Kupenga is presented for Māori only.

Hospitalisation, cancer registration, and mortality rates and Census data were age–sex-standardised to the 2001 Māori population[[1]](#footnote-1).

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

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

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](http://www.health.govt.nz/publication/new-zealand-health-survey-annual-update-key-findings-2012-13)).

Other useful data sources include the Ministry of Health’s [publications](http://www.health.govt.nz/our-work/populations/maori-health/maori-health-publications) on Māori health, the Health Quality and Safety Commission’s [Atlas of Healthcare Variation](http://www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/atlas-of-healthcare-variation/), the [DHB](http://dnmeds.otago.ac.nz/departments/womens/paediatrics/research/nzcyes/dhb-2011-2013.html) reports and [Te Ohonga Ake](http://dnmeds.otago.ac.nz/departments/womens/paediatrics/research/nzcyes/maori.html) reports of the New Zealand Child and Youth Epidemiology Service, the [Trendly](http://www.trendly.co.nz/) health performance monitoring website, and the Māori Health Plan Indicator reports provided to DHBs.

# Te Tatauranga o te Iwi

− Key demographics

I

n 2013, 8% (53,700) of the country’s total Māori population lived in the Bay of Plenty District Health Board. The total population of the DHB (215,000) made up 5% of the national population. In 2015, the Māori population is estimated to be 54,900 and the total population 221,000. [[2]](#footnote-2)

Table 1: Population by age group, Bay of Plenty DHB, 2013

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Age group (years)** | **Māori** | | | **Non-Māori** | | Total DHB  Number |
| Number | Age distribution | % of DHB | Number | Age distribution |
| 0–14 | 18,220 | 34% | 40 | 27,330 | 17% | 45,550 |
| 15–24 | 8,920 | 17% | 35 | 16,370 | 10% | 25,290 |
| 25–44 | 12,540 | 23% | 26 | 35,490 | 22% | 48,030 |
| 45–64 | 10,560 | 20% | 19 | 46,290 | 29% | 56,850 |
| 65+ | 3,480 | 7% | 9 | 35,760 | 22% | 39,240 |
| Total | 53,700 | 100% | 25 | 161,300 | 100% | 215,000 |

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

In 2013, Māori residents comprised 25% of the DHB population. The Māori population is relatively young, with a median age of 24.6 years in 2013, compared with 41.1 years for the total DHB population. In 2013, Māori comprised 40% of the DHB’s children aged 0–14 years and 35% of the DHB’s youth aged 15–24 years.

Table 2: Population projections, Bay of Plenty DHB, 2013 to 2033

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Māori** | | | | | | | **Total DHB** | | | NZ Māori | Total NZ |
| Residents | %  of DHB | %  of NZ Māori | %  0–14 years | %  15–64 years | %  65+ years | Median age | Residents | Median age | % of NZ pop |
| 2013 | 53,700 | 25 | 8 | 34 | 60 | 7 | 24.6 | 215,000 | 41.1 | 5 | 692,300 | 4,442,100 |
| 2018 | 56,300 | 25 | 8 | 33 | 59 | 8 | 25.0 | 227,800 | 42.1 | 5 | 734,500 | 4,726,200 |
| 2023 | 58,600 | 25 | 8 | 32 | 59 | 9 | 25.9 | 238,500 | 42.8 | 5 | 773,500 | 4,935,200 |
| 2028 | 60,800 | 24 | 8 | 31 | 59 | 11 | 26.8 | 248,800 | 43.3 | 5 | 811,700 | 5,139,700 |
| 2033 | 63,200 | 25 | 7 | 30 | 58 | 12 | 27.6 | 258,100 | 44.0 | 5 | 850,700 | 5,327,700 |

Source: Statistics NZ Population projections for the Ministry of Health (2013 Census base) 2014 update  
Note: Detailed population projections are provided in Appendix 1.

The proportion of Māori who are aged 65 years and over is currently 7% but is projected to increase to 12% in 2033. Between 2013 and 2020 the number of Māori aged 65 and over will increase by almost 40% from 3,480 to 4,800 (see Appendix 1). In 2013 there were 1,130 Māori aged 75 years and over in the Bay of Plenty, with 303 living alone.

# Whānau ora

− Healthy families

T

he 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, Bay of Plenty DHB, 2013

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **How the whānau is doing** | **Bay of Plenty DHB** | | | | **New Zealand** | | |
| Estimated number | % | (95% CI) | | % | (95% CI) | |
| Well / Extremely well | 29,500 | 83.6 | (79.8, | 87.4) | 83.4 | (82.5, | 84.4) |
| Neither well nor badly | 3,000\* | 9.2\* | (6.2, | 12.2) | 10.3 | (9.4, | 11.2) |
| Badly / Extremely badly | 2,500\* | 7.2\* | (4.5, | 9.9) | 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 Bay of Plenty 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, Bay of Plenty DHB, 2013

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Whānau description** | **Bay of Plenty DHB** | | | | **New Zealand** | | |
| Estimated number | % | (95% CI) | | % | (95% CI) | |
| **Size of whānau** | | | | | | | |
| 10 or less | 16,000 | 46.0 | (40.7, | 51.4) | 53.7 | (52.1, | 55.3) |
| 11 to 20 | 8,000 | 22.5 | (18.1, | 26.9) | 22.6 | (21.3, | 24.0) |
| More than 20 | 11,000 | 31.4 | (26.6, | 36.3) | 23.6 | (22.4, | 24.8) |
| **Groups included in whānau** | | | | | | | |
| Parents, partner, children, brothers & sisters | 34,500 | 97.9 | (96.6, | 99.3) | 94.6 | (94.0, | 95.2) |
| Aunts & uncles, cousins, nephews & nieces, other in-laws | 16,000 | 46.3 | (41.2, | 51.5) | 41.3 | (39.8, | 42.8) |
| Grandparents, grandchildren | 19,500 | 54.9 | (49.4, | 60.4) | 41.9 | (40.5, | 43.4) |
| Friends, others | 4,500 | 12.9 | (10.1, | 15.7) | 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 nearly a third reporting whānau sizes of more than 20 people. Thirteen percent included friends in their description of whānau.

## Whānau support

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **How easy is it to get help** | **Bay of Plenty DHB** | | | | **New Zealand** | | |
| Estimated number | % | (95% CI) | | % | (95% CI) | |
| **Support in times of need** | | | | | |  |  |
| Easy, very easy | 27,500 | 77.7 | (73.8, | 81.7) | 81.2 | (80.1, | 82.4) |
| Sometimes easy, sometimes hard | 6,000 | 17.5 | (13.8, | 21.3) | 12.7 | (11.7, | 13.6) |
| Hard / very hard | 1,500\* | 4.7\* | (2.7, | 6.8) | 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 | 21,000 | 60.1 | (54.8, | 65.4) | 64.1 | (62.7, | 65.6) |
| Sometimes easy, sometimes hard | 7,000 | 19.4 | (15.5, | 23.3) | 16.9 | (15.9, | 18) |
| Hard / very hard | 6,500 | 17.9 | (13.8, | 22) | 14.7 | (13.5, | 15.9) |
| Don't need help | 1,000\*\* | 2.7\*\* | (1.1, | 4.2) | 4.2 | (3.7, | 4.7) |

Source: Te Kupenga 2013, Statistics New Zealand customised report.   
Notes: \* Sampling error is 30% or more but less than 50%. \*\* Sampling error is 50% or more but less than 100%.

In 2013, the majority of Māori adults in Bay of Plenty (78%) reported having easy access to support in times of need. However, an estimated 1500 (5%) had difficulty getting help.

A smaller proportion found it easy to get help with Māori cultural practices (60%), with 18% finding it hard or very hard. A further 3% reported not needing help.

## Importance of participation in Māori culture

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Bay of Plenty DHB** | | | | **New Zealand** | | |
| Estimated number | % | (95% CI) | | % | (95% CI) | |
| **Importance of being involved in Māori culture** | | | | | |  |  |
| Very / quite | 17,500 | 49.8 | (44.4, | 55.3) | 46.3 | (44.9, | 47.6) |
| Somewhat | 8,500 | 24.1 | (18.8, | 29.4) | 24.2 | (22.9, | 25.6) |
| A little / not at all | 9,000 | 26.1 | (21.3, | 30.8) | 29.5 | (28.3, | 30.7) |
| **Importance of spirituality** | | | | | | | |
| Very / quite | 15,500 | 44.9 | (40.1, | 49.8) | 48.7 | (47.4, | 49.9) |
| Somewhat | 7,000 | 19.6 | (15.3, | 23.9) | 17.0 | (16.0, | 18.0) |
| A little / not at all | 12,500 | 35.5 | (30.4, | 40.6) | 34.3 | (33.1, | 35.5) |

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

Being involved in Māori culture was important to 50% of Bay of Plenty Māori adults, and somewhat important to a further 24%. Spirituality was very, quite, or somewhat important to two-thirds of Bay of Plenty Māori (65%).

## Te Reo Māori

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

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Māori** | | | | **Non-Māori** | | | | Māori/non-Māori  ratio (95% CI) | | | Difference in proportion |
| Number | % | (95% CI) | | Number | % | (95% CI) | |
| 13,089 | 27.4 | (27.0, | 27.9) | 1,206 | 0.8 | (0.8, | 0.9) | **32.43** | **(30.1,** | **35.1)** | 26.6 |

Source: 2013 Census, Statistics New Zealand  
Notes: Percentages are age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

According to the 2013 Census, over a quarter of all Māori in Bay of Plenty 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, Bay of Plenty DHB, 2013

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Language spoken at home** | **Bay of Plenty DHB** | | | | **New Zealand** | | |
| Estimated number | % | (95% CI) | | % | (95% CI) | |
| Māori is main language | 1,500\* | 4.2\* | (2.4, | 6.0) | 2.6 | (2.2, | 3.0) |
| Māori is used regularly | 8,500 | 26.6 | (21.9, | 31.2) | 20.5 | (19.2, | 21.8) |

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

Over a quarter of Māori adults use Māori language regularly in the home, and for 4% te reo Māori is the main language.

## Access to marae

Table 9: Access to marae, Māori aged 15 years and over, Bay of Plenty DHB, 2013

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Been to marae** | **Bay of Plenty DHB** | | | | **New Zealand** | | |
| Estimated number | % | (95% CI) | | % | (95% CI) | |
| At some time | 34,500 | 98.3 | (96.9, | 99.7) | 96.0 | (95.5, | 96.6) |
| In previous 12 months(1) | 22,000 | 64.7 | (60.0, | 69.4) | 58.2 | (56.6, | 59.7) |
| Ancestral marae at some time(2) | 23,500 | 67.3 | (62.0, | 72.6) | 62.3 | (60.9, | 63.7) |
| Ancestral marae in previous 12 months(3) | 15,500 | 45.1 | (40.1, | 50.2) | 33.6 | (32.3, | 34.9) |
| Like to go to ancestral marae more often(2) | 14,500 | 55.2 | (48.7, | 61.7) | 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 Bay of Plenty (98%) had been to a marae, with most (65%) having been in the last 12 months. Around 70% had been to at least one of their ancestral marae, with 45% having been in the last 12 months. Over half (55%) reported that they would like to go more often.

## Traditional healing or massage

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Bay of Plenty DHB** | | | | **New Zealand** | | |
| Estimated number | % | (95% CI) | | % | (95% CI) | |
| 5,000 | 15.0 | (11.4, | 18.6) | 10.9 | (10.0, | 11.7) |

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

An estimated 5,000 Māori adults (15%) in Bay of Plenty took part in traditional healing or massage in 2013.

# Wai ora

− Healthy environments

T

his 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 Bay of Plenty DHB, 2006 and 2013

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Māori** | | | | **Non-Māori** | | | | Māori/non-Māori  ratio (95% CI) | | | Difference in percentage |
| Number | % | (95% CI) | | Number | % | (95% CI) | |
| 2006 | 9,978 | 39.0 | (38.4, | 39.6) | 55,629 | 59.1 | (58.8, | 59.5) | **0.66** | **(0.65,** | **0.67)** | -20.1 |
| 2013 | 12,729 | 47.6 | (47.0, | 48.2) | 63,231 | 64.6 | (64.3, | 64.9) | **0.74** | **(0.73,** | **0.75)** | -17.0 |

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 39% to 48% between 2006 and 2013. However there was only a small relative increase in qualifications compared to non-Māori with Māori being two-thirds as likely as non-Māori to having a Level 2 Certificate in 2006 and three quarters as likely in 2013.

## Work

Table 12: Labour force status, 15 years and over, Bay of Plenty 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 | 12,609 | 44.5 | (43.9, | 45.0) | 54,348 | 56.4 | (56.1, | 56.7) | **0.79** | **(0.78,** | **0.80)** | -11.9 |
| Employed part-time | 4,107 | 13.5 | (13.2, | 13.9) | 17,733 | 17.2 | (16.9, | 17.4) | **0.79** | **(0.76,** | **0.82)** | -3.6 |
| Unemployed | 2,661 | 9.6 | (9.3, | 10.0) | 2,856 | 3.9 | (3.7, | 4.0) | **2.50** | **(2.37,** | **2.64)** | 5.8 |
| Not in the labour force | 9,954 | 32.3 | (31.8, | 32.8) | 40,569 | 22.6 | (22.3, | 22.8) | **1.43** | **(1.40,** | **1.46)** | 9.7 |
| **2013** | | | | | | | | | | | | |
| Employed full-time | 12,204 | 40.5 | (40.0, | 41.0) | 54,246 | 52.4 | (52.1, | 52.7) | **0.77** | **(0.76,** | **0.78)** | -11.9 |
| Employed part-time | 4,290 | 13.3 | (12.9, | 13.7) | 18,543 | 16.9 | (16.6, | 17.1) | **0.79** | **(0.76,** | **0.82)** | -3.6 |
| Unemployed | 3,867 | 13.8 | (13.4, | 14.2) | 4,485 | 5.8 | (5.6, | 6.0) | **2.38** | **(2.28,** | **2.49)** | 8.0 |
| Not in the labour force | 10,872 | 32.4 | (31.9, | 32.9) | 44,559 | 25.0 | (24.7, | 25.3) | **1.30** | **(1.27,** | **1.32)** | 7.4 |

Source: 2006 and 2013 Censuses, Statistics New Zealand  
Notes Percentages are age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.  
Employed part-time includes people working 1 hour per week or more. 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, and a corresponding increase in the unemployment rate (from 10% to 14%). The proportion of the Māori population who were not in the labour force did not change notably.

In 2013 Māori were 2.4 times as likely as non-Māori to be unemployed, with an absolute gap of 8% in unemployment rates.

Table 13: Leading industries in which Māori were employed, Bay of Plenty DHB, 2013

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ANZSIC Industry** | **Bay of Plenty DHB** | | | | | | **New Zealand** | |
| **Māori** | | | **Non-Māori** | | |
| Number | % | Rank | Number | % | Rank | % | Rank |
| **Females** | | | | | | | | |
| Health Care and Social Assistance | 1,506 | 19.9 | 1 | 6,876 | 20.4 | 1 | 17.1 | 1 |
| Education and Training | 1,332 | 17.6 | 2 | 4,215 | 12.5 | 3 | 12.9 | 2 |
| Retail Trade | 843 | 11.1 | 3 | 4,323 | 12.9 | 2 | 11.6 | 3 |
| Accommodation and Food Services | 630 | 8.3 | 4 | 2,046 | 6.1 | 6 | 7.3 | 5 |
| Agriculture, Forestry and Fishing | 489 | 6.5 | 5 | 2,409 | 7.2 | 5 | 4.6 | 8 |
| **Males** | | | | | | | | |
| Manufacturing | 1,284 | 17.2 | 1 | 4,788 | 13.1 | 2 | 13.4 | 1 |
| Construction | 1,209 | 16.2 | 2 | 5,313 | 14.6 | 1 | 13.2 | 2 |
| Agriculture, Forestry and Fishing | 1,113 | 14.9 | 3 | 4,590 | 12.6 | 3 | 8.7 | 4 |
| Transport, Postal and Warehousing | 777 | 10.4 | 4 | 2,370 | 6.5 | 6 | 5.9 | 7 |
| Retail Trade | 477 | 6.4 | 5 | 3,288 | 9.0 | 4 | 8.3 | 5 |

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 Bay of Plenty, including health care and social assistance; education and training; retail; and accommodation and food services. For Māori men, leading industries were manufacturing; construction; and agriculture, forestry, and fishing.

Table 14: Leading occupations of employed Māori, Bay of Plenty DHB, 2013

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ANZSCO Occupation** | **Bay of Plenty DHB** | | | | | | **New Zealand** | |
| **Māori** | | | **Non-Māori** | | |
| Number | % | Rank | Number | % | Rank | % | Rank |
| **Females** | | | | | | | | |
| Professionals | 1,695 | 22.3 | 1 | 8,433 | 25.1 | 1 | 26.7 | 1 |
| Community and Personal Service Workers | 1,320 | 17.3 | 2 | 4,497 | 13.4 | 4 | 12.9 | 4 |
| Labourers | 1,224 | 16.1 | 3 | 2,631 | 7.8 | 6 | 8.3 | 6 |
| Clerical and Administrative Workers | 1,209 | 15.9 | 4 | 6,816 | 20.3 | 2 | 19.5 | 2 |
| Managers | 933 | 12.3 | 5 | 5,052 | 15.0 | 3 | 14.4 | 3 |
| Sales Workers | 798 | 10.5 | 6 | 4,053 | 12.1 | 5 | 11.7 | 5 |
| Technicians and Trades Workers | 303 | 4.0 | 7 | 1,710 | 5.1 | 7 | 5.0 | 7 |
| Machinery Operators and Drivers | 129 | 1.7 | 8 | 390 | 1.2 | 8 | 1.5 | 8 |
| **Males** | | | | | | | | |
| Labourers | 2,139 | 28.1 | 1 | 5,337 | 14.7 | 4 | 13.6 | 4 |
| Machinery Operators and Drivers | 1,377 | 18.1 | 2 | 3,201 | 8.8 | 5 | 9.1 | 5 |
| Technicians and Trades Workers | 1,263 | 16.6 | 3 | 7,122 | 19.7 | 2 | 18.5 | 3 |
| Managers | 1,083 | 14.2 | 4 | 9,375 | 25.9 | 1 | 22.7 | 1 |
| Professionals | 741 | 9.7 | 5 | 5,529 | 15.3 | 3 | 18.6 | 2 |
| Community and Personal Service Workers | 456 | 6.0 | 6 | 1,470 | 4.1 | 8 | 5.4 | 7 |
| Sales Workers | 303 | 4.0 | 7 | 2,655 | 7.3 | 6 | 7.1 | 6 |
| Clerical and Administrative Workers | 249 | 3.3 | 8 | 1,503 | 4.2 | 7 | 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 (22%); community and personal service workers (17%); labourers (16%); and clerical and administrative workers (16%). The next most common occupations were managers, and sales workers.

Māori men were most likely to be employed as labourers (28%); machinery operators and drivers (18%); and technicians and trade workers (17%). Managers and professionals were the next most common occupations.

Table 15: Unpaid work, 15 years and over, Bay of Plenty 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 | 25,572 | 89.4 | (89.0, | 89.8) | 102,708 | 89.6 | (89.4, | 89.9) | 1.00 | (0.99, | 1.00) | -0.2 |
| Looking after disabled/ill household member | 3,828 | 13.2 | (12.8, | 13.7) | 7,884 | 6.4 | (6.2, | 6.5) | **2.08** | **(2.00,** | **2.17)** | 6.9 |
| Looking after disabled/ill non-household member | 3,637 | 12.0 | (11.7, | 12.4) | 10,848 | 7.4 | (7.2, | 7.6) | **1.62** | **(1.56,** | **1.69)** | 4.6 |

Source: 2013 Census, Statistics New Zealand  
Notes Percentages are age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

Ninety percent of Māori adults worked without pay in 2013. Māori were twice as likely as non-Māori to look after someone who was disabled or ill without pay within the home, and around 60% more likely to do so 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, Bay of Plenty DHB, 2013

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

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

An estimated 3,000 Bay of Plenty Māori adults (10%) reported putting up with feeling cold a lot to keep costs down during the previous 12 months, 2,500 (9%) had often gone without fresh fruit and vegetables, and 4,000 (13%) had 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, Bay of Plenty 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 | 4,764 | 23.8 | (23.2, | 24.3) | 1,650 | 6.0 | (5.7, | 6.3) | **3.95** | **(3.74,** | **4.16)** | 17.7 |

Source: Statistics New Zealand, 2006 and 2013 Census  
Notes: Māori families include at least one Māori member. Non-Māori families have no Māori members.   
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

The number of children living in Māori families where the only income was means-tested benefits remained fairly constant between 2006 and 2013, with the proportion slightly decreasing from 25% to 24%. 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, Bay of Plenty 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 | 6,954 | 41.7 | (40.9, | 42.4) | 4,488 | 17.2 | (16.7, | 17.6) | **2.43** | **(2.35,** | **2.51)** | 24.5 |
| Adults 18 years & over | 10,551 | 36.6 | (36.1, | 37.2) | 14,325 | 19.0 | (18.6, | 19.3) | **1.93** | **(1.88,** | **1.98)** | 17.7 |

Source: 2013 Census, Statistics New Zealand  
Notes: % is age-standardised. Ratios in **bold** show a statistically significant difference between Māori and non-Māori.  
A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.  
Household income is equivalised using the revised Jensen scale. Low income is defined as an equivalised household income under $15,172.

Forty-two percent of children in Māori households (almost 7000) were in households with low equivalised household incomes, 2.4 times the proportion of other children. Thirty-seven percent of adults in Māori households (over 10,500) lived in low income households, almost twice the proportion of other adults.

Table 19: Households with no access to a motor vehicle, Bay of Plenty 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 | 1,623 | 9.9 | (9.5, | 10.4) | 3,021 | 5.7 | (5.5, | 5.9) | **1.74** | **(1.64,** | **1.84)** | 4.2 |
| 2013 | 1,881 | 10.3 | (9.9, | 10.8) | 2,889 | 5.1 | (4.9, | 5.3) | **2.02** | **(1.91,** | **2.14)** | 5.2 |
| **People (% age-standardised)** | | | | | | | | | | | | |
| 2006 | 4,338 | 8.0 | (7.7, | 8.2) | 3,909 | 1.8 | (1.7, | 1.9) | **4.46** | **(4.22,** | **4.73)** | 6.2 |
| 2013 | 4,902 | 8.5 | (8.3, | 8.8) | 3,975 | 2.1 | (2.0, | 2.2) | **4.02** | **(3.81,** | **4.24)** | 6.4 |

Source: 2006 and 2013 Censuses, Statistics New Zealand  
Note: A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.   
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, 10% of Māori households had no access to a motor vehicle, twice the proportion of non-Māori households. Residents of Māori households were 4 times as likely as others to be without a vehicle.

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Mode of tele-communication** | **Māori households** | | | | **Non-Māori households** | | | | | | Māori/non-Māori  ratio (95% CI) | | | Difference in percentage | |
| Number | % | (95% CI) | | Number | % | | (95% CI) | | |
| No mobile/cell phone | 9,348 | 14.9 | (14.6, | 15.2) | 16,116 | | 8.6 | | (8.4, | 8.8) | **1.73** | **(1.68,** | **1.78)** | | 6.2 | |
| No telephone | 16,296 | 29.9 | (29.6, | 30.3) | 11,775 | | 11.9 | | (11.7, | 12.2) | **2.51** | **(2.45,** | **2.56)** | | 18.0 | |
| No internet | 20,631 | 35.2 | (34.8, | 35.6) | 20,505 | | 11.0 | | (10.8, | 11.2) | **3.19** | **(3.12,** | **3.26)** | | 24.2 | |
| No tele-communications | 2,427 | 4.3 | (4.1, | 4.4) | 1,008 | | 0.8 | | (0.8, | 0.9) | **5.14** | **(4.72,** | **5.59)** | | 3.4 | |

Source: 2013 Census, Statistics New Zealand  
Note: A Māori household is a household with at least one Māori resident. Non-Māori households have no Māori residents.   
% is age–sex-standardised to the 2001 Māori population.  
Ratios in **bold** show a statistically significant difference between Māori and non-Māori.

In 2013, 35% of people in Māori households had no access to the internet, 15% did not have a cell phone, 30% had no telephone, and 4% had no access to any telecommunications in the home. The largest absolute gap (excluding any telecommunications) between Bay of Plenty Māori and non-Māori households was in access to the internet (24 percentage points).

## Housing

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Housing problem (a big problem)** | **Bay of Plenty DHB** | | | | **New Zealand** | | |
| Estimated number | % | (95% CI) | | % | (95% CI) | |
| Too small | 1,500\* | 4.9\* | (2.6, | 7.2) | 5.3 | (4.7, | 5.9) |
| Damp | 2,500\* | 7.2\* | (4.3, | 10.2) | 11.3 | (10.5, | 12.2) |
| Hard to keep warm | 3,500\* | 10.1\* | (6.8, | 13.3) | 16.5 | (15.4, | 17.7) |
| Needs repairs | 4,500\* | 12.3\* | (8.6, | 16.0) | 13.8 | (12.7, | 14.9) |
| Pests in the house | 1,500\* | 4.6\* | (2.8, | 6.5) | 5.8 | (5.1, | 6.5) |

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

Housing problems most commonly reported by Bay of Plenty Māori adults in 2013 as a big problem included needing repairs (12%), difficulty keeping the house warm (10%), and dampness (7%). Five percent felt their house was too small, and 5% 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, Bay of Plenty DHB, 2013

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Measure | **Māori households** | | | | **Non-Māori households** | | | | Māori/non-Māori  ratio (95% CI) | | | Difference in percentage |
| Number | % | (95% CI) | | Number | % | (95% CI) | |
| Households | 8,403 | 46.7 | (46.0, | 47.5) | 13,590 | 24.4 | (24.0, | 24.7) | **1.92** | **(1.88,** | **1.96)** | 22.3 |
| Children under 18 years (% age-standardised) | 11,595 | 56.0 | (55.4, | 56.7) | 9,039 | 32.3 | (31.7, | 32.8) | **1.74** | **(1.70,** | **1.77)** | 23.8 |
| Adults 18 years and over (% age-standardised) | 16,224 | 48.3 | (47.8, | 48.9) | 24,147 | 36.3 | (35.9, | 36.6) | **1.33** | **(1.31,** | **1.35)** | 12.1 |

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

In 2013, 8,403 Māori households were rented, making up 47% of all Māori households, compared to 24% of non-Māori households.

Among children living in a Māori household, 56% (over 11,500) were living in rented homes, compared to 32% in non-Māori households.

Just under half of adults living in Māori households were living in rented accommodation (more than 16,000), a third more than the proportion of adults in non-Māori households.

### Household crowding

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Measure | **Māori households** | | | | **Non-Māori households** | | | | Māori/non-Māori  ratio (95% CI) | | | Difference in percentage |
| Number | % | (95% CI) | | Number | % | (95% CI) | |
| Households | 2,124 | 11.6 | (11.2, | 12.1) | 1,020 | 1.8 | (1.7, | 1.9) | **6.46** | **(6.00,** | **6.94)** | 9.8 |
| People (% age standardised) | 11,619 | 21.4 | (21.1, | 21.7) | 5,202 | 6.2 | (6.0, | 6.3) | **3.47** | **(3.36,** | **3.59)** | 15.2 |

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

In 2013, Māori households were 6.5 times as likely as non-Māori households to be classified as crowded using the Canadian National Occupancy Standard, with over 2,000 homes needing at least one additional bedroom, affecting more than 11,600 people. People living in Māori households were 3.5 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, Bay of Plenty DHB, 2013

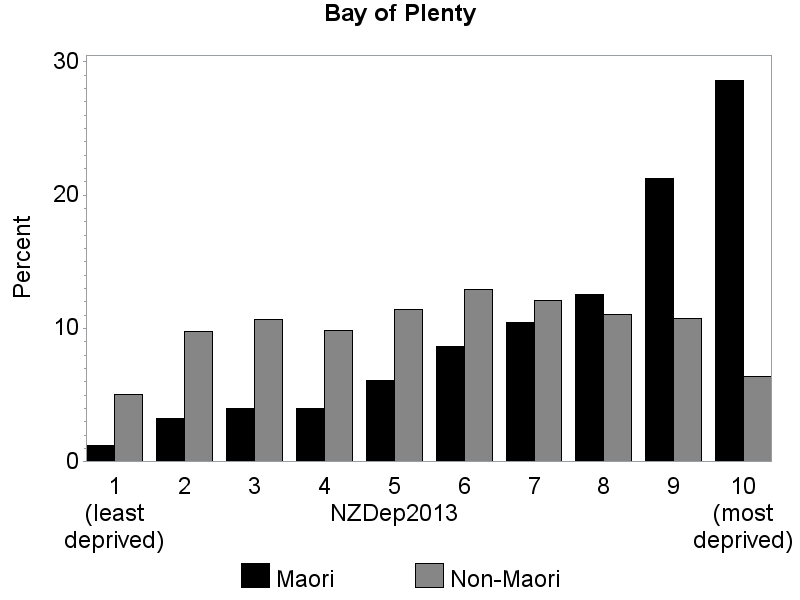
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Measure | **Māori households** | | | | **Non-Māori households** | | | | Māori/non-Māori  ratio (95% CI) | | | Difference in percentage |
| Number | % | (95% CI) | | Number | % | (95% CI) | |
| Households | 849 | 4.7 | (4.4, | 5.0) | 1,485 | 2.6 | (2.5, | 2.8) | **1.78** | **(1.64,** | **1.93)** | 2.0 |
| People (% age standardised) | 2,382 | 4.3 | (4.2, | 4.5) | 3,411 | 3.5 | (3.4, | 3.6) | **1.23** | **(1.17,** | **1.30)** | 0.8 |

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, 5% of Māori households (849 homes) had no heating, 78% higher than the proportion of non-Māori households (3% or 1,485 homes).

## Area deprivation

Figure 1: Distribution by NZDep 2013 decile, Bay of Plenty DHB, 2013



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

Bay of Plenty Māori have a more deprived small area profile than the total DHB or national population. In 2013, 50% of Māori lived in the two most deprived decile areas (deciles 9 and 10), compared to 17% of non-Māori. Conversely, only 4% of Māori lived in the two least deprived decile areas, compared to 15% of Bay of Plenty non-Māori (see accompanying Excel table.

# Mauri ora: Pepi, tamariki

− Infants and children

T

his 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](http://www.hqsc.govt.nz/our-programmes/mrc/pmmrc/)) and the Child and Youth Mortality Review Committee ([CYMRC](http://www.hqsc.govt.nz/our-programmes/mrc/cymrc/publications-and-resources/publication/1311/)) 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*](http://dnmeds.otago.ac.nz/departments/womens/paediatrics/research/nzcyes/maori.html) 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, Bay of Plenty 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 | 93 | 6.8 | (6.3, | 7.5) | 88 | 5.6 | (5.1, | 6.1) | **1.22** | **(1.08,** | **1.39)** | 1.2 |
| High birth-weight | 30 | 2.2 | (1.8, | 2.6) | 42 | 2.7 | (2.3, | 3.1) | 0.81 | (0.66, | 1.00) | -0.5 |
| Preterm | 103 | 7.6 | (6.9, | 8.2) | 110 | 7.0 | (6.5, | 7.6) | 1.08 | (0.96, | 1.21) | 0.6 |

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 1,360 Māori infants born per year on average in Bay of Plenty, 46% of all live births in the DHB (2,929 per year). On average, 93 Māori babies per year were born with low birth-weight, at a rate of 7%, 22% higher than the rate for non-Māori (or 16 more babies per year on average). Thirty Māori infants per year were born with high birth-weight (2%), and 103 per year (8%) were born preterm.

## Well child/Tamariki ora indicators

Table 26: Selected Well Child/Tamariki Ora indicators for Māori children, Bay of Plenty 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](http://www.health.govt.nz/publication/indicators-well-child-tamariki-ora-quality-improvement-framework-march-2015).  
Indicator 1: Source: PHO Enrolment Collection (numerator), National Immunisation Register enrolment (denominator)  
Indicator 11: Source: National Maternity Collection. Number of babies with breastfeeding recorded (denominator)  
Indicator 12: Source: National Maternity Collection. Number of babies with breastfeeding recorded (denominator)  
Indicator 19: Source: National Maternity Collection. Number of mother with tobacco use recorded at 2 weeks postnatal (denominator)  
Indicator 5: Source Community Oral Health Services (numerator); PHO enrolments (denominator)  
Indicator 7: Source: ENROL Ministry of Education  
Indicator 15: Source: B4 School Check Information System. Children who have a BMI recorded at their B4 School Check (denominator)

During late 2013, 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, Bay of Plenty 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 | 714 | 62% | 1,251 | 77% | 0.80 | -15% |
| 8 months | 973 | 85% | 1,416 | 88% | 0.97 | -3% |
| 12 months | 1,114 | 91% | 1,495 | 89% | 1.03 | 2% |
| 18 months | 946 | 75% | 1,443 | 81% | 0.93 | -6% |
| 24 months | 1,189 | 91% | 1,612 | 89% | 1.03 | 3% |
| 5 years | 997 | 73% | 1,438 | 75% | 0.97 | -2% |

Source: National Immunisation Register

In the 12 months to 31 December 2014, 62% of Māori infants aged six months were fully immunised, compared to 77% of non-Māori infants. However, 85% of Māori children aged eight months and 91% of those aged 24 months had completed their appropriate immunisations. At five years of age 73% of Māori and 75% of non-Māori children were fully immunised.

## Oral health

Table 28: Oral health status of children aged 5 or in Year 8 at school, Bay of Plenty 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 | 1,007 | 74 | (71, | 77) | 4.6 | 2,031 | 44 | (41, | 46) | 1.5 | 1.71 | (1.60, | 1.81) | 31 |
| Year 8 | 713 | 68 | (64, | 71) | 2.8 | 1,618 | 50 | (47, | 52) | 1.3 | 1.36 | (1.26, | 1.46) | 18 |

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, 71% higher than the proportion of non-Māori children. The mean number of decayed, missing or filled teeth was 4.6 for Māori and 1.5 for non-Māori. Of those in Year 8, 68% of Māori children had caries, a third higher than non-Māori with a mean DMFT of 2.8 compared to 1.3.

Table 29: Hospitalisations for tooth and gum disease, children aged 0–14 years, Bay of Plenty 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 | 84 | 960.7 | (849.1, | 1,087.0) | 92 | 698.0 | (620.1, | 785.7) | **1.38** | **(1.16,** | **1.63)** | 262.7 |
| Male | 86 | 915.1 | (809.7, | 1,034.1) | 99 | 712.7 | (635.9, | 798.9) | **1.28** | **(1.09,** | **1.52)** | 202.3 |
| Total | 170 | 937.9 | (859.8, | 1,023.1) | 190 | 705.4 | (649.7, | 765.8) | **1.33** | **(1.18,** | **1.50)** | 232.5 |

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 170 hospital admissions per year on average for tooth and gum disease among Māori children, at a rate that was 33% higher than non-Māori, or 233 more admissions per 100,000 children per year.

## Middle ear disease

Table 30: Hospitalisations for grommet insertions, children aged 0–14 years, Bay of Plenty 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 | 55 | 632.8 | (543.5, | 736.8) | 69 | 544.2 | (474.7, | 623.9) | 1.16 | (0.95, | 1.43) | 88.5 |
| Male | 72 | 768.5 | (672.5, | 878.2) | 93 | 694.3 | (617.4, | 780.8) | 1.11 | (0.93, | 1.32) | 74.2 |
| Total | 127 | 700.7 | (633.7, | 774.6) | 162 | 619.3 | (566.5, | 677.0) | 1.13 | (0.99, | 1.29) | 81.4 |

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

On average, there were 127 admissions per year for grommet insertions among Māori children per year, at a rate of 700 per 100,000.

## Healthy skin

Table 31: Hospitalisations for serious skin infections, children aged 0–14 years, Bay of Plenty 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 | 56 | 634.2 | (545.2, | 737.8) | 27 | 203.1 | (163.1, | 253.0) | **3.12** | **(2.39,** | **4.08)** | 431.1 |
| Male | 56 | 588.9 | (506.0, | 685.4) | 41 | 292.9 | (245.5, | 349.4) | **2.01** | **(1.59,** | **2.54)** | 296.0 |
| Total | 112 | 611.6 | (549.4, | 680.7) | 68 | 248.0 | (216.1, | 284.6) | **2.47** | **(2.07,** | **2.94)** | 363.5 |

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

There were 112 admissions per year for serious skin infections among Māori children on average. The rate was 2.5 times the rate for non-Māori children, or 364 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, Bay of Plenty DHB, 2011–2013

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Age group & 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 | 2 | 19.0 | (7.9, | 45.8) | <1 | 2.3 | (0.3, | 16.1) | 8.41 | (0.98, | 72.01) | 16.8 |
| Male | 4 | 46.6 | (27.1, | 80.3) | 1 | 4.2 | (1.1, | 17.0) | **11.00** | **(2.48,** | **48.75)** | 42.4 |
| Total | 6 | 32.8 | (20.7, | 52.1) | 1 | 3.3 | (1.0, | 10.1) | **10.10** | **(2.97,** | **34.31)** | 29.6 |
| **15–24 years** | | | | | | | | | | | | |
| Female | 1 | 22.1 | (7.1, | 68.6) | 0 | 0.0 | . | . | . | . | . | 22.1 |
| Male | 1 | 14.1 | (3.5, | 56.3) | 0 | 0.0 | . | . | . | . | . | 14.1 |
| Total | 2 | 18.1 | (7.5, | 43.5) | 0 | 0.0 | . | . | . | . | . | 18.1 |

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

Among Bay of Plenty Māori children aged 14 years and under, on average six per year were hospitalised at least once for acute rheumatic fever, at a rate 10 times the rate for non-Māori, or 30 more children per 100,000. Among Māori aged 15 to 24 years, an average of two per year were admitted, at a rate of 18 per 100,000. No non-Māori in this age group were admitted for acute rheumatic fever during this period.

## 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, Bay of Plenty 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 | 555 | 6,323.3 | (6,026.8, | 6,634.4) | 604 | 4,756.8 | (4,542.4, | 4,981.3) | **1.33** | **(1.24,** | **1.42)** | 1,566.5 |
| Male | 700 | 7,376.0 | (7,067.0, | 7,698.5) | 739 | 5,517.2 | (5,291.9, | 5,752.0) | **1.34** | **(1.26,** | **1.42)** | 1,858.8 |
| Total | 1,255 | 6,849.6 | (6,634.1, | 7,072.2) | 1,342 | 5,137.0 | (4,980.5, | 5,298.4) | **1.33** | **(1.28,** | **1.39)** | 1,712.6 |

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

There were 1,255 potentially avoidable hospitalisations per year on average among Māori children aged 14 years and under, at a rate 33% higher than the non-Māori rate, or 1,713 more admissions per 100,000.

Table 34: Ambulatory care sensitive hospitalisations for children aged 1 month to 14 years, Bay of Plenty 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 | 398 | 4,542.6 | (4,292.0, | 4,807.7) | 428 | 3,355.7 | (3,176.9, | 3,544.7) | **1.35** | **(1.25,** | **1.46)** | 1,186.8 |
| Male | 452 | 4,788.6 | (4,540.2, | 5,050.6) | 509 | 3,786.2 | (3,600.6, | 3,981.2) | **1.26** | **(1.18,** | **1.36)** | 1,002.4 |
| Total | 850 | 4,665.6 | (4,487.8, | 4,850.4) | 937 | 3,570.9 | (3,441.1, | 3,705.7) | **1.31** | **(1.24,** | **1.38)** | 1,094.6 |

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

On average there were 850 admissions per year for ambulatory care sensitive conditions among Māori children, at a rate a third higher than non-Māori children, or 1,095 more admissions per 100,000 children.

# Mauri ora: Rangatahi

− Young adults

T

his 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).](http://www.hauora.maori.nz)

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](https://www.fmhs.auckland.ac.nz/en/faculty/adolescent-health-research-group/publications-and-reports/publications-by-year.html)). Other data related to youth can be found in the CYES reports on child and youth health. The [Child and Youth Health Compass](file:///\\pandora.uow.wnmeds.ac.nz\erupomare$\Data\Maori%20Health%20Profiles\Final%20Maori%20health%20profiles\Bay%20of%20Plenty\http:\\compass.hiirc.org.nz\section\31015\9-youth-health-services\) 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, Bay of Plenty DHB, 1999–2013



Source: ASH Year 10 Snapshot Survey, 2013

Over the last 15 years the number of Māori aged 14 or 15 who have never smoked has increased although the proportions of never smokers have been consistently lower than non-Māori (Figure 2). In 2013, 53% had never smoked.

Figure 3: Regular smokers, ages 15–17, 18–19, 20–24 years, Bay of Plenty 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 Bay of Plenty since 2006. However, the high smoking rate at ages 18–24 years indicates a sizeable group start smoking in young adulthood. At ages 20–24 years, 45% of Māori were smoking regularly in 2013. Non-Māori in each age group were at least half as likely as Māori to smoke regularly in 2013.

## Immunisations

Table 35: Human papilloma virus immunisations (HPV) by birth cohorts, Bay of Plenty 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 | Difference in percentage |
| Fully immunised | % fully immunised | Fully immunised | % fully immunised |
| 2000 | 14 | 2013 | 358 | 63.9% | 440 | 44.9% | 1.42 | 19.0% |
| 1999 | 15 | 2012 | 344 | 60.4% | 398 | 44.2% | 1.36 | 16.1% |
| 1998 | 16 | 2011 | 332 | 61.5% | 386 | 39.4% | 1.56 | 22.1% |
| 1997 | 17 | 2010 | 313 | 55.9% | 370 | 39.8% | 1.40 | 16.1% |

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

By September 2014, 64% of Māori girls aged 14 years in 2014 had received three doses of the HPV vaccine, a higher coverage than non-Māori (45%) or the national coverage (57%). Fifty-six percent of Māori and 40% of non-Māori women aged 17 in 2014 were fully immunised compared to 55% nationally.

## Mental health

Table 36: Hospitalisations for injury from intentional self-harm, 15–24 and 25–44 years, Bay of Plenty 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 | 465.6 | (363.7, | 596.0) | 59 | 745.8 | (643.4, | 864.5) | **0.62** | **(0.47,** | **0.83)** | -280.2 |
| Male | 9 | 210.1 | (143.9, | 306.7) | 18 | 212.3 | (162.6, | 277.2) | 0.99 | (0.62, | 1.57) | -2.2 |
| Total | 30 | 337.8 | (274.7, | 415.5) | 77 | 479.0 | (420.9, | 545.2) | **0.71** | **(0.55,** | **0.90)** | -141.2 |
| **25–44 years** | | | | | | | | | | | | |
| Female | 14 | 196.5 | (144.4, | 267.4) | 42 | 218.0 | (182.1, | 260.8) | 0.90 | (0.63, | 1.29) | -21.4 |
| Male | 8 | 132.4 | (87.8, | 199.8) | 21 | 128.3 | (99.5, | 165.3) | 1.03 | (0.64, | 1.67) | 4.2 |
| Total | 21 | 164.5 | (128.4, | 210.7) | 63 | 173.1 | (149.4, | 200.5) | 0.95 | (0.71, | 1.27) | -8.6 |

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 injury from intentional self-harm. There were 30 admissions per year on average among Māori in this age group. Females were more likely to be admitted than males.

Māori aged 25–44 years were about as likely as non-Māori to be admitted. On average 21 Māori per year in this age group were admitted for injury caused by intentional self-harm.

# Mauri ora: Pakeke

− Adults

T

his 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 Bay of Plenty can be found in the accompanying Excel© tables labelled ‘Death registrations’ and ‘Hospitalisations by principal diagnosis’. For example, the hospitalisations table shows disparities between Bay of Plenty Māori and non-Māori in rates of admission for thyroid disorders, atrial fibrillation and flutter, acute bronchitis and bronchiolitis, bronchiectasis, gastric ulcers, glomerular disease, renal failure, 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](http://www.health.govt.nz/publication/health-maori-adults-and-children-2011-2013)).

## Self-assessed health

Table 37: Health status reported by Māori aged 15 years and over, Bay of Plenty DHB, 2013

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Health status** | **Bay of Plenty DHB** | | | | **New Zealand** | | |
| Estimated number | % | (95% CI) | | % | (95% CI) | |
| Excellent | 6,000 | 17.6 | (13.8, | 21.5) | 18.1 | (16.8, | 19.3) |
| Very good | 12,500 | 35.8 | (31.3, | 40.3) | 37.0 | (35.5, | 38.5) |
| Good | 11,500 | 32.6 | (27.5, | 37.7) | 28.5 | (27.3, | 29.7) |
| Fair / poor | 5,000 | 14.0 | (10.3, | 17.6) | 16.4 | (15.3, | 17.5) |

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

In 2013, just over half of Bay of Plenty Māori adults (53%) reported having excellent or very good health and another third described their health as good. Fourteen percent reported having fair or poor health status.

## Smoking status

Table 38: Cigarette smoking status, 15 years and over, Bay of Plenty DHB, 2006 and 2013

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Smoking status** | **Māori** | | | | **Non-Māori** | | | | Māori/non-Māori  ratio (95% CI) | | | Difference in percent |
| Number | % | (95% CI) | | Number | % | (95% CI) | |
| **2006** | | | | | | | | | | | | |
| Regular smoker | 11,763 | 44.2 | (43.6, | 44.8) | 18,876 | 21.7 | (21.4, | 22.0) | **2.03** | **(1.99,** | **2.07)** | 22.4 |
| Ex-smoker | 5,298 | 18.1 | (17.7, | 18.6) | 29,511 | 20.6 | (20.4, | 20.9) | **0.88** | **(0.85,** | **0.90)** | -2.5 |
| Never smoked | 10,248 | 37.6 | (37.1, | 38.2) | 61,530 | 57.6 | (57.3, | 58.0) | **0.65** | **(0.64,** | **0.66)** | -20.0 |
| **2013** | | | | | | | | | | | | |
| Regular smoker | 10,062 | 36.1 | (35.5, | 36.7) | 14,112 | 14.9 | (14.6, | 15.1) | **2.43** | **(2.37,** | **2.48)** | 21.2 |
| Ex-smoker | 7,041 | 21.2 | (20.8, | 21.7) | 32,100 | 20.3 | (20.1, | 20.6) | **1.04** | **(1.02,** | **1.07)** | 0.9 |
| Never smoked | 12,414 | 42.7 | (42.1, | 43.3) | 71,112 | 64.8 | (64.4, | 65.1) | **0.66** | **(0.65,** | **0.67)** | -22.1 |

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 44% to 36%. The corresponding increase in those who have never smoked was greater than the increase in ex-smokers. However, Māori remain 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, Bay of Plenty 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 | 337 | 1,740.9 | (1,630.8, | 1,858.5) | 1,584 | 868.3 | (830.3, | 907.9) | **2.01** | **(1.85,** | **2.17)** | 872.7 |
| Male | 379 | 2,315.8 | (2,178.6, | 2,461.6) | 1,994 | 1,426.0 | (1,375.6, | 1,478.2) | **1.62** | **(1.51,** | **1.74)** | 889.8 |
| Total | 716 | 2,028.4 | (1,939.6, | 2,121.2) | 3,577 | 1,147.1 | (1,115.4, | 1,179.7) | **1.77** | **(1.68,** | **1.86)** | 881.2 |

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

On average 716 Bay of Plenty Māori were admitted to hospital per year for diseases of the circulatory system (including heart disease and stroke), at a rate 77% higher than non-Māori, or 881 more admissions per 100,000.

Table 40: Ischaemic heart disease indicators, 25 years and over, Bay of Plenty 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 | 74 | 351.6 | (307.1, | 402.6) | 325 | 145.3 | (133.9, | 157.7) | **2.42** | **(2.07,** | **2.83)** | 206.3 |
| Male | 101 | 567.2 | (505.1, | 637.0) | 616 | 436.2 | (411.6, | 462.2) | **1.30** | **(1.14,** | **1.48)** | 131.1 |
| Total | 175 | 459.4 | (420.6, | 501.9) | 941 | 290.7 | (277.1, | 305.1) | **1.58** | **(1.43,** | **1.75)** | 168.7 |
| **Angiography procedures** | | | | | | | | | | | | |
| Female | 43 | 222.9 | (186.7, | 266.2) | 219 | 145.4 | (132.6, | 159.6) | **1.53** | **(1.25,** | **1.87)** | 77.5 |
| Male | 65 | 374.3 | (323.7, | 432.8) | 433 | 355.3 | (332.2, | 379.9) | 1.05 | (0.90, | 1.24) | 19.0 |
| Total | 107 | 298.6 | (266.8, | 334.2) | 652 | 250.4 | (237.0, | 264.4) | **1.19** | **(1.05,** | **1.35)** | 48.2 |
| **Angioplasty procedures** | | | | | | | | | | | | |
| Female | 9 | 44.2 | (30.2, | 64.6) | 54 | 33.6 | (28.1, | 40.2) | 1.31 | (0.86, | 2.00) | 10.5 |
| Male | 16 | 92.7 | (69.5, | 123.4) | 149 | 126.6 | (113.0, | 141.8) | **0.73** | **(0.54,** | **1.00)** | -33.9 |
| Total | 25 | 68.4 | (54.4, | 86.1) | 203 | 80.1 | (72.7, | 88.3) | 0.85 | (0.67, | 1.10) | -11.7 |
| **Coronary Artery Bypass Graft (CABG)** | | | | | | | | | | | | |
| Female | 4 | 21.7 | (12.5, | 37.6) | 17 | 9.9 | (7.2, | 13.5) | **2.20** | **(1.17,** | **4.15)** | 11.8 |
| Male | 10 | 58.4 | (40.5, | 84.0) | 71 | 56.3 | (48.2, | 65.7) | 1.04 | (0.70, | 1.54) | 2.1 |
| Total | 15 | 40.0 | (29.5, | 54.3) | 88 | 33.1 | (28.7, | 38.0) | 1.21 | (0.87, | 1.69) | 7.0 |
| **Acute coronary syndrome admissions** | | | | | | | | | | | | |
| Female | 54 | 256.0 | (218.4, | 300.0) | 232 | 103.9 | (94.1, | 114.6) | **2.46** | **(2.04,** | **2.97)** | 152.1 |
| Male | 72 | 408.4 | (356.1, | 468.4) | 418 | 300.1 | (279.2, | 322.5) | **1.36** | **(1.17,** | **1.59)** | 108.3 |
| Total | 127 | 332.2 | (299.3, | 368.6) | 650 | 202.0 | (190.3, | 214.3) | **1.64** | **(1.46,** | **1.85)** | 130.2 |

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

On average, 175 Māori per year were admitted to hospital for ischaemic heart disease (IHD), at a rate 58% higher than non-Māori. Of these, 127 were admitted with acute coronary syndrome (64% higher rate than non-Māori).

Māori men had higher rates than Māori women of admissions for IHD, acute coronary syndrome, angiography, angioplasty and CABG. There were 107 angiography procedures conducted for Māori patients per year, at a rate 19% higher than non-Māori. On average, 16 Māori men and 9 Māori women per year had angioplasty procedures, with the rate for Māori men 27% lower than the non-Māori rate. Four Māori women per year had a coronary artery bypass graft on average, at twice the rate of non-Māori women. Ten Māori men per year on average had a CABG, at a similar rate to non-Māori men.

Table 41: Hospitalisations for heart failure, stroke, and hypertensive disease, 25 years and over, Bay of Plenty 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 | 45 | 189.8 | (158.3, | 227.6) | 187 | 52.7 | (45.9, | 60.5) | **3.60** | **(2.87,** | **4.53)** | 137.1 |
| Male | 63 | 355.1 | (305.8, | 412.3) | 204 | 88.1 | (78.4, | 99.0) | **4.03** | **(3.33,** | **4.87)** | 267.0 |
| Total | 108 | 272.5 | (242.6, | 306.0) | 391 | 70.4 | (64.4, | 77.0) | **3.87** | **(3.34,** | **4.48)** | 202.1 |
| **Stroke** | | | | | | | | | | | | |
| Female | 48 | 241.4 | (203.6, | 286.2) | 225 | 106.9 | (95.0, | 120.2) | **2.26** | **(1.84,** | **2.78)** | 134.5 |
| Male | 30 | 172.1 | (138.5, | 214.0) | 229 | 113.8 | (102.6, | 126.1) | **1.51** | **(1.19,** | **1.93)** | 58.4 |
| Total | 78 | 206.8 | (180.7, | 236.5) | 454 | 110.3 | (102.1, | 119.3) | **1.87** | **(1.60,** | **2.19)** | 96.4 |
| **Hypertensive disease** | | | | | | | | | | | | |
| Female | 8 | 47.8 | (31.5, | 72.7) | 47 | 21.8 | (16.7, | 28.5) | **2.19** | **(1.33,** | **3.61)** | 26.0 |
| Male | 5 | 35.0 | (21.0, | 58.4) | 19 | 14.3 | (10.1, | 20.2) | **2.45** | **(1.32,** | **4.54)** | 20.7 |
| Total | 14 | 41.4 | (29.9, | 57.3) | 66 | 18.0 | (14.6, | 22.3) | **2.29** | **(1.56,** | **3.38)** | 23.4 |

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

There were 108 admissions per year on average for Māori with heart failure, at close to 4 times the rate for non-Māori, or 202 more admissions per 100,000.

On average, 78 Māori per year were admitted for stroke, almost twice the non-Māori rate, or 96 more admissions per 100,000.

There were 14 Māori admissions per year on average for hypertensive disease, over twice the rate of non-Māori, or 23 more admissions per 100,000.

Table 42: Hospitalisations for chronic rheumatic heart disease and heart valve replacements, 25 years and over, Bay of Plenty 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 | 8 | 48.7 | (31.8, | 74.7) | 12 | 7.8 | (4.7, | 13.1) | **6.22** | **(3.19,** | **12.15)** | 40.9 |
| Male | 4 | 33.1 | (18.4, | 59.6) | 11 | 9.7 | (5.9, | 16.0) | **3.40** | **(1.57,** | **7.33)** | 23.3 |
| Total | 12 | 40.9 | (28.9, | 58.0) | 23 | 8.8 | (6.1, | 12.6) | **4.66** | **(2.83,** | **7.67)** | 32.1 |
| **Heart valve replacements** | | | | | | | | | | | | |
| Female | 3 | 19.1 | (10.0, | 36.5) | 15 | 8.2 | (5.5, | 12.1) | **2.34** | **(1.10,** | **4.99)** | 10.9 |
| Male | 5 | 32.7 | (18.6, | 57.4) | 26 | 15.6 | (11.5, | 21.2) | **2.09** | **(1.10,** | **3.96)** | 17.0 |
| Total | 8 | 25.9 | (16.9, | 39.7) | 42 | 11.9 | (9.3, | 15.1) | **2.18** | **(1.33,** | **3.56)** | 14.0 |

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

On average, there were 12 hospital admissions per year for Māori with chronic rheumatic heart disease, at a rate 4.7 times that of non-Māori, or 32 more admissions per 100,000.

Heart valve replacements were conducted on eight Māori per year on average, twice the rate for non-Māori, or 14 more per 100,000.

Table 43: Early deaths from circulatory system disease, Bay of Plenty DHB, 2007–2011

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Gender** | **Māori** | | | | **Non-Māori** | | | | Māori/non-Māori  ratio (95% CI) | | | Rate difference |
| Ave. no. per year | Age-standardised  rate per 100,000 (95% CI) | | | Ave. no. per year | Age-standardised  rate per 100,000 (95% CI) | | |
| Female | 21 | 55.1 | (45.2, | 67.1) | 24 | 9.6 | (7.5, | 12.2) | **5.77** | **(4.22,** | **7.88)** | 45.5 |
| Male | 34 | 99.8 | (85.5, | 116.5) | 61 | 28.0 | (24.5, | 32.0) | **3.56** | **(2.90,** | **4.38)** | 71.8 |
| Total | 54 | 77.5 | (68.6, | 87.5) | 85 | 18.8 | (16.7, | 21.1) | **4.12** | **(3.48,** | **4.89)** | 58.7 |

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 54 Māori per year died early from circulatory system disease, at a rate 4 times as high as the non-Māori rate, or 59 more deaths per 100,000. Men had a higher mortality rate than women.

## Diabetes

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Indicator | **Māori** | | **Non-Māori** | | Māori/non-Māori ratio | Difference in percentage |
| Count | % (crude) | Count | % (crude) |
| Prevalence of diabetes (all ages) | 2,843 | 5.3 | 8,773 | 5.4 | 0.98 | -0.1 |
| People with diabetes regularly receiving metformin or insulin, 25+ | 1,461 | 51.4 | 4,242 | 48.4 | 1.06 | 3.0 |
| People with diabetes having regular Hb1Ac monitoring, 25+ | 2,206 | 77.6 | 7,210 | 80.0 | 0.97 | -2.4 |
| People with diabetes having regular screening for renal disease, 25+ | 1,677 | 59.0 | 5,580 | 63.6 | 0.93 | -4.6 |

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

Around 2,840 Māori were estimated to have diabetes in 2013, giving a crude prevalence of 5.3% (not adjusted for age). Half of Māori with diabetes were regularly receiving metformin or insulin in 2013. Three-quarters were having regular monitoring of blood glucose levels and 59% were being screened regularly for renal disease.

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Gender** | **Māori** | | | | **Non-Māori** | | | | Māori/non-Māori  ratio (95% CI) | | | Rate difference |
| Ave. no. per year | Age-standardised  rate per 100,000 (95% CI) | | | Ave. no. per year | Age-standardised  rate per 100,000 (95% CI) | | |
| Female | 3 | 10.1 | (5.1, | 19.9) | 7 | 2.4 | (1.3, | 4.4) | **4.17** | **(1.68,** | **10.33)** | 7.6 |
| Male | 5 | 20.3 | (12.1, | 33.9) | 14 | 6.7 | (4.2, | 10.8) | **3.01** | **(1.49,** | **6.05)** | 13.5 |
| Total | 8 | 15.2 | (10.0, | 22.9) | 20 | 4.6 | (3.1, | 6.7) | **3.31** | **(1.89,** | **5.81)** | 10.6 |

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

On average eight Māori with diabetes had lower limbs amputated per year, at a rate 3.3 times that of non-Māori.

## Cancer

Table 46: Most common cancer registrations for Māori by site, all ages, Bay of Plenty 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 | 96 | 249.2 | (227.0, | 273.6) | 472 | 186.4 | (176.0, | 197.5) | **1.34** | **(1.20,** | **1.49)** | 62.8 |
| Breast | 30 | 83.5 | (70.8, | 98.4) | 126 | 60.5 | (54.9, | 66.8) | **1.38** | **(1.14,** | **1.67)** | 22.9 |
| Lung | 22 | 49.6 | (41.0, | 59.9) | 43 | 11.2 | (9.3, | 13.5) | **4.41** | **(3.38,** | **5.74)** | 38.3 |
| Uterus | 13 | 35.4 | (27.4, | 45.9) | 40 | 19.3 | (15.8, | 23.6) | **1.84** | **(1.33,** | **2.55)** | 16.2 |
| Colorectal | 4 | 11.6 | (7.4, | 18.2) | 76 | 19.8 | (17.2, | 22.7) | **0.59** | **(0.37,** | **0.94)** | -8.1 |
| **Male** | | | | | | | | | | | | |
| All cancers | 82 | 230.1 | (208.4, | 254.1) | 578 | 206.9 | (196.6, | 217.7) | 1.11 | (0.99, | 1.24) | 23.2 |
| Lung | 20 | 52.3 | (42.8, | 64.0) | 50 | 13.7 | (11.8, | 16.0) | **3.81** | **(2.96,** | **4.92)** | 38.6 |
| Prostate | 18 | 45.5 | (36.9, | 56.1) | 154 | 50.2 | (46.4, | 54.4) | 0.91 | (0.72, | 1.13) | -4.7 |
| Colorectal | 7 | 17.7 | (12.5, | 25.0) | 89 | 25.6 | (22.6, | 28.9) | **0.69** | **(0.48,** | **1.00)** | -7.9 |
| Liver | 6 | 17.0 | (11.7, | 24.8) | 5 | 1.6 | (1.0, | 2.5) | **10.66** | **(5.98,** | **18.98)** | 15.4 |

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 96 cancer registrations per year on average among Bay of Plenty Māori females during 2008–2012, at a rate 34% 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 (4.4 times as high), uterus (84% higher) and breast (38% higher), and around 40% lower for colorectal cancer.

Among Bay of Plenty Māori males there were 82 cancer registrations per year on average. Lung, prostate, colorectal, and liver cancer were the most common. Māori registration rates were higher than those of non-Māori for cancers of the lung (close to 4 times as high) and liver (10.7 times as high) but they were around 30% lower for colorectal cancer.

Table 47: Most common cancer deaths for Māori by site, all ages, Bay of Plenty 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 | 46 | 113.9 | (99.7, | 130.0) | 192 | 48.0 | (43.8, | 52.6) | **2.37** | **(2.02,** | **2.79)** | 65.8 |
| Lung | 16 | 38.9 | (31.2, | 48.5) | 32 | 7.7 | (6.3, | 9.4) | **5.04** | **(3.75,** | **6.77)** | 31.2 |
| Breast | 7 | 19.0 | (13.7, | 26.4) | 29 | 10.0 | (8.1, | 12.5) | **1.89** | **(1.27,** | **2.80)** | 8.9 |
| Uterus | 6 | 15.6 | (10.7, | 22.7) | 19 | 5.8 | (4.3, | 7.8) | **2.67** | **(1.65,** | **4.31)** | 9.7 |
| Stomach | 3 | 7.9 | (4.6, | 13.8) | 3 | 0.6 | (0.2, | 1.3) | **14.25** | **(5.12,** | **39.67)** | 7.4 |
| **Male** | | | | | | | | | | | | |
| All cancers | 43 | 120.7 | (105.3, | 138.4) | 247 | 67.9 | (62.6, | 73.6) | **1.78** | **(1.52,** | **2.08)** | 52.8 |
| Lung | 14 | 39.8 | (31.5, | 50.3) | 40 | 10.4 | (8.7, | 12.4) | **3.82** | **(2.85,** | **5.12)** | 29.4 |
| Liver | 5 | 13.8 | (9.2, | 20.7) | 6 | 2.0 | (1.3, | 3.1) | **6.82** | **(3.79,** | **12.28)** | 11.8 |
| Prostate | 3 | 8.7 | (5.4, | 14.0) | 41 | 7.4 | (6.3, | 8.7) | 1.18 | (0.71, | 1.95) | 1.3 |
| Stomach | 3 | 7.4 | (4.3, | 13.0) | 10 | 3.1 | (2.0, | 4.8) | **2.41** | **(1.19,** | **4.88)** | 4.4 |
| Colorectal | 2 | 5.5 | (2.9, | 10.2) | 35 | 9.6 | (7.8, | 11.8) | 0.57 | (0.30, | 1.10) | -4.1 |

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 34% of all deaths, with a rate 2.4 times that of non-Māori. Lung cancer was the most common cause of cancer death, at a rate 5 times the rate of non-Māori women. Cancers of the breast, uterus and stomach were the next most frequent. Māori mortality rates for each of these cancers were significantly higher than non-Māori rates, with mortality from stomach cancer notably being 14 times as high.

For Māori males, cancer deaths accounted for 29% of all deaths, with a rate nearly twice that of non-Māori males. Lung cancer was the most common cause of cancer death at a rate 3.8 times the non-Māori rate. The next most common causes were colorectal, prostate, stomach, and liver cancers. Liver cancer mortality was at a rate almost 7 times that of non-Māori.

### Breast and cervical cancer screening

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Māori** | | | **Non-Māori** | | |
| Number screened | Eligible population | % screened | Number screened | Eligible population | % screened |
| 3,668 | 6,395 | 57.4 | 20,942 | 30,095 | 69.6 |

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, 57% of Māori women and 70% of non-Māori women in Bay of Plenty had been screened.

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Māori** | | | | | | **Non-Māori** | | | | |
| Eligible population | Women screened in last 5 years | 5-year coverage % | Women screened in last 3 years | | 3-year coverage % | Eligible population | Women screened in last 5 years | 5-year coverage % | Women screened in last 3 years | 3-year coverage % |
| 12,008 | 9,401 | 78.3 | 7,440 | 62.0 | | 42,873 | 41,601 | 97.0 | 35,762 | 83.4 |

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

Among women aged 25 to 69 years, 78% of Māori women and 97% 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 62% for Māori women and 83% 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, Bay of Plenty 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 | 61 | 698.2 | (604.3, | 806.8) | 47 | 364.4 | (308.7, | 430.2) | **1.92** | **(1.54,** | **2.39)** | 333.8 | |
| Male | 97 | 1,029.9 | (918.2, | 1155.1) | 68 | 502.5 | (438.0, | 576.5) | **2.05** | **(1.71,** | **2.45)** | 527.3 | |
| Total | 159 | 864.1 | (789.8, | 945.4) | 115 | 433.5 | (389.9, | 481.9) | **1.99** | **(1.73,** | **2.29)** | 430.6 | |
| **15–34 years** | | | | | | | | | | | | | |
| Female | 30 | 384.0 | (311.7, | 473.0) | 25 | 155.9 | (124.2, | 195.7) | **2.46** | **(1.81,** | **3.35)** | 228.1 | |
| Male | 11 | 146.7 | (103.2, | 208.4) | 12 | 78.6 | (56.9, | 108.5) | **1.87** | **(1.16,** | **3.01)** | 68.1 | |
| Total | 40 | 265.3 | (221.7, | 317.5) | 37 | 117.2 | (97.4, | 141.2) | **2.26** | **(1.75,** | **2.93)** | 148.1 | |
| **35–64 years** | | | | | | | | | | | | | |
| Female | 28 | 322.9 | (258.9, | 402.8) | 35 | 104.3 | (84.3, | 129.1) | **3.10** | **(2.28,** | **4.21)** | | 218.6 |
| Male | 14 | 174.0 | (127.6, | 237.4) | 13 | 46.7 | (32.8, | 66.4) | **3.73** | **(2.33,** | **5.96)** | | 127.3 |
| Total | 42 | 248.5 | (207.5, | 297.5) | 49 | 75.5 | (62.9, | 90.7) | **3.29** | **(2.55,** | **4.25)** | | 173.0 |
| **65 years and over** | | | | | | | | | | | | | |
| Female | 6 | 303.5 | (186.3, | 494.2) | 15 | 81.6 | (59.1, | 112.7) | **3.72** | **(2.07,** | **6.67)** | | 221.8 |
| Male | 1 | 102.9 | (38.6, | 274.3) | 5 | 27.6 | (15.9, | 47.7) | **3.73** | **(1.21,** | **11.49)** | | 75.3 |
| Total | 7 | 203.2 | (130.7, | 315.7) | 20 | 54.6 | (41.3, | 72.1) | **3.72** | **(2.21,** | **6.27)** | | 148.6 |

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

There were 159 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 2.3 times the non-Māori rate, with an average of 40 admissions per year. Among Māori adults aged 35–64 years, there were 42 admissions per year on average, at 3.3 times the rate of non-Māori. Māori aged 65 years and over were admitted at a rate 3.7 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, Bay of Plenty 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 | 133 | 1,599.9 | (1,447.3, | 1,768.5) | 225 | 287.3 | (261.4, | 315.8) | **5.57** | **(4.85,** | **6.39)** | 1,312.6 |
| Male | 75 | 1,075.6 | (942.8, | 1,227.1) | 292 | 369.3 | (341.1, | 399.8) | **2.91** | **(2.50,** | **3.40)** | 706.3 |
| Total | 209 | 1,337.7 | (1,234.9, | 1,449.1) | 517 | 328.3 | (308.9, | 348.9) | **4.07** | **(3.69,** | **4.51)** | 1,009.4 |

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

There were 209 hospitalisations per year on average for Māori with COPD, at a rate 4 times that of non-Māori, or 1,009 more admissions per 100,000.

Table 52: Early deaths from respiratory disease, Bay of Plenty 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 | 24.9 | (18.4, | 33.8) | 11 | 4.8 | (3.3, | 7.1) | **5.16** | **(3.17,** | **8.39)** | 20.1 |
| Male | 6 | 18.5 | (13.0, | 26.3) | 13 | 5.7 | (4.0, | 8.1) | **3.23** | **(1.96,** | **5.31)** | 12.7 |
| Total | 15 | 21.7 | (17.2, | 27.3) | 24 | 5.3 | (4.1, | 6.8) | **4.11** | **(2.91,** | **5.81)** | 16.4 |

Source: Mortality data, Ministry of Health  
“Early deaths” defined as those occurring under 75 years of age.  
Note: Ratios in **bold** show that Māori rates were significantly different from non-Māori rates in the DHB.

On average, 15 Māori per year died early from respiratory disease, at a rate 4 times the non-Māori rate, or 16 more deaths per 100,000.

## Mental disorders

Table 53: Hospitalisations for mental disorders, all ages, Bay of Plenty 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 | 137 | 477.3 | (431.8, | 527.6) | 474 | 438.4 | (408.9, | 470.1) | 1.09 | (0.96, | 1.23) | 38.9 |
| Schizophrenia | 55 | 197.6 | (168.8, | 231.3) | 66 | 65.3 | (55.2, | 77.2) | **3.03** | **(2.41,** | **3.81)** | 132.3 |
| Mood (affective) | 27 | 89.7 | (71.6, | 112.3) | 132 | 82.5 | (71.1, | 95.7) | 1.09 | (0.83, | 1.42) | 7.2 |
| —Bipolar | 16 | 47.5 | (35.4, | 63.8) | 35 | 30.4 | (23.8, | 38.9) | **1.56** | **(1.06,** | **2.29)** | 17.1 |
| —Depressive   episode | 7 | 26.1 | (16.8, | 40.5) | 70 | 32.1 | (25.4, | 40.5) | 0.81 | (0.50, | 1.34) | -6.0 |
| Substance use | 21 | 76.3 | (59.2, | 98.4) | 62 | 85.3 | (72.4, | 100.4) | 0.89 | (0.66, | 1.21) | -9.0 |
| —Alcohol | 14 | 52.6 | (38.8, | 71.5) | 51 | 68.0 | (56.8, | 81.5) | 0.77 | (0.54, | 1.10) | -15.4 |
| Anxiety,  stress-related | 19 | 65.2 | (49.8, | 85.5) | 89 | 87.8 | (75.2, | 102.5) | 0.74 | (0.54, | 1.01) | -22.6 |
| **Male** | | | | | | | | | | | | |
| All disorders | 233 | 954.7 | (883.8, | 1031.4) | 433 | 483.1 | (451.9, | 516.5) | **1.98** | **(1.78,** | **2.19)** | 471.6 |
| Schizophrenia | 102 | 482.6 | (430.8, | 540.8) | 76 | 109.4 | (94.8, | 126.3) | **4.41** | **(3.67,** | **5.29)** | 373.2 |
| Mood (affective) | 60 | 191.6 | (163.9, | 224.1) | 87 | 89.8 | (77.5, | 104.1) | **2.13** | **(1.72,** | **2.65)** | 101.8 |
| —Bipolar | 20 | 81.3 | (62.4, | 105.7) | 40 | 36.2 | (29.0, | 45.2) | **2.24** | **(1.59,** | **3.17)** | 45.1 |
| —Depressive   episode | 36 | 93.9 | (76.9, | 114.5) | 34 | 38.5 | (30.6, | 48.5) | **2.44** | **(1.80,** | **3.31)** | 55.4 |
| Substance use | 39 | 160.1 | (133.0, | 192.8) | 125 | 154.6 | (137.5, | 173.9) | 1.04 | (0.83, | 1.29) | 5.5 |
| —Alcohol | 15 | 61.2 | (45.5, | 82.4) | 101 | 114.9 | (100.6, | 131.2) | **0.53** | **(0.38,** | **0.74)** | -53.7 |
| Anxiety,  stress-related | 12 | 47.5 | (33.9, | 66.5) | 54 | 62.8 | (52.2, | 75.7) | 0.76 | (0.51, | 1.11) | -15.3 |
| **Total** | | | | | | | | | | | | |
| All disorders | 371 | 716.0 | (673.4, | 761.3) | 907 | 460.8 | (439.1, | 483.5) | **1.55** | **(1.44,** | **1.68)** | 255.3 |
| Schizophrenia | 157 | 340.1 | (310.0, | 373.2) | 141 | 87.3 | (78.3, | 97.4) | **3.89** | **(3.37,** | **4.49)** | 252.8 |
| Mood (affective) | 87 | 140.7 | (123.7, | 159.9) | 219 | 86.1 | (77.6, | 95.6) | **1.63** | **(1.38,** | **1.93)** | 54.5 |
| —Bipolar | 36 | 64.4 | (52.8, | 78.5) | 75 | 33.3 | (28.3, | 39.3) | **1.93** | **(1.49,** | **2.50)** | 31.1 |
| —Depressive  episode | 43 | 60.0 | (50.0, | 72.0) | 104 | 35.3 | (29.9, | 41.6) | **1.70** | **(1.33,** | **2.17)** | 24.7 |
| Substance use | 60 | 118.2 | (101.7, | 137.4) | 187 | 120.0 | (109.1, | 132.0) | 0.99 | (0.82, | 1.18) | -1.8 |
| —Alcohol | 30 | 56.9 | (46.0, | 70.5) | 152 | 91.5 | (82.2, | 101.8) | **0.62** | **(0.49,** | **0.79)** | -34.5 |
| Anxiety,  stress-related | 31 | 56.4 | (45.6, | 69.6) | 143 | 75.3 | (66.9, | 84.8) | **0.75** | **(0.59,** | **0.95)** | -19.0 |

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 one and a half times as high for Māori as for non-Māori.

Among Māori females, the most common cause of admission was schizophrenia related disorders, with 55 admissions per year on average, at a rate 3 times that of non-Māori females. Admissions for bipolar disorders were also higher for Māori women.

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 over 4 times the non-Māori rate. The Māori male admission rates for mood disorders was twice the non-Māori rate.

## Gout

Table 54: Gout prevalence and treatment, 20–79 years, Bay of Plenty 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 drug.

Around 2,660 Māori were estimated to have gout in 2011, a prevalence of 8%, 90% higher than the prevalence in non-Māori. Thirty-eight percent 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 within the following six months.

Table 55: Hospitalisations for gout, 25 years and over, Bay of Plenty 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 | 44.4 | (30.7, | 64.2) | 11 | 4.7 | (3.1, | 7.1) | **9.42** | **(5.41,** | **16.39)** | 39.7 |
| Male | 42 | 261.8 | (217.7, | 314.9) | 45 | 42.6 | (33.8, | 53.8) | **6.14** | **(4.56,** | **8.27)** | 219.2 |
| Total | 53 | 153.1 | (129.6, | 180.8) | 56 | 23.7 | (19.1, | 29.3) | **6.47** | **(4.93,** | **8.48)** | 129.4 |

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

There were 53 hospital admissions for gout per year on average among Bay of Plenty Māori, more frequent among males than females. The rate of admission was 6.5 times the non-Māori rate, or 129 more admissions per 100,000.

## Hip fractures

Table 56: Hospitalisations for hip fractures, 65 years and over, Bay of Plenty DHB, 2011–2013

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Gender** | **Māori** | | | | **Non-Māori** | | | | Māori/non-Māori  ratio (95% CI) | | | Rate difference |
| Ave. no. per year | Age-standardised  rate per 100,000 (95% CI) | | | Ave. no. per year | Age-standardised  rate per 100,000 (95% CI) | | |
| Female | 4 | 189.7 | (109.0, | 330.2) | 133 | 363.4 | (322.9, | 409.0) | **0.52** | **(0.30,** | **0.92)** | -173.7 |
| Male | 1 | 55.8 | (18.0, | 173.0) | 58 | 209.4 | (177.2, | 247.3) | **0.27** | **(0.08,** | **0.84)** | -153.6 |
| Total | 5 | 122.7 | (74.5, | 202.3) | 191 | 286.4 | (260.0, | 315.4) | **0.43** | **(0.26,** | **0.71)** | -163.7 |

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

On average, five Māori per year aged 65 and over were admitted to hospital for hip fractures, at a rate just under half that of non-Māori.

## Elective surgery

Table 57: Hospitalisations for hip replacements, 50 years and over, Bay of Plenty 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 | 22 | 379.0 | (296.7, | 484.1) | 146 | 290.6 | (260.9, | 323.8) | 1.30 | (1.00, | 1.70) | 88.4 |
| Male | 23 | 459.5 | (363.1, | 581.5) | 135 | 313.9 | (280.8, | 350.8) | **1.46** | **(1.13,** | **1.90)** | 145.6 |
| Total | 45 | 419.2 | (353.7, | 496.9) | 281 | 302.3 | (279.7, | 326.7) | **1.39** | **(1.15,** | **1.67)** | 117.0 |

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

On average, 45 Māori aged 50 years and over were admitted to hospital per year for a hip replacement, at a rate 39% higher than that of non-Māori, or 117 more admissions per 100,000.

Table 58: Publicly funded hospitalisations for cataract surgery, 45 years and over, Bay of Plenty 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 | 54 | 604.9 | (516.7, | 708.3) | 282 | 294.3 | (270.6, | 320.2) | **2.06** | **(1.72,** | **2.46)** | 310.6 |
| Male | 51 | 708.2 | (603.1, | 831.5) | 227 | 266.3 | (242.9, | 292.0) | **2.66** | **(2.21,** | **3.20)** | 441.9 |
| Total | 105 | 656.6 | (586.4, | 735.1) | 510 | 280.3 | (263.4, | 298.3) | **2.34** | **(2.06,** | **2.66)** | 376.2 |

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

On average, 105 Bay of Plenty Māori aged 45 years and over were admitted to hospital per year for cataract surgery. The rate was 2.3 times the rate for non-Māori, or 376 more admissions per 100,000.

# Mauri ora: All ages

T

his 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 Bay of Plenty Region.

## Hospitalisations

Table 59: All-cause hospitalisations, all ages, Bay of Plenty 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 | 7,565 | 26,734.7 | (26,375.8, | 27,098.6) | 22,088 | 22,697.2 | (22,456.5, | 22,940.5) | **1.18** | **(1.16,** | **1.20)** | 4,037.5 |
| Male | 5,911 | 20,908.9 | (20,592.0, | 21,230.7) | 18,935 | 17,933.1 | (17,719.2, | 18,149.6) | **1.17** | **(1.14,** | **1.19)** | 2,975.8 |
| Total | 13,476 | 23,821.8 | (23,581.9, | 24,064.2) | 41,024 | 20,315.2 | (20,153.9, | 20,477.7) | **1.17** | **(1.16,** | **1.19)** | 3,506.6 |

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

On average, there were just under 13,500 Māori hospital admissions per year and over 41,000 non-Māori admissions. All-cause admission rates were 17% higher for Māori than non-Māori, or around 3,500 more admissions per 100,000.

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

### Potentially avoidable hospitalisations

Table 60: Potentially avoidable hospitalisations, 0–74 years, Bay of Plenty 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 | 1,775 | 6,114.3 | (5,946.4, | 6,287.0) | 3,290 | 4,193.4 | (4,088.5, | 4,301.0) | **1.46** | **(1.40,** | **1.51)** | 1,920.9 |
| Male | 1,613 | 5,848.0 | (5,680.6, | 6,020.4) | 3,517 | 4,373.1 | (4,267.4, | 4,481.4) | **1.34** | **(1.29,** | **1.39)** | 1,474.9 |
| Total | 3,388 | 5,981.2 | (5,862.1, | 6,102.6) | 6,807 | 4,283.3 | (4,208.5, | 4,359.3) | **1.40** | **(1.36,** | **1.43)** | 1,697.9 |

Source: NMDS  
Notes: Ratios in **bold** show t Māori rates were significantly different from non-Māori rates in the DHB. Table revised April 2016.

Close to 3,400 Māori hospital admissions per year were potentially avoidable through population based prevention strategies, at a rate 40% higher than for non-Māori, or around 1,700 more admissions per 100,000.

Table 61: Ambulatory care sensitive hospitalisations, 0–74 years, Bay of Plenty 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 | 1,024 | 6,168.5 | (5,999.1, | 6,342.7) | 1,631 | 4,230.6 | (4,124.7, | 4,339.1) | **1.66** | **(1.58,** | **1.75)** | 1,938.0 |
| Male | 985 | 5,899.8 | (5,730.9, | 6,073.7) | 1,813 | 4,411.9 | (4,305.3, | 4,521.1) | **1.57** | **(1.49,** | **1.65)** | 1,487.9 |
| Total | 2,009 | 6,034.2 | (5,914.0, | 6,156.7) | 3,444 | 4,321.2 | (4,245.8, | 4,397.9) | **1.62** | **(1.56,** | **1.68)** | 1,712.9 |

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

On average, there were 2,009 ambulatory care sensitive hospitalisations per year among Māori, at a rate that was 62% higher than the non-Māori rate, or 1,713 more admissions per 100,000.

## Mortality

Table 62: Life expectancy at birth, Bay of Plenty Region, 2012–2014

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Gender** | **Māori** | | | **Non-Māori** | | | Difference in years |
| Years (95% credible interval) | | | Years (95% credible interval) | | |
| Female | 76.7 | (76.0, | 77.5) | 84.5 | (84.2, | 84.7) | -7.8 |
| Male | 72.3 | (71.6, | 73.1) | 80.7 | (80.4, | 81.0) | -8.4 |

Source: Statistics New Zealand Subnational Period Life Tables: 2012–14  
Notes: This data is for the Bay of Plenty Region which includes the Rotorua District. A map of Regional Council boundaries can be found [here](http://www.lgnz.co.nz/home/nzs-local-government/new-zealands-councils/). 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](http://www.stats.govt.nz/browse_for_stats/health/life_expectancy/SubnationalPeriodLifeTables_HOTP12-14/Commentary.aspx).

Life expectancy at birth is a summary measure of age-specific mortality rates during a specific period. During 2012–2014, among residents of the Bay of Plenty Region, life expectancy at birth was 76.7 years for Māori females, 7.8 years lower than for non-Māori females (84.5 years). For Māori males, life expectancy was 72.3 years, 8.4 years lower than that of non-Māori males (80.7 years).

Table 63: All-cause deaths, all ages, Bay of Plenty 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 | 126 | 327.1 | (308.8, | 346.5) | 668 | 133.1 | (126.8, | 139.7) | **2.46** | **(2.28,** | **2.65)** | 194.1 |
| Male | 151 | 491.6 | (466.7, | 517.7) | 716 | 222.8 | (213.9, | 232.0) | **2.21** | **(2.07,** | **2.36)** | 268.8 |
| Total | 277 | 409.4 | (393.8, | 425.5) | 1,384 | 177.9 | (172.5, | 183.6) | **2.30** | **(2.19,** | **2.42)** | 231.4 |

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 277 Māori deaths per year on average in Bay of Plenty from 2008 to 2012. The Māori mortality rate was over twice the non-Māori rate, or 231 more deaths per 100,000.

Table 64: Leading causes of death for Māori, all ages, Bay of Plenty 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 | 16 | 33.6 | (26.8, | 42.1) | 119 | 11.3 | (10.1, | 12.6) | **2.97** | **(2.31,** | **3.82)** | 22.3 |
| Lung cancer | 16 | 38.9 | (31.2, | 48.5) | 32 | 7.7 | (6.3, | 9.4) | **5.04** | **(3.75,** | **6.77)** | 31.2 |
| COPD | 10 | 20.5 | (15.5, | 27.3) | 35 | 5.0 | (4.1, | 6.0) | **4.15** | **(2.95,** | **5.83)** | 15.6 |
| Stroke | 9 | 20.7 | (15.3, | 28.1) | 79 | 8.5 | (7.2, | 10.1) | **2.43** | **(1.72,** | **3.44)** | 12.2 |
| Diabetes | 9 | 19.6 | (14.4, | 26.5) | 16 | 2.9 | (1.9, | 4.3) | **6.74** | **(4.08,** | **11.13)** | 16.7 |
| **Male** | | | | | | | | | | | | |
| IHD | 26 | 74.2 | (62.4, | 88.3) | 150 | 30.2 | (27.5, | 33.3) | **2.45** | **(2.01,** | **2.99)** | 44.0 |
| Accidents | 15 | 58.5 | (46.3, | 73.9) | 30 | 29.2 | (23.5, | 36.3) | **2.00** | **(1.46,** | **2.76)** | 29.3 |
| Lung cancer | 14 | 39.8 | (31.5, | 50.3) | 40 | 10.4 | (8.7, | 12.4) | **3.82** | **(2.85,** | **5.12)** | 29.4 |
| Diabetes | 11 | 32.1 | (24.6, | 41.9) | 17 | 3.3 | (2.6, | 4.3) | **9.65** | **(6.69,** | **13.92)** | 28.8 |
| Suicide | 8 | 32.5 | (23.5, | 44.8) | 15 | 15.4 | (11.6, | 20.3) | **2.11** | **(1.38,** | **3.24)** | 17.1 |
| **Total** | | | | | | | | | | | | |
| IHD | 43 | 53.9 | (46.9, | 61.9) | 268 | 20.8 | (19.2, | 22.4) | **2.60** | **(2.22,** | **3.04)** | 33.1 |
| Lung cancer | 31 | 39.3 | (33.5, | 46.2) | 72 | 9.1 | (8.0, | 10.3) | **4.34** | **(3.53,** | **5.34)** | 30.3 |
| Accidents | 20 | 38.6 | (31.6, | 47.2) | 53 | 19.4 | (16.2, | 23.4) | **1.99** | **(1.51,** | **2.61)** | 19.2 |
| Diabetes | 20 | 25.8 | (21.1, | 31.6) | 33 | 3.1 | (2.5, | 3.9) | **8.29** | **(6.11,** | **11.25)** | 22.7 |
| COPD | 17 | 19.6 | (15.7, | 24.3) | 77 | 5.9 | (5.2, | 6.7) | **3.32** | **(2.59,** | **4.26)** | 13.7 |

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 Bay of Plenty Māori women were ischaemic heart disease, lung cancer, chronic obstructive pulmonary disease, stroke, and diabetes mellitus. Mortality rates for these conditions were 2.4 to 6.8 times as high for Māori women as for non-Māori women. Absolute differences ranged from 12 per 100,000 for stroke to 31 per 100,000 for lung cancer.

For Bay of Plenty Māori men, the leading causes of death were ischaemic heart disease, accidents, lung cancer, diabetes mellitus, and suicide. Mortality rates for these conditions were all at least twice as high as non-Māori, and Māori men were notably found to have a mortality rate from diabetes close to 10 times as high as for non-Māori men. The highest absolute difference was for IHD at 44 more deaths per 100,000.

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, Bay of Plenty 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 | 72 | 207.8 | (186.9, | 231.1) | 116 | 64.5 | (57.4, | 72.6) | **3.22** | **(2.75,** | **3.77)** | 143.3 |
| Male | 94 | 308.4 | (280.9, | 338.6) | 176 | 119.7 | (109.2, | 131.3) | **2.58** | **(2.26,** | **2.94)** | 188.7 |
| Total | 166 | 258.1 | (240.6, | 276.9) | 291 | 92.1 | (85.7, | 99.1) | **2.80** | **(2.53,** | **3.10)** | 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 166 potentially avoidable Māori deaths per year in Bay of Plenty, at a rate 2.8 times the non-Māori rate, or 166 more deaths per 100,000.

Table 66: Amenable mortality, 0–74 years, Bay of Plenty 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 | 50 | 144.1 | (126.8, | 163.9) | 72 | 42.0 | (36.3, | 48.6) | **3.43** | **(2.83,** | **4.17)** | 102.2 |
| Male | 67 | 222.0 | (198.7, | 247.9) | 129 | 88.7 | (79.7, | 98.7) | **2.50** | **(2.15,** | **2.92)** | 133.3 |
| Total | 117 | 183.1 | (168.3, | 199.1) | 202 | 65.3 | (59.9, | 71.2) | **2.80** | **(2.48,** | **3.16)** | 117.7 |

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 2.8 times as high for Māori as for non-Māori in Bay of Plenty, or 118 more deaths per 100,000. On average, there were 117 Māori deaths per year from conditions amenable to health care.

## Injuries

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

Table 67: Hospitalisations for injuries, all ages, Bay of Plenty 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 | 592 | 2,118.7 | (2,019.2, | 2,223.2) | 2,020 | 1,882.8 | (1,814.6, | 1,953.5) | **1.13** | **(1.06,** | **1.20)** | 236.0 |
| Male | 913 | 3,577.3 | (3,442.0, | 3,717.9) | 2,307 | 2,724.3 | (2,643.3, | 2,807.7) | **1.31** | **(1.25,** | **1.38)** | 853.0 |
| Total | 1,505 | 2,848.0 | (2,763.5, | 2,935.1) | 4,326 | 2,303.5 | (2,250.3, | 2,357.9) | **1.24** | **(1.19,** | **1.28)** | 544.5 |

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

On average, there were just over 1,500 hospital admissions for injury per year, at a rate 24% higher than non-Māori or 545 more admissions per 100,000.

Table 68: Hospitalisations for assault, all ages, Bay of Plenty 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 | 49 | 193.6 | (164.4, | 228.0) | 30 | 46.6 | (37.0, | 58.7) | **4.15** | **(3.13,** | **5.51)** | 147.0 |
| Male | 104 | 447.5 | (399.6, | 501.1) | 102 | 174.1 | (154.6, | 196.0) | **2.57** | **(2.18,** | **3.03)** | 273.4 |
| Total | 153 | 320.5 | (292.0, | 351.8) | 132 | 110.4 | (99.3, | 122.6) | **2.90** | **(2.52,** | **3.34)** | 210.2 |

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

On average 153 Māori per year were admitted to hospital for injury caused by assault, at a rate close to 3 times the non-Māori rate, or 210 more admissions per 100,000. Males had higher admission rates than females.

Table 69: Deaths from injury, all ages, Bay of Plenty 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 | 8 | 29.3 | (21.3, | 40.4) | 28 | 16.3 | (12.3, | 21.5) | **1.80** | **(1.18,** | **2.75)** | 13.0 |
| Male | 25 | 100.8 | (84.2, | 120.7) | 47 | 47.7 | (40.4, | 56.4) | **2.11** | **(1.65,** | **2.70)** | 53.1 |
| Total | 33 | 65.1 | (55.6, | 76.1) | 75 | 32.0 | (27.7, | 36.9) | **2.03** | **(1.64,** | **2.51)** | 33.1 |

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, 33 Bay of Plenty Māori died from injuries per year at a rate twice that of non-Māori, or 33 more deaths per 100,000. Injury mortality rates were higher for males than for females.

# References

Anderson P, Craig E, Jackson G, Jackson C. 2012. Developing a tool to monitor potentially avoidable and ambulatory care sensitive hospitalisations in New Zealand children. *New Zealand Medical Journal* 125(1366): 25–37.

Clayton D, Hills M. 1993. *Statistical Methods in Epidemiology*. Oxford: Oxford University Press.

Crengle S, Clark T C., Robinson E, Bullen P, Dyson B, Denny S, Fleming T, Fortune S, Peiris-John R, Utter J, Rossen F, Sheridan J, Teevale T, & The Adolescent Health Research Group (2013). *The health and wellbeing of Māori New Zealand secondary school students in 2012. Te Ara Whakapiki Taitamariki: Youth’12.* Auckland: The University of Auckland.

Ministry of Health. 2010. *Saving Lives: Amenable mortality in New Zealand, 1996–2006*. Wellington: Ministry of Health.

Ministry of Health. 2013. *New Zealand Health Survey: Annual update of key findings 2012/13*. Wellington: Ministry of Health.

Ministry of Health. 2014. *The Health of Māori Adults and Children, 2011–2013*. Wellington: Ministry of Health.

Robson B, Harris R. 2007. *Hauora: Māori Standards of Health IV. A study of the years 2000–2005.* Wellington: Te Rōpū Rangahau Hauora a Eru Pōmare.

Robson B, Purdie G, Cram F, Simmonds S. 2007. Age standardisation: an indigenous standard? *Emerging Themes in Epidemiology* 4:3.

# Appendix 1: Population projections

Table 70: Māori population projections, single year by age group, Bay of Plenty 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 | 620 | 600 | 1,220 | 640 | | 610 | | 1,250 | | 630 | | | 600 | | 1,230 | | 630 | | 600 | | 1,220 | |
| 1-4 | 2,640 | 2,360 | 5,000 | 2,590 | | 2,380 | | 4,970 | | 2,580 | | | 2,380 | | 4,960 | | 2,530 | | 2,400 | | 4,920 | |
| 5-9 | 3,180 | 2,980 | 6,160 | 3,250 | | 2,990 | | 6,240 | | 3,310 | | | 3,050 | | 6,360 | | 3,410 | | 3,060 | | 6,470 | |
| 10-14 | 2,990 | 2,850 | 5,840 | 2,990 | | 2,850 | | 5,840 | | 2,930 | | | 2,830 | | 5,760 | | 2,930 | | 2,800 | | 5,730 | |
| 15-19 | 2,630 | 2,490 | 5,120 | 2,710 | | 2,550 | | 5,270 | | 2,830 | | | 2,580 | | 5,410 | | 2,830 | | 2,610 | | 5,440 | |
| 20-24 | 1,800 | 2,000 | 3,800 | 1,870 | | 1,990 | | 3,860 | | 1,930 | | | 2,010 | | 3,940 | | 2,010 | | 2,040 | | 4,050 | |
| 25-29 | 1,390 | 1,670 | 3,060 | 1,440 | | 1,720 | | 3,160 | | 1,490 | | | 1,770 | | 3,260 | | 1,570 | | 1,840 | | 3,410 | |
| 30-34 | 1,360 | 1,660 | 3,020 | 1,350 | | 1,630 | | 2,990 | | 1,320 | | | 1,630 | | 2,950 | | 1,330 | | 1,630 | | 2,960 | |
| 35-39 | 1,440 | 1,740 | 3,190 | 1,400 | | 1,740 | | 3,140 | | 1,370 | | | 1,700 | | 3,070 | | 1,300 | | 1,650 | | 2,940 | |
| 40-44 | 1,510 | 1,770 | 3,270 | 1,460 | | 1,790 | | 3,250 | | 1,470 | | | 1,790 | | 3,260 | | 1,480 | | 1,800 | | 3,280 | |
| 45-49 | 1,380 | 1,650 | 3,030 | 1,400 | | 1,620 | | 3,020 | | 1,380 | | | 1,630 | | 3,010 | | 1,380 | | 1,650 | | 3,030 | |
| 50-54 | 1,490 | 1,630 | 3,130 | 1,470 | | 1,660 | | 3,130 | | 1,480 | | | 1,680 | | 3,160 | | 1,430 | | 1,630 | | 3,060 | |
| 55-59 | 1,140 | 1,350 | 2,490 | 1,180 | | 1,390 | | 2,570 | | 1,190 | | | 1,420 | | 2,610 | | 1,270 | | 1,480 | | 2,760 | |
| 60-64 | 920 | 1,000 | 1,910 | 950 | | 1,060 | | 2,010 | | 990 | | | 1,110 | | 2,090 | | 990 | | 1,170 | | 2,170 | |
| 65-69 | 650 | 690 | 1,340 | 700 | | 740 | | 1,430 | | 740 | | | 800 | | 1,550 | | 790 | | 850 | | 1,640 | |
| 70-74 | 470 | 540 | 1,010 | 490 | | 530 | | 1,020 | | 480 | | | 540 | | 1,020 | | 490 | | 520 | | 1,020 | |
| 75-79 | 280 | 340 | 610 | 290 | | 340 | | 630 | | 300 | | | 370 | | 670 | | 310 | | 410 | | 720 | |
| 80-84 | 130 | 220 | 340 | 140 | | 250 | | 390 | | 160 | | | 250 | | 410 | | 170 | | 240 | | 410 | |
| 85-89 | 40 | 90 | 140 | 40 | | 90 | | 130 | | 50 | | | 80 | | 130 | | 50 | | 100 | | 150 | |
| 90+ | 10 | 30 | 40 | 10 | | 30 | | 50 | | 10 | | | 50 | | 60 | | 10 | | 50 | | 70 | |
| **All Ages** | **26,100** | **27,700** | **53,700** | **26,400** | | **28,000** | | **54,300** | | **26,700** | | | **28,300** | | **54,900** | | **26,900** | | **28,500** | | **55,400** | |
|  |  | **2017** |  |  | | **2018** | |  | |  | | | **2019** | |  | |  | | **2020** | |  | |
| 0 | 620 | 590 | 1,220 | 620 | | 590 | | 1,210 | | 620 | | | 590 | | 1,210 | | 620 | | 590 | | 1,210 | |
| 1-4 | 2,520 | 2,420 | 4,950 | 2,530 | | 2,410 | | 4,930 | | 2,510 | | | 2,390 | | 4,900 | | 2,500 | | 2,380 | | 4,880 | |
| 5-9 | 3,370 | 3,000 | 6,370 | 3,310 | | 2,990 | | 6,300 | | 3,280 | | | 3,020 | | 6,290 | | 3,260 | | 3,000 | | 6,260 | |
| 10-14 | 3,000 | 2,860 | 5,860 | 3,140 | | 2,920 | | 6,060 | | 3,200 | | | 2,930 | | 6,140 | | 3,260 | | 2,990 | | 6,250 | |
| 15-19 | 2,810 | 2,610 | 5,420 | 2,740 | | 2,590 | | 5,330 | | 2,740 | | | 2,570 | | 5,310 | | 2,680 | | 2,550 | | 5,220 | |
| 20-24 | 2,120 | 2,100 | 4,220 | 2,220 | | 2,110 | | 4,330 | | 2,290 | | | 2,170 | | 4,460 | | 2,400 | | 2,190 | | 4,600 | |
| 25-29 | 1,590 | 1,850 | 3,440 | 1,630 | | 1,880 | | 3,510 | | 1,700 | | | 1,870 | | 3,570 | | 1,760 | | 1,880 | | 3,650 | |
| 30-34 | 1,340 | 1,610 | 2,950 | 1,320 | | 1,640 | | 2,960 | | 1,370 | | | 1,690 | | 3,050 | | 1,420 | | 1,730 | | 3,150 | |
| 35-39 | 1,310 | 1,670 | 2,980 | 1,300 | | 1,630 | | 2,930 | | 1,290 | | | 1,600 | | 2,900 | | 1,260 | | 1,590 | | 2,860 | |
| 40-44 | 1,430 | 1,740 | 3,170 | 1,380 | | 1,700 | | 3,080 | | 1,340 | | | 1,690 | | 3,030 | | 1,300 | | 1,650 | | 2,950 | |
| 45-49 | 1,380 | 1,700 | 3,080 | 1,430 | | 1,710 | | 3,140 | | 1,390 | | | 1,730 | | 3,120 | | 1,390 | | 1,730 | | 3,130 | |
| 50-54 | 1,340 | 1,610 | 2,940 | 1,310 | | 1,590 | | 2,900 | | 1,320 | | | 1,560 | | 2,880 | | 1,310 | | 1,560 | | 2,870 | |
| 55-59 | 1,380 | 1,500 | 2,880 | 1,390 | | 1,560 | | 2,950 | | 1,370 | | | 1,580 | | 2,950 | | 1,390 | | 1,600 | | 2,990 | |
| 60-64 | 1,020 | 1,210 | 2,230 | 1,030 | | 1,270 | | 2,300 | | 1,070 | | | 1,300 | | 2,370 | | 1,070 | | 1,330 | | 2,400 | |
| 65-69 | 810 | 900 | 1,710 | 810 | | 910 | | 1,720 | | 840 | | | 970 | | 1,810 | | 880 | | 1,010 | | 1,890 | |
| 70-74 | 500 | 560 | 1,060 | 550 | | 600 | | 1,150 | | 590 | | | 640 | | 1,230 | | 630 | | 710 | | 1,330 | |
| 75-79 | 340 | 420 | 750 | 360 | | 440 | | 800 | | 380 | | | 430 | | 810 | | 370 | | 440 | | 810 | |
| 80-84 | 190 | 250 | 440 | 180 | | 240 | | 420 | | 190 | | | 240 | | 430 | | 200 | | 270 | | 460 | |
| 85-89 | 50 | 110 | 160 | 50 | | 120 | | 180 | | 60 | | | 160 | | 220 | | 80 | | 160 | | 250 | |
| 90+ | 20 | 50 | 70 | 20 | | 50 | | 70 | | 10 | | | 40 | | 60 | | 20 | | 50 | | 60 | |
| **All Ages** | **27,100** | **28,800** | **55,900** | **27,300** | | **28,900** | | **56,300** | | **27,600** | | | **29,200** | | **56,700** | | **27,800** | | **29,400** | | **57,200** | |
| These projections were derived in October 2014. | | | | | | |  | |  | |  |  | |  | |  | |  | |  | |  |
| **Source: Statistics New Zealand** | | | |  |  | |  | |  | |  |  | |  | |  | |  | |  | |  |

Table 71: Total population projections, single year, by age group, Bay of Plenty 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 | 1,450 | 1,400 | 2,840 | 1,420 | 1,360 | 2,780 | 1,450 | 1,380 | | 2,820 | 1,460 | 1,390 | 2,850 |
| 1-4 | 6,270 | 5,840 | 12,110 | 6,140 | 5,820 | 11,960 | 6,060 | 5,720 | | 11,790 | 5,960 | 5,650 | 11,610 |
| 5-9 | 7,830 | 7,370 | 15,200 | 8,020 | 7,480 | 15,500 | 8,150 | 7,660 | | 15,810 | 8,290 | 7,800 | 16,090 |
| 10-14 | 7,910 | 7,480 | 15,400 | 7,750 | 7,440 | 15,190 | 7,630 | 7,380 | | 15,010 | 7,540 | 7,270 | 14,810 |
| 15-19 | 7,230 | 6,700 | 13,940 | 7,470 | 6,700 | 14,160 | 7,630 | 6,720 | | 14,360 | 7,620 | 6,730 | 14,350 |
| 20-24 | 5,710 | 5,640 | 11,350 | 5,850 | 5,740 | 11,590 | 5,920 | 5,790 | | 11,710 | 5,960 | 5,730 | 11,690 |
| 25-29 | 5,010 | 5,500 | 10,500 | 5,310 | 5,770 | 11,080 | 5,720 | 6,060 | | 11,780 | 6,080 | 6,420 | 12,500 |
| 30-34 | 5,000 | 5,760 | 10,760 | 5,120 | 5,860 | 10,980 | 5,210 | 5,990 | | 11,200 | 5,380 | 6,100 | 11,480 |
| 35-39 | 5,680 | 6,510 | 12,190 | 5,500 | 6,400 | 11,900 | 5,400 | 6,230 | | 11,630 | 5,390 | 6,240 | 11,630 |
| 40-44 | 6,770 | 7,810 | 14,580 | 6,710 | 7,760 | 14,470 | 6,580 | 7,640 | | 14,220 | 6,330 | 7,300 | 13,640 |
| 45-49 | 6,810 | 7,720 | 14,530 | 6,750 | 7,730 | 14,480 | 6,820 | 7,910 | | 14,730 | 6,890 | 7,940 | 14,830 |
| 50-54 | 7,240 | 8,070 | 15,310 | 7,330 | 8,090 | 15,410 | 7,360 | 8,100 | | 15,460 | 7,260 | 8,020 | 15,280 |
| 55-59 | 6,650 | 7,420 | 14,080 | 6,760 | 7,530 | 14,290 | 6,860 | 7,700 | | 14,560 | 7,050 | 7,990 | 15,040 |
| 60-64 | 6,240 | 6,680 | 12,930 | 6,360 | 7,000 | 13,360 | 6,560 | 7,180 | | 13,740 | 6,660 | 7,390 | 14,050 |
| 65-69 | 5,870 | 6,280 | 12,150 | 6,150 | 6,470 | 12,620 | 6,330 | 6,750 | | 13,080 | 6,500 | 7,000 | 13,500 |
| 70-74 | 4,640 | 5,180 | 9,820 | 4,760 | 5,380 | 10,140 | 4,910 | 5,560 | | 10,460 | 5,080 | 5,560 | 10,640 |
| 75-79 | 3,380 | 3,830 | 7,200 | 3,600 | 3,940 | 7,540 | 3,770 | 4,190 | | 7,960 | 3,980 | 4,550 | 8,540 |
| 80-84 | 2,490 | 2,900 | 5,390 | 2,450 | 3,010 | 5,470 | 2,500 | 3,000 | | 5,500 | 2,510 | 3,020 | 5,530 |
| 85-89 | 1,280 | 1,880 | 3,160 | 1,340 | 1,890 | 3,230 | 1,440 | 1,940 | | 3,370 | 1,530 | 2,010 | 3,540 |
| 90+ | 480 | 1,040 | 1,520 | 560 | 1,110 | 1,660 | 600 | 1,220 | | 1,820 | 650 | 1,270 | 1,920 |
| **All Ages** | **103,900** | **111,000** | **215,000** | **105,300** | **112,500** | **217,800** | **106,900** | **114,100** | | **221,000** | **108,100** | **115,400** | **223,500** |
|  |  | **2017** |  |  | **2018** |  |  | **2019** | |  |  | **2020** |  |
| 0 | 1,470 | 1,400 | 2,870 | 1,480 | 1,410 | 2,890 | 1,490 | 1,420 | | 2,920 | 1,510 | 1,440 | 2,950 |
| 1-4 | 5,910 | 5,660 | 11,570 | 5,930 | 5,660 | 11,580 | 5,970 | 5,700 | | 11,680 | 6,020 | 5,750 | 11,770 |
| 5-9 | 8,240 | 7,710 | 15,950 | 8,120 | 7,660 | 15,780 | 7,950 | 7,580 | | 15,520 | 7,850 | 7,470 | 15,320 |
| 10-14 | 7,640 | 7,360 | 15,000 | 7,860 | 7,510 | 15,370 | 8,030 | 7,610 | | 15,640 | 8,140 | 7,760 | 15,890 |
| 15-19 | 7,530 | 6,680 | 14,220 | 7,320 | 6,540 | 13,860 | 7,130 | 6,480 | | 13,620 | 6,980 | 6,390 | 13,370 |
| 20-24 | 6,020 | 5,740 | 11,760 | 6,180 | 5,730 | 11,910 | 6,380 | 5,690 | | 12,060 | 6,490 | 5,670 | 12,150 |
| 25-29 | 6,370 | 6,620 | 12,990 | 6,500 | 6,740 | 13,240 | 6,580 | 6,780 | | 13,360 | 6,590 | 6,770 | 13,350 |
| 30-34 | 5,530 | 6,230 | 11,760 | 5,750 | 6,450 | 12,200 | 6,000 | 6,680 | | 12,680 | 6,360 | 6,920 | 13,280 |
| 35-39 | 5,410 | 6,290 | 11,700 | 5,390 | 6,350 | 11,730 | 5,480 | 6,410 | | 11,890 | 5,540 | 6,500 | 12,050 |
| 40-44 | 6,150 | 7,060 | 13,210 | 5,960 | 6,740 | 12,700 | 5,750 | 6,610 | | 12,360 | 5,610 | 6,410 | 12,020 |
| 45-49 | 6,900 | 7,920 | 14,830 | 6,910 | 7,940 | 14,850 | 6,840 | 7,870 | | 14,710 | 6,690 | 7,720 | 14,410 |
| 50-54 | 7,020 | 7,880 | 14,900 | 6,960 | 7,860 | 14,820 | 6,880 | 7,860 | | 14,740 | 6,920 | 8,010 | 14,930 |
| 55-59 | 7,300 | 8,120 | 15,430 | 7,430 | 8,310 | 15,740 | 7,510 | 8,320 | | 15,830 | 7,530 | 8,310 | 15,830 |
| 60-64 | 6,830 | 7,700 | 14,530 | 6,930 | 7,840 | 14,760 | 7,030 | 7,930 | | 14,960 | 7,100 | 8,070 | 15,180 |
| 65-69 | 6,490 | 6,960 | 13,450 | 6,490 | 7,020 | 13,510 | 6,600 | 7,320 | | 13,920 | 6,790 | 7,480 | 14,270 |
| 70-74 | 5,370 | 5,850 | 11,220 | 5,740 | 6,260 | 12,000 | 6,020 | 6,440 | | 12,470 | 6,190 | 6,710 | 12,900 |
| 75-79 | 4,180 | 4,840 | 9,020 | 4,240 | 4,860 | 9,110 | 4,340 | 5,050 | | 9,390 | 4,460 | 5,210 | 9,670 |
| 80-84 | 2,550 | 3,110 | 5,660 | 2,680 | 3,270 | 5,950 | 2,870 | 3,360 | | 6,240 | 3,010 | 3,580 | 6,590 |
| 85-89 | 1,590 | 2,040 | 3,630 | 1,610 | 2,100 | 3,710 | 1,580 | 2,210 | | 3,790 | 1,630 | 2,190 | 3,810 |
| 90+ | 690 | 1,320 | 2,020 | 740 | 1,370 | 2,110 | 800 | 1,390 | | 2,200 | 870 | 1,490 | 2,360 |
| **All Ages** | **109,200** | **116,500** | **225,700** | **110,200** | **117,600** | **227,800** | **111,200** | **118,700** | | **230,000** | **112,300** | **119,800** | **232,100** |
| 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.](http://www.stats.govt.nz/Census/2013-census/info-about-2013-census-data/2013-census-definitions-forms/definitions.aspx)

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](http://www.stats.govt.nz/survey-participants/a-z-of-our-surveys/te-kupenga-data-dictionary.aspx).

## Deaths, hospitalisations and cancer registrations

### Ethnicity

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

### Residence

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

### Hospital transfers

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

### Suppression of causes of death or hospitalisation

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

### Ninety-five percent confidence intervals

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

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

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

### Age standardisation

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

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

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

Table 73: 2001 Census total Māori population

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

### ICD-10 codes

The International Classification of Diseases (ICD-10) codes used for the calculation of avoidable and ambulatory sensitive hospitalisations and avoidable and amenable mortality are presented in Tables 45 to 49 below. For the Excel tables of deaths by cause, hospitalisations by cause, mental disorders, hospitalisations for injuries by external cause, and cancer registrations, the codes are listed in Appendix 2 of [Hauora: Māori Standards of Health IV.](http://www.otago.ac.nz/wellington/otago067739.pdf) 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.





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. [↑](#footnote-ref-1)
2. Population projections are provided in Appendix 1. [↑](#footnote-ref-2)