Executive Summary

Introduction

This project collected the latest health and social data available for the population of Te Moana ā Toi. The boundaries of Te Moana ā Toi closely align with Bay of Plenty District Health Board (BOPDHB), and include five territorial authorities (TAs). In addition to gathering quantitative data, primary and secondary interview data from youth in the area were collated and used to augment the quantitative data. Drawing on both quantitative and qualitative sources gives a comprehensive profile of health and social needs and aspirations for those living in the area.

Creating a profile of health and social needs for Te Moana ā Toi serves several objectives. First, the profile is a useful tool to assist with prioritisation decisions in the area. Te Puni Kōkiri (TPK) has established ten Regional Leadership Groups (RLGs) around the country to provide strategic leadership for Whānau Ora centred initiatives. The Regional Leadership Group for Te Moana ā Toi may use this report to aid this role; the report helps to identify the most pressing health and social needs in the area and can help direct resources accordingly. The report can be used in the same way by providers in the area. Additionally, the report provides a means to benchmark the health and social status of Te Moana ā Toi, compare it with other areas, and track improvement over time.

Methods

Quantitative data were collected from a range of national and regional health and social databases. In parallel, a range of national statistical and health surveys were used to create a local picture. A selection of these measures have been presented in this report in order to give a summary of health, social, political, and cultural outcomes in Te Moana ā Toi. However, more detail can be obtained from the original data sources used here.

Results

The key findings in this report are summarised at the end of each section. However, some of the most notable results include:

Demographics
- Overall, Māori make up 25% of the population in the Bay of Plenty District Health Board (BOPDHB) area;
- The proportion of Māori in each Territorial Authority (TA) increases eastward, ranging from 17% of Western Bay of Plenty District Council, to 58% of Kawerau District Council, and 54% of Ōpōtiki District Council;
- The Māori population has a much younger age structure than non-Māori in BOPDHB, and are more likely to live rurally;
- Over 50% of Māori in BOPDHB occupy the two most deprived NZDep 2006 deciles (9-10) - this proportion is higher than that seen nationally for Māori. In comparison, only 15% of non-Māori occupy NZDep 9-10:
- The Māori population will grow faster than the non-Māori population over the next 13 years, particularly in the over 65 age group.

Health
- Life expectancy for Māori males is eight years less than that of non-Māori males. For Māori women the disparity is 7.6 years;
- Health outcomes are influenced by risk and protective factors, along with broader upstream influences associated with the social determinants of health;
- Māori have higher rates of exposure to many risk factors such as tobacco use, exposure to second-hand smoke, and hazardous alcohol use;
- Māori have similar levels of exercise and vegetable consumption as the non-Māori population;
- Māori are more likely to be overweight or obese, to be admitted to hospital for avoidable causes, and to die at a younger age. Generally Māori have poorer health outcomes in the measures examined in this report;
- Māori have higher rates of unmet need for primary care services (statistically significant for Māori females), have lower levels of enrolment in Primary Health Organisations (PHOs), lower rates of oral health care consultations, and live in areas where there are fewer General Practitioners (GPs) per capita;
Lack of fluoridation in water supplies leads to poorer outcomes in Māori children compared with non-Māori children;

Māori youth value access to health services, particularly where these are available through schools and continuity of care is provided.

**Education**

- Māori children have lower participation in early childhood education at ages three and four years compared with non-Māori children;

- By the time of primary school entry at age five, 93% of Māori children had participated in some form of early childhood education in the previous twelve months compared with 97% of non-Māori;

- Kawerau District had the lowest rate of early childhood education at primary school entry. Only 62% of new entrants to primary school had participated in early childhood education in the past twelve months;

- In BOPDHB only 55% of Māori who left secondary school in 2010 had achieved NCEA 2 or higher. Though this rate is higher than for Māori nationally it is significantly lower than for non-Māori in BOPDHB;

- 46% of Māori adults in BOPDHB have no educational qualifications compared with just 26% of non-Māori;

- Māori are less likely to have a university degree of any type compared with non-Māori in BOPDHB and Māori nationally;

- Māori students interviewed for this project described occasions where school activities had been curtailed because of insufficient resources. Students expressed the desire for greater integration between school, home, and community events. Students especially valued a safe school environment free of oppressive and bullying behaviour.

**Households**

- Home ownership is less common among Māori compared with non-Māori;

- More Māori live in overcrowded homes than non-Māori and live in homes where more than one family share the home;

- Single parent families are more common among Māori than non-Māori in BOPDHB;

- Māori are less likely to use household heating, have access to telecommunications systems, and have access to a motor vehicle;

- Māori youth expressed the desire for better housing conditions with less crowding and warmer environments.

**Work and Income**

- Unemployment was higher among Māori in BOPDHB compared with non-Māori;

- The numbers of youth who are not in employment, education, training (Youth NEET) are higher among Māori compared with non-Māori (25% vs. 11%). The Māori Youth NEET is higher than that seen nationally for Māori;

- Māori have both lower median household incomes ($48,000 vs. $57,000) and lower individual incomes compared with non-Māori in BOPDHB. The median household income for BOPDHB Māori is lower than Māori nationally ($48,000 vs. $55,000);

- Interviews with rangatahi revealed trepidation about employment prospects once secondary school had been completed. Interviewees were eager for employment opportunities which would enable them to remain in their home area, but were cognisant of the limited job opportunities.

**Political Participation**

- 91% of Māori within the Waiairiki electorate were registered on either the Māori or General Electorate Roll in 2008. In comparison, 95-98% of the voting age total population were enrolled to vote across a similar area at that time;

- Nationally, 92% of Māori are enrolled to vote along with 95% of the total population;

- The proportion of registered Māori in the five electorates which overlap with the boundaries of BOPDHB who opted for the Māori roll ranged between 43% and 74% in 2008;

- Voter turnout declined for both the Māori and general electoral rolls between 2008 and 2011;

- In 2011, 60% of those on the Māori roll for Waiairiki voted. In comparison, 74% of those on the general and Māori rolls voted;

- In the regional council elections of 2010, voter turnout for the Māori constituency seats ranged between 27% and 41%. General constituency turnout ranged between 38% and 64%.
Culture

- In the 2006 census, 30% of Māori reported they were able to speak Māori in the BOPDHB area. Levels were lowest in Tauranga City and highest in Whakatāne and Ōpōtiki. Nationally, 23% of Māori report the ability to speak Māori;

- 34% of Māori early childhood education students were enrolled in Kōhanga Reo across the five Territorial Authorities within BOPDHB. Levels were lowest in Tauranga City with only 15% of Māori children enrolled in Kohanga. In comparison, 49% of Māori students in Whakatāne District were enrolled in Kōhanga Reo. Nationally, 23% of Māori children are enrolled in Kōhanga Reo;

- Kura Kaupapa Māori enrolments by Māori students averaged 4.5% across BOPDHB, and ranged from a high of 7% in Whakatāne District to 2% in Western Bay of Plenty District. Nationally, approximately 3.5% of Māori students are enrolled in Kura Kaupapa Māori;

- At the 2006 census, the proportion of those who identified as Māori but did not name their iwi was highest in the Western Bay of Plenty and Tauranga, and lowest in the eastern districts of BOPDHB. Though this is not a validated measure of cultural identity it does correlate with the higher levels of participation in Māori medium schools and Māori language use seen in the east;

- Interviews with rangatahi highlighted a strong interest in weaving te reo and tikanga into school life. Students also expressed the need to feel that schools valued the importance of Māori cultural identity for rangatahi.

Conclusion

These results profile the needs and aspirations of both individuals and whānau in Te Moana ā Toi. Generally, Māori have poorer health and social outcomes than non-Māori. However, the power of a report such as this is in its ability to highlight the aetiology of these differences. These begin before birth and are amplified through childhood by differences in the social determinants of health, higher exposure to risk factors, and differences in access to health and social services across the lifespan. Differences in the social determinants of health and primary care access are greatest in the eastern Bay of Plenty. Though the health data analysed in this report did not facilitate disaggregation by both ethnicity and geography, there were clear differences in health outcomes for Bay of Plenty DHB Māori compared with non-Māori in BOPDHB, and also Māori nationally. These differences were found for oral health outcomes, hospitalisations for diabetes and respiratory conditions, and other outcomes.

Recommendations

Key recommendations arising from this report are listed below:

1. Report Distribution

It is recommended that BOPDHB facilitate distribution of this report to a wide audience. Health agencies are not in a position to address all issues raised within this document, some of which they have only limited ability to influence. Instead, intersectoral collaboration is essential to achieve sustainable health and social gains for Māori throughout Te Moana ā Toi.

2. Improve Health Equity

A range of health inequities between Māori and non-Māori were identified in this report. To help achieve health equity it is recommended that equity attainment become a measurable criterion in the prioritisation, planning, implementation and evaluation of health and social services facilitated by BOPDHB and the Whānau Ora Regional Leadership Group. This can be attained by using the data in this report to quantify the degree of inequitable outcomes and then measuring the degree of equity attained by an intervention. In addition, the qualitative findings of this report can be used to inform assessments of the health and social needs of rangatahi and others in the area. The focus on equity can be achieved systematically by using the various equity planning and evaluation guidelines created by the Ministry of Health.

3. Improve the social determinants of health

This report provides information on a range of health determinants, such as: educational achievement, housing, income, and employment. Māori in the BOPDHB area are, in general, disadvantaged in comparison to non-Māori in relation to these health determinants. Achieving equity in health outcomes will be difficult whilst inequities remain for these health determinants. It is recommended that BOPDHB facilitate planning to prioritise, select and improve social determinants by working intersectorally with the collection of stakeholders mentioned above. Housing is an opportune issue to address as it overlaps with renewed focus on reducing the incidence of rheumatic fever in New Zealand. Improved housing conditions will have an impact on a range of issues including close contact infectious diseases and ASH rates.
4. Improve access to health services

Access to primary health care is lower for Māori than non-Māori within BOPDHB; PHO enrolments are lower for Māori, and Māori report higher rates of unmet GP need. ASH rates are higher for Māori. The proportion of GPs per capita decreases sharply in the eastern Bay of Plenty, despite deprivation increasing. Rangatahi have voiced their wish for better access to health services in schools in this report. Overall these findings indicate the need to improve primary care access in BOPDHB. This can be achieved through collaboration with PHOs and primary care using a range of approaches.

5. Political participation

Political participation provides a means for Māori to take action to improve the wellbeing of the Māori population, and to develop community empowerment. While it is difficult to determine political participation within the confines of the DHB boundaries, Māori political participation in the wider Bay of Plenty region appears to be poor in comparison to the participation of the total population. It is recommended that the Te Moana ā Toi RLG support Whānau Ora initiatives which promote and increase political participation.

6. Further research

This report identifies many of the needs of Māori within the BOPDHB. However, gaps within the report will require further collection of data in the future. Although the most recent data has been utilised, for many indicators this data is five to six years old at the time of writing. To address this issue it is recommended that relevant measures in this report are updated at regular intervals, and that ongoing monitoring is undertaken for selected measures.
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Ministry of Health
Ministry of Education
Ministry of Internal Affairs

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Abbreviations

ASH Ambulatory sensitive hospitalisations
BOP Bay of Plenty
BOPDHB Bay of Plenty District Health Board.
This abbreviation has been used to encompass the area and population falling within the boundaries of the Bay of Plenty District Health Board.
DMFT Decayed missing or filled teeth
GP General Practitioner
HLFS Household labour force survey
MoH Ministry of Health
NCEA National Certificate of Educational Attainment
NMDS National minimum dataset
NZDep New Zealand Deprivation Index (2006, unless stated otherwise)
NZHS New Zealand Health Survey
PHO Primary Health Organisation
RLG Regional Leadership Group
SHS Second-hand smoke
SUDI Sudden unexpected death of an infant
TA Territorial Authority
TCC Tauranga City Council
TKKM Te Kura Kaupapa Māori
TMAT Te Moana ā Toi
WBOPDC Western Bay of Plenty District Council
WIIE Whānau Integration, Innovation and Engagement Fund
Youth NEET Youth who are not engaged in employment, education, or training

Definitions

Rangatahi Young person, aged approximately 12-20 years
Whānau Family; may also be used to encompass extended family
Section 1 Introduction

This report aims to assist with the implementation of Whānau Ora. The report collates a range of information for the population of Te Moana ā Toi. This area is geographically similar to that encompassed by Bay of Plenty District Health Board (BOPDHB). Whānau Ora has been described as:

“...an inclusive approach to providing services and opportunities to all families in need across New Zealand. It empowers whānau as a whole – rather than focusing separately on individual family members and their problems – and requires multiple government agencies to work together with families rather than separately with individual relatives....Whānau Ora is about a transformation of whānau – with whānau who set their own direction. It is driven by a focus on outcomes: that whānau will be self-managing; living healthy lifestyles; participating fully in society; confidently participating in te ao Māori (the Māori world); economically secure and successfully involved in wealth creation; and cohesive, resilient and nurturing.”

Accordingly the information presented in this report has been organised into categories which align with these aspects of Whānau Ora. Information has been assembled into health, education, political participation, and other groups which provide a snapshot of the unique; rangatahi are a group which has not had a strong advocacy voice in the past. This report aims to give substance to that voice by identifying the needs and aspirations of this group.

This report has been created to address several goals. The overarching goal is to assist with Whānau Ora initiatives in Te Moana ā Toi. This can be achieved by integrating the qualitative information gained for the report with the most up to date quantitative information from national and regional datasets. Integrating these two sources of information can then help funding organisations and providers to identify, prioritise, and focus on the most pressing health and social issues in Te Moana ā Toi. Furthermore, having baseline information enables progress in Whānau Ora to be tracked over time. This will help to ensure that funding organisations are supporting and providing effective services which deliver value for money.

In keeping with the principles of Whānau Ora, this report gives a holistic view of a range of health and social measures. The report opens with summary demographics and then provides a range of data related to health service utilisation, educational outcomes, income and employment, housing, culture, and political participation. These categories have been developed using the most up to date health datasets available. Whilst the New Zealand Population Census forms the foundation of much of the information, other sources such as the New Zealand Health Survey (NZHS) and the Household Labour Force Survey have been combined with data extracted from more recent datasets.

Following the quantitative data in each section, a summary of qualitative information is presented. This information was compiled through interviews with young people and a review of Whānau Assessments. The Whānau Assessments were completed by Whānau Ora providers in Te Moana ā Toi. The assessments provide a snapshot of the needs, aspirations, enablers, and barriers to positive health and social outcomes expressed by whānau. The wide range of qualitative information sources gives a comprehensive picture of the aspirations and needs of adults, whānau, and young people in the area.

The combination of qualitative and quantitative information gives a more complete picture of health and social needs and aspirations in the area. Presenting these different sources helps providers and funders to align what can be provided with what is desired. In this way, health and social providers can move away from a top-down approach where services are delivered to a community, to a collaborative approach where services aligned with the expressed needs of communities.

The information in this report can be used in two key ways. First, the report can be used to identify gaps – either between different areas within Te Moana ā Toi and nationally, or between different groups distinguished by ethnicity, location, or age. However the report was originally conceived for use in a second way more aligned with appreciative inquiry. This approach seeks to identify what is being done well, learn about the drivers and supports facilitating these positive outcomes, and amplify these drivers in other areas. In essence, the report seeks to support aspirations rather than identify deficits. For example, early childhood educational participation in Te Moana ā Toi is higher than the rate seen nationally for both Māori and non-Māori. Similarly, NCEA 2 pass rates for Māori in Te Moana ā Toi are higher than those seen nationally. Understanding the sources of these positive outcomes might enable them to be scaled into other areas throughout the area. Finally, identifying, and publicising those areas and groups which are doing especially well helps to dissolve doubts and resistance towards change, and nurture the positive expectation that change is possible.

1 Whānau Ora Fact Sheet: Paenga-whāwhā / April 2013. Te Puni Kokiri. (2013). Wellington
## 2.1 Data sources

The data utilised within this report has been collected from a variety of sources (Table 2.1). Only routinely collected data has been utilised. The most recent data available for each indicator has been presented.

<table>
<thead>
<tr>
<th>Data source</th>
<th>Data obtained</th>
</tr>
</thead>
</table>
| Census of population and dwellings 2006, Statistics New Zealand | - Demographic data  
- Socioeconomic determinants of health  
- Work and income  
- Educational attainment  
- Māori cultural knowledge (iwi and language) |
| DHB projections and assumptions data, Statistics New Zealand | - Population estimates and projections for Bay of Plenty DHB |
| Household Labour Force Survey | - Youth who are “Not in Employment, Education or Training” (NEET) |
| New Zealand Health Survey | - Life style health risk factors and protective factors  
- Self-reported health measures  
- Health service utilisation |
| National Minimum Data Set | - Hospitalisations  
- Most common causes of avoidable hospitalisation |
| PHO Data Universe | - NZ Deprivation distribution by territorial authority |
| Mortality Collection | - Mortality and avoidable mortality  
- Most common causes of avoidable mortality |
| Medical Council of New Zealand | - Number of General Practitioners |
| Ministry of Education | - Early childhood and school enrolments |
| New Zealand Qualifications Authority | - National Certificate of Educational Achievement (NCEA) attainment |
| Department of Building and Housing | - Market rents |
| Community Oral Health Service | - Children’s oral health |
| Ministry of Health  
| New Zealand Parliament website  
Descriptions of key data sources are provided below.

**National Minimum Data Set**

The National Minimum Data Set (NMDS) is a national collection of public and private hospital discharge information, for both inpatients and day patients. Patient attendances at outpatient clinics or emergency departments are not included. The data provides information on the number of episodes of care rather than the number of individual people. Prioritised ethnicity is utilised.

**Statistics New Zealand**

Statistics New Zealand provides a range of demographic information, primarily based on information obtained from the New Zealand census. At the time of writing, the last New Zealand census for which data was available was 2006.

Data obtained from Statistics New Zealand includes usually resident population data, population estimates and population projections. The census ‘usually resident population’ refers to all people who usually live in that area and are present in New Zealand on census night.

It excludes visitors from overseas, or from elsewhere in New Zealand, and New Zealand residents temporarily overseas. Population estimates are derived from the census data but are adjusted to account for census undercount, residents temporarily overseas on census night, and births, deaths and migration since the census. Estimates therefore give the best available measure of the population living in a particular area.

Population projections give an indication of the future size of a population and use different combinations of assumptions about fertility, mortality and migration to achieve this.

Population estimates and projections for District Health Board populations in this document utilised specific assumptions supplied by the Ministry of Health (MoH). These estimates cannot be compared with usually resident population data or with other data which use different assumptions.

**Household Labour Force Survey**

The Household Labour Force Survey (HLFS) is a nationwide, quarterly survey which is the official measure of employment and unemployment in New Zealand. HLFS data is collected from a sample survey, which is designed to be representative of the country as a whole.

**New Zealand Health Survey**

The New Zealand Health Survey was most recently completed over a one year period between 2006 and 2007. The survey provides information on demographic characteristics, selected health risk behaviours, self-reported health status, self-reported prevalence of selected conditions and the utilisation of health services. Because of small sample sizes within the BOPDHB, all of the information obtained from the survey are synthetic estimates. These estimates are modelled estimates which are based on a region’s demographic characteristics. These estimates are only available for adults. The predictions are a product of the estimated rate for the DHB multiplied by the ratio of the ethnicity rate to the overall population prevalence rate. These ethnic group ratios are calculated at the national level.

**Mortality Collection**

The Mortality Collection is a national data set which collects mortality data based on death certificates completed by medical practitioners, post-mortem reports, coroners’ certificates and death registration forms completed by funeral directors. Supplementary data is obtained from a range of other sources including public hospital discharge data and the New Zealand Cancer Registry. Mortality data for the three-year periods 2006-2008 and 2007-2009 have been utilised within this document.
PHO Data Universe

The Primary Health Organisation data universe is a national data collection which holds health and demographic information on patients enrolled with a PHO.

Ministry of Education

The Ministry of Education carries out statistical collections from New Zealand schools at different times during the year. Enrolment data is available from:

Community Oral Health Services

Community oral health services provide data to the MoH for children at five years of age and then again in year eight of school.

2.2 Statistical methods

Rates

Annual rates have been calculated for most indicators within the document. However for a few indicators, where noted, rates have been presented as 3-year averages.

Population estimates, which matched the year or years of the numerator, were used as denominator values to calculate rates. Not stated or unidentifiable responses were excluded from totals used as denominators for calculation of proportions.

Age standardisation

Māori and non-Māori populations have very different age structures. The Māori population is younger while the non-Māori population has a greater proportion of older people (Figure 3.3 and Figure 3.4). Age standardisation allows comparisons between Māori and non-Māori populations by accounting for this age structure difference. Where appropriate and possible age standardisation has been utilised for indicators within this document.

Data in this document have been age standardised using two different methods. This has occurred because some data received from different sources had already been age standardised using these two different methods, and the raw data were not always readily available to allow standardisation using a consistent method.

Direct age standardisation, with rates standardised to the total 2001 census Māori population, was used for the following indicators:

- Avoidable mortality
- Avoidable hospitalisations
- Asthma hospitalisation rate
- Chronic Obstructive Pulmonary Disease hospitalisation rate
- Chronic Obstructive Pulmonary Disease mortality rate
- Cardiovascular disease hospitalisation rate
- Cardiovascular disease mortality rate
- Ischaemic heart disease hospitalisation rate
- Ischaemic heart disease mortality rate
- Diabetes hospitalisation rate
- Diabetes complication hospitalisation rate
- Cancer hospitalisation rate
- Cancer mortality rate
- Self-harm hospitalisation rate
- Suicide mortality rate
Data for these indicators were sourced from the Centre for Public Health Research’s draft Health Needs Assessment for the Bay of Plenty District Health Board. The original data source for each indicator has been presented for each of these indicators. Standardising to the Māori population in this way provides rates that closely approximate crude Māori rates (the actual rate among the Māori population), while also allowing comparison with the non-Māori population.

All other rates in this document have been age standardised using the direct standardisation method, with rates standardised to the World Health Organization’s world standard population.

Age standardised rates calculated with these two different age standards in this document cannot be compared with each other. Additionally the use of different standard populations, standardisation methods or denominator populations means that results obtained elsewhere may differ from those reported in this document.

**Confidence intervals**

Confidence intervals provide an indication of the margin of error associated with calculated rates. When the 95% confidence intervals of two rates do not overlap, the differences in these rates are statistically significant with 95% confidence. If two confidence intervals do overlap the difference may be due to chance and may not be statistically significant. Confidence intervals have been presented where appropriate for some of the indicators in this document.

Estimates for larger populations and more common conditions will usually have narrower confidence intervals. Confidence intervals for some indicators are wide because of the comparative rarity of the condition. Estimates for national confidence intervals are narrower than those for BOPDHB because of the difference in population size.

**Ethnicity**

Ethnicity data can be presented in two different ways, as ‘total response’ or ‘prioritised’ ethnicity. For ‘total response’ ethnicity data a respondent is counted in each of the ethnic groups that they selected. This means that the sum of the ethnic group population will exceed the total population because people can select more than one ethnic group. In the ‘prioritised’ method each respondent is allocated to a single ethnic group using a priority order of ethnicity. Māori ethnicity takes priority over other ethnic groups, and consequently respondents are allocated to being Māori if they have selected this as one of any number of ethnic groups. Respondents are counted as non-Māori if they did not select Māori. This report utilised ethnicity data that has been presented utilising both methods. The method used is presented for each indicator.

**2.3 Data limitations**

Care must be taken in interpreting the data within this report. There may be several possible explanations for variations in the data presented. For example, differences in hospital discharge rates between Māori and non-Māori may indicate differences in the health need, differences in access to primary health care (with consequent differences in the utilisation of hospital care), differences in access to hospital services, random variation or a combination of these reasons.

Quantitative data has been drawn from sources which routinely collect data and which are readily available. No new data has been collected, and consequently there are gaps in the information presented.

A number of data sources undercount Māori, by inaccurately classifying some Māori as non-Māori when ethnicity data is collected. True hospitalisation and primary care consultation rates are therefore likely to be higher than those reported in this document.
2.4 Geographic boundaries

The data used in this report are drawn from a range of different sources and organisations. Each of these organisations uses unique boundaries to define geographical areas. For example, the boundaries of Te Moana ā Toi differ from those of the Bay of Plenty District Health Board, which in turn differ from those used by electoral and education agencies; Te Moana ā Toi does not include the coastal and inland segment near Maketu. This difference makes it challenging to report results for Te Moana ā Toi alone. In most cases in this report the BOPDHB area has been used as a proxy for Te Moana ā Toi. In other cases, where geographic boundaries differ from those of BOPDHB the parent data set is referred to along with the geographic area encompassed. In summary, there is overlap with the geographic areas for the various data sets used by the health, electoral, territorial, education, and census data sources within this report. None of these sources is a perfect match for the boundaries of Te Moana ā Toi but data collected over large areas can be generalised to Te Moana ā Toi.

Fig 2.1 Geographic areas encompassed by Te Moana ā Toi (left) and Bay of Plenty District Health Board (right).

2.5 Qualitative Research

Four schools were approached and invited to take part in qualitative interviews; three schools participated. The three schools that took part in the project represented a total population of 994 enrolled students, with the majority Māori. In order to protect the privacy of these schools and those associated with them, identifying information is not included in this report.

Formal interviews were held with a total of 43 students of high school age and 12 staff members. Informal feedback from others in the school community, including parents and caregivers, and other students, was also received. The interviews were semi-structured to allow for exploration of issues. The interviews were recorded and summaries written for each site. Students were given the option of taking part; Māori students made up the significant majority of respondents. At two sites, all participants were Māori.

The interviews and feedback yielded a rich data set that was examined for key themes. These themes were then compared across groups and an overall summary of the data created. It is this information that forms the basis for the current report. The secondary data provided through Whānau Integration, Innovation and Engagement (WIIE) interviews was derived from a summary of post-analysis data. Written confirmation was received from the regional ethics committee that formal ethical approval was not required for this project.
Section 3 Demography

This section provides population data for Māori within the BOPDHB area, with comparisons to the non-Māori population and national New Zealand populations. This provides background to the health needs of the population, identifies demographic differences between Māori and non-Māori, and can assist with future planning of health services.

3.1 Māori population

BOPDHB includes 4.8% of the total New Zealand population, making it the eighth largest DHB by population within the country. BOPDHB includes almost eight percent of all people who identify with Māori ethnicity within New Zealand, and has the fourth largest Māori population of all DHBs (Table 3.1).

A quarter of the total population of the BOPDHB identify as being Māori (Table 3.1). This is a higher proportion than the national average of 15%, and the sixth highest proportion of all DHBs within New Zealand.

Table 3.1 Māori population living in each DHB within New Zealand, 2011 estimate

<table>
<thead>
<tr>
<th>District Health Board Area</th>
<th>DHB Māori population</th>
<th>DHB Māori as a percentage of total NZ Māori population</th>
<th>Total DHB population</th>
<th>Māori as a percentage of total DHB population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auckland</td>
<td>36,570</td>
<td>5.4%</td>
<td>456,530</td>
<td>8.0%</td>
</tr>
<tr>
<td>Bay of Plenty</td>
<td>52,980</td>
<td>7.9%</td>
<td>211,920</td>
<td>25.0%</td>
</tr>
<tr>
<td>Canterbury</td>
<td>40,710</td>
<td>6.0%</td>
<td>502,610</td>
<td>8.1%</td>
</tr>
<tr>
<td>Capital and Coast</td>
<td>32,270</td>
<td>4.8%</td>
<td>294,610</td>
<td>11.0%</td>
</tr>
<tr>
<td>Counties Manukau</td>
<td>83,770</td>
<td>12.4%</td>
<td>294,610</td>
<td>16.8%</td>
</tr>
<tr>
<td>Hawkes Bay</td>
<td>39,180</td>
<td>5.8%</td>
<td>155,780</td>
<td>25.2%</td>
</tr>
<tr>
<td>Hutt</td>
<td>25,090</td>
<td>3.7%</td>
<td>144,400</td>
<td>17.4%</td>
</tr>
<tr>
<td>Lakes</td>
<td>35,630</td>
<td>5.3%</td>
<td>102,950</td>
<td>34.6%</td>
</tr>
<tr>
<td>Midcentral</td>
<td>31,800</td>
<td>4.7%</td>
<td>168,790</td>
<td>18.8%</td>
</tr>
<tr>
<td>Nelson Marlborough</td>
<td>13,100</td>
<td>1.9%</td>
<td>139,925</td>
<td>9.4%</td>
</tr>
<tr>
<td>Northland</td>
<td>50,930</td>
<td>7.6%</td>
<td>158,250</td>
<td>32.2%</td>
</tr>
<tr>
<td>South Canterbury</td>
<td>3,910</td>
<td>0.6%</td>
<td>56,345</td>
<td>6.9%</td>
</tr>
<tr>
<td>Southern</td>
<td>27,240</td>
<td>40%</td>
<td>306,415</td>
<td>8.9%</td>
</tr>
<tr>
<td>Tairawhiti</td>
<td>22,420</td>
<td>3.3%</td>
<td>46,590</td>
<td>48.1%</td>
</tr>
<tr>
<td>Taranaki</td>
<td>18,730</td>
<td>2.8%</td>
<td>109,845</td>
<td>17.1%</td>
</tr>
<tr>
<td>Waikato</td>
<td>79,930</td>
<td>11.9%</td>
<td>367,580</td>
<td>21.7%</td>
</tr>
<tr>
<td>Wairarapa</td>
<td>6,270</td>
<td>0.9%</td>
<td>40,575</td>
<td>15.5%</td>
</tr>
<tr>
<td>Waitemata</td>
<td>54,190</td>
<td>8.0%</td>
<td>545,970</td>
<td>9.9%</td>
</tr>
<tr>
<td>West Coast</td>
<td>3,330</td>
<td>0.5%</td>
<td>32,895</td>
<td>10.1%</td>
</tr>
<tr>
<td>Whanganui</td>
<td>16,170</td>
<td>2.4%</td>
<td>63,145</td>
<td>25.6%</td>
</tr>
<tr>
<td>NZ Total</td>
<td>674,220</td>
<td>100%</td>
<td>4,404,735</td>
<td>15.3%</td>
</tr>
</tbody>
</table>

Source: DHB projections and assumptions data produced by Statistics New Zealand for the Ministry of Health, according to assumptions specified by the Ministry of Health. Base year as at 30 June 2006
People of European ethnicity make up the greatest proportion of the population within the BOPDHB (Fig 3.1). Asians, Pacific peoples, and people from the Middle East, Latin America or Africa (MELAA), make up less than five percent of the population.

Note that Fig 3.1 has utilised different data from that in Table 3.1 and so has produced a slightly different proportion of Māori within the population. Figure 3.1 was created from the 2006 census usually resident population data. In contrast Table 3.1 data is an estimate of the 2011 population based on a range of assumptions put forward by the Ministry of Health. The 2011 estimate is likely to provide a closer representation of the current population distribution.

### 3.2 Population by Territorial Authority

There are five Territorial Authorities (TAs) serviced by the BOPDHB. The distribution of Māori varies between TAs (Table 3.2 and Fig 3.2). Tauranga City has the largest resident Māori population of over 16,000 (Table 3.20). However Māori make up only 16% of the population within Tauranga City, lower than the proportion throughout the entire DHB area (Fig 3.20). In contrast the proportion of the population that identify as Māori is greater than 50% in both Kawerau and Ōpōtiki Districts.

#### Fig 3.1 Percentage of people by ethnicity\(^1\) for BoP DHB area

![Percentage of people by ethnicity](chart1.png)

**Data Source:** Statistics NZ census 2006

\(^1\) Grouped total response for census usually resident population. Percentages add up to greater than 100% as people are able to choose more than one ethnic group.

\(^2\) Includes Don’t Know, Refused to Answer, Response Unidentifiable, Response outside scope and not stated

BoP DHB = Bay of Plenty District Health Board

**Fig 3.2 Proportion of the population that have Māori ethnicity, by territorial authority 2006**

![Proportion of the population that have Māori ethnicity](chart2.png)

Source: 2006 Census, usually resident population
### Table 3.2 Māori population by Territorial Authority, Bay of Plenty DHB 2006

<table>
<thead>
<tr>
<th>Territorial authority</th>
<th>Non-Māori</th>
<th>Māori</th>
<th>Not elsewhere included(2)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Bay of Plenty District</td>
<td>36,768</td>
<td>6,924</td>
<td>2,196</td>
<td>42,075</td>
</tr>
<tr>
<td>Tauranga City</td>
<td>94,341</td>
<td>16,569</td>
<td>3,144</td>
<td>103,635</td>
</tr>
<tr>
<td>Whakatāne District</td>
<td>22,764</td>
<td>13,203</td>
<td>1,989</td>
<td>33,300</td>
</tr>
<tr>
<td>Kawerau District</td>
<td>3879</td>
<td>4,047</td>
<td>294</td>
<td>6,924</td>
</tr>
<tr>
<td>Ōpōtiki District</td>
<td>4,920</td>
<td>4,884</td>
<td>738</td>
<td>8,976</td>
</tr>
<tr>
<td>BOPDHB Area</td>
<td>162,690</td>
<td>45,642</td>
<td>8,361</td>
<td>194,931</td>
</tr>
</tbody>
</table>

Source: 2006 Census, usually resident population
(1) Grouped total response
(2) Includes ‘don’t know’, refused to answer, response unidentifiable, response outside scope, and not stated.

### 3.3 Gender composition

Just under half of the BOPDHB Māori population are male (Table 3.3). This is similar to the gender proportions in the DHB non-Māori population, and in the Māori population throughout New Zealand.

#### Table 3.3 Population distribution by gender and ethnicity' 2011

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Male</th>
<th>Percentage male</th>
<th>Female</th>
<th>Percentage female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td>25,930</td>
<td>48.9%</td>
<td>27,050</td>
<td>51.1%</td>
</tr>
<tr>
<td>Non-Māori</td>
<td>77,380</td>
<td>48.7%</td>
<td>81,560</td>
<td>51.3%</td>
</tr>
<tr>
<td>Total</td>
<td>103,310</td>
<td>48.7%</td>
<td>108,610</td>
<td>51.3%</td>
</tr>
</tbody>
</table>

(1) Prioritised ethnicity

### 3.4 Age structure

The Māori population within the BOPDHB is very young in comparison to non-Māori (Fig 3.3 and Fig 3.5). Thirty four percent of the Māori population are under 15 years of age, compared with 17% of non-Māori. Almost 60% of the Māori population are less than 30 years of age, compared to just 32% of non-Māori within this age group. Only five percent of Māori are aged 65 years or over, while 21% of non-Māori are within this older age group.

The age structure of Māori residents within the BOPDHB is similar to that of the national Māori population (Fig 3.3 and Fig 3.5).
Fig 3.3  BoP DHB area Māori\textsuperscript{1} Population Age Structure, 2011

Fig 3.4  BoP DHB area Non-Māori\textsuperscript{1} Population Age Structure, 2011

Fig 3.5 and Fig 3.6 New Zealand Māori and non-Māori\textsuperscript{1} population age structures, 2011

Source: DHB projections and assumptions data produced by Statistics New Zealand for the Ministry of Health according to assumptions specified by the Ministry.

\textsuperscript{1} Prioritised ethnicity

(1) Prioritised ethnicity. Non-Māori ethnicity is a combination of European, Asian, Pacific and other.
3.5 Urban rural mix

Approximately 75% of Māori in the BOPDHB live within urban areas. The proportion of Māori living within main urban areas in the BOPDHB is lower than that of non-Māori or the national Māori population (Fig 3.7). In contrast a higher proportion of Māori in the BOPDHB area live in other smaller urban communities than non-Māori.

Approximately 25% of Māori within the BOPDHB live within rural areas, compared to 15% of the national Māori population. Non-Māori are less likely than Māori to live within rural areas.

3.6 Socioeconomic deprivation

Socio-economic status is a significant determinant of health, with people in the most deprived socio-economic groups having the poorest health status.5

The New Zealand Deprivation Index (NZDep) provides a geographical area measurement of socio-economic status. The index utilises nine variables from the 2006 census to provide a numerical rating for socio-economic status for each mesh-block area (Table 3.4). A score between one and ten is created. A score of one is allocated to the 10% of areas across the country which are least deprived and a score of ten is allocated to the most socio-economically deprived 10% of areas.

<table>
<thead>
<tr>
<th>Table 3.4 New Zealand Deprivation Index 2006 Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-economic variable</td>
</tr>
<tr>
<td>Income</td>
</tr>
<tr>
<td>Income</td>
</tr>
<tr>
<td>Owned home</td>
</tr>
<tr>
<td>Support</td>
</tr>
<tr>
<td>Employment</td>
</tr>
<tr>
<td>Qualifications</td>
</tr>
<tr>
<td>Living space</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Transport</td>
</tr>
</tbody>
</table>

Source: Statistics New Zealand, census 2006 usually resident population data
*Prioritised ethnicity
**Other rural area includes satellite urban and independent urban communities

Fig 3.7 Urban rural distribution by ethnic group* within the BoP DHB area and New Zealand, 2006

Source: Statistics New Zealand, census 2006 usually resident population data
*Prioritised ethnicity
**Other rural area includes satellite urban and independent urban communities

Section 3 Demography 19
In the BOPDHB area a greater proportion of Māori than non-Māori live within socio-economically deprived areas (Fig 3.8). Over 50% of Māori live in areas with an NZDep score of nine or 10 compared to just 15% of non-Māori. There are a greater proportion of non-Māori than Māori in the least socio-economically deprived areas.

Māori are over-represented in the two most deprived deciles within every Territorial Authorities (TA) served by the BOPDHB; Whakatāne District, Kawerau District and Ōpōtiki District (Fig 3.9). More than 75% of Māori that were enrolled with a PHO within these three districts live in NZDep group nine and 10 areas. One hundred percent of both enrolled Māori and enrolled non-Māori in the Kawerau District live in these two most deprived decile areas.
3.7 Population growth

Between 1996 and 2006 there was an estimated 20% overall population growth within BOPDHB (Table 3.5). In comparison the Māori population is estimated to have increased by just 10% during this time period. The Māori population declined in three of the TAs served by the DHB, but grew in Western Bay of Plenty District and Tauranga City between 1996 and 2006.

Table 3.5 Population growth 1996 to 2006 for Māori and Total populations, by Territorial Authority

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Bay of Plenty District</td>
<td>6,700</td>
<td>7,100</td>
<td>7,600</td>
<td>13.40%</td>
<td></td>
</tr>
<tr>
<td>Tauranga City</td>
<td>13,100</td>
<td>15,500</td>
<td>18,000</td>
<td>37.40%</td>
<td></td>
</tr>
<tr>
<td>Whakatāne District</td>
<td>14,600</td>
<td>14,700</td>
<td>14,400</td>
<td>-1.40%</td>
<td></td>
</tr>
<tr>
<td>Kawerau District</td>
<td>4,900</td>
<td>4,400</td>
<td>4,300</td>
<td>-12.20%</td>
<td></td>
</tr>
<tr>
<td>Ōpōtiki District</td>
<td>5,500</td>
<td>5,500</td>
<td>5,300</td>
<td>-3.60%</td>
<td></td>
</tr>
<tr>
<td>Total BOPDHB</td>
<td>44,800</td>
<td>47,200</td>
<td>49,600</td>
<td>10.70%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Bay of Plenty District</td>
<td>35,800</td>
<td>39,300</td>
<td>43,000</td>
<td>20.10%</td>
<td></td>
</tr>
<tr>
<td>Tauranga City</td>
<td>79,600</td>
<td>93,300</td>
<td>106,900</td>
<td>34.30%</td>
<td></td>
</tr>
<tr>
<td>Whakatāne District</td>
<td>34,200</td>
<td>34,100</td>
<td>34,500</td>
<td>0.90%</td>
<td></td>
</tr>
<tr>
<td>Kawerau District</td>
<td>8,100</td>
<td>7,300</td>
<td>7,100</td>
<td>-12.30%</td>
<td></td>
</tr>
<tr>
<td>Ōpōtiki District</td>
<td>9,600</td>
<td>9,500</td>
<td>9,200</td>
<td>-4.20%</td>
<td></td>
</tr>
<tr>
<td>Total BOPDHB</td>
<td>167,300</td>
<td>183,500</td>
<td>200,700</td>
<td>20.00%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Statistics NZ, Population estimates.
*Grouped total response
3.8 Population projections

The Māori population within BOPDHB is projected to grow faster than the non-Māori population in the future (Table 3.6). From 2006 until 2026 the Māori population is projected to increase by 26%. The greatest percentage increase for Māori is projected to occur in the 65 years and over age group, increasing by 124.5%. This age group will make up nine percent of the Māori population in 2026 compared to five percent in 2006. The under-15 years age group is projected to increase by 16% for Māori, but to have a small decline for non-Māori.

Table 3.6 Population projections for BOPDHB by age group and ethnic group*

<table>
<thead>
<tr>
<th>Age group</th>
<th>2006</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>Percentage increase 2006 to 2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>17,340</td>
<td>18,210</td>
<td>19,200</td>
<td>20,190</td>
<td>20,210</td>
<td>16.60%</td>
</tr>
<tr>
<td>15-64</td>
<td>29,650</td>
<td>31,830</td>
<td>33,560</td>
<td>34,890</td>
<td>36,830</td>
<td>24.20%</td>
</tr>
<tr>
<td>65+</td>
<td>2,570</td>
<td>2,940</td>
<td>3,640</td>
<td>4,580</td>
<td>5,770</td>
<td>124.50%</td>
</tr>
<tr>
<td>Total</td>
<td>49,560</td>
<td>52,980</td>
<td>56,400</td>
<td>62,810</td>
<td>62,810</td>
<td>26.70%</td>
</tr>
<tr>
<td>Non-Māori</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>27,030</td>
<td>26,430</td>
<td>26,290</td>
<td>26,770</td>
<td>27,000</td>
<td>-0.1%</td>
</tr>
<tr>
<td>15-64</td>
<td>95,000</td>
<td>98,850</td>
<td>101,940</td>
<td>103,970</td>
<td>105,320</td>
<td>10.9%</td>
</tr>
<tr>
<td>65+</td>
<td>29,230</td>
<td>33,660</td>
<td>39,360</td>
<td>45,020</td>
<td>51,230</td>
<td>75.3%</td>
</tr>
<tr>
<td>Total</td>
<td>151,260</td>
<td>158,940</td>
<td>167,590</td>
<td>175,760</td>
<td>183,550</td>
<td>21.3%</td>
</tr>
</tbody>
</table>


*Prioritised ethnicity. Non-Māori ethnicity is a combination of European, Asian, Pacific and Other
Table 3.7 shows population projections for the five TAs in the BOPDHB area from 2006 until 2021. The Māori population is projected to increase in the Western Bay of Plenty District, Tauranga City and Whakatāne District. The Māori population is projected to have a slight decline in the Kawerau and Ōpōtiki Districts. The population increase is projected to be greatest in the Western Bay of Plenty and Tauranga City TAs, and will be greater for Māori than for the total population.

Table 3.8 Proportion of Māori ethnic group with Māori descent, 2006

Table 3.7 Population projections by Territorial Authority and ethnic group*

<table>
<thead>
<tr>
<th>Māori</th>
<th>Territorial authority</th>
<th>2006</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>Percentage Increase 2006 to 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Bay of Plenty District</td>
<td>7,600</td>
<td>8,300</td>
<td>8,900</td>
<td>9,500</td>
<td>25.0%</td>
<td></td>
</tr>
<tr>
<td>Tauranga City</td>
<td>18,000</td>
<td>20,200</td>
<td>22,700</td>
<td>25,100</td>
<td>39.4%</td>
<td></td>
</tr>
<tr>
<td>Whakatāne District</td>
<td>14,400</td>
<td>14,800</td>
<td>15,200</td>
<td>15,500</td>
<td>7.6%</td>
<td></td>
</tr>
<tr>
<td>Kawerau District</td>
<td>4,300</td>
<td>4,300</td>
<td>4,200</td>
<td>4,000</td>
<td>-6.9%</td>
<td></td>
</tr>
<tr>
<td>Ōpōtiki District</td>
<td>5,300</td>
<td>5,300</td>
<td>5,200</td>
<td>5,100</td>
<td>-3.8%</td>
<td></td>
</tr>
<tr>
<td>Total Population</td>
<td>73,000</td>
<td>46,100</td>
<td>48,900</td>
<td>51,500</td>
<td>19.8%</td>
<td></td>
</tr>
<tr>
<td>Tauranga City</td>
<td>106,900</td>
<td>117,100</td>
<td>126,900</td>
<td>136,500</td>
<td>27.7%</td>
<td></td>
</tr>
<tr>
<td>Whakatāne District</td>
<td>34,500</td>
<td>34,700</td>
<td>34,600</td>
<td>34,300</td>
<td>-0.6%</td>
<td></td>
</tr>
<tr>
<td>Kawerau District</td>
<td>7,100</td>
<td>6,900</td>
<td>6,600</td>
<td>6,300</td>
<td>-11.3%</td>
<td></td>
</tr>
<tr>
<td>Ōpōtiki District</td>
<td>9,200</td>
<td>9,100</td>
<td>8,900</td>
<td>8,700</td>
<td>-5.4%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Statistics NZ. Population projections
*Grouped total response

3.9 Māori descent

The New Zealand Census collects information on both Māori ethnicity and Māori descent. Māori descent refers to those people who have Māori ancestry, while ethnicity relates to cultural affiliations and is self-identified. Greater than 92% of those people who identify as having Māori ethnicity report having Māori descent, both within the Bay of Plenty DHB and throughout New Zealand (Table 3.8). Less than one percent of people who identify as having Māori ethnicity reported having no Māori descent. However almost seven percent of people with Māori ethnicity either did not know whether they had Māori descent, did not state whether or not they had Māori descent, or their response was unclear. It is possible that some of this group do not have Māori descent.

Table 3.8 Proportion of Māori ethnic group with Māori descent, 2006

<table>
<thead>
<tr>
<th>Area</th>
<th>Māori Descent</th>
<th>No Māori Descent</th>
<th>Don’t Know</th>
<th>Not Elsewhere Included*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOPDHB</td>
<td>92.4%</td>
<td>0.7%</td>
<td>1.2%</td>
<td>5.6%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>92.7%</td>
<td>0.5%</td>
<td>1.0%</td>
<td>5.8%</td>
</tr>
</tbody>
</table>

Source: Statistics NZ
*Includes unidentifiable responses and not stated
3.10 Demography summary

A quarter of the BOPDHB population identify as having Māori ethnicity, almost all of whom have Māori descent. The BOPDHB Māori population is young compared to the non-Māori population, and is over-represented in socio-economically deprived areas. Māori are less likely to live in main urban areas than non-Māori and are more likely to live in smaller urban areas or rural areas than non-Māori. The Māori population is projected to grow faster than the non-Māori population from 2006 to 2026, with the greatest percentage growth to occur in the 65 years and over age group.
Section 4 Health

Good health is important for the overall wellbeing of the population. Knowledge of the health status of the Māori population is required to plan for and provide appropriate, accessible health services and programmes. A range of indicators have been presented in Section 4.4 to provide information about the health status of the BOPDHB Māori population. Indicators of health service utilisation in Section 4.5 provide information about access for Māori to current health services within the DHB area.

Health status is impacted by a number of health risk factors and health protective factors presented in Sections 4.2 and 4.3. Regular physical activity and good nutrition are beneficial to health, while tobacco smoking, obesity and hazardous alcohol use are risk factors for poor health. These individual risk and protective factors are themselves impacted by a range of other factors (health determinants) such as socioeconomic position. Many of these broader health determinants are presented in later sections of this report. Efforts to maximise protective factors and reduce risk factors for Māori in BOPDHB will require action on the broader health determinants as well as the individual factors presented in Sections 4.2 and 4.3 below.

4.1 Health protective factors

Physical activity

Taking part in at least 30 minutes of moderate intensity physical activity at least five days each week, is beneficial to health.\(^6\) Adults in the BOPDHB area take part in regular physical activity at approximately the same rate as adults throughout New Zealand (Fig 4.1). Sixty two percent of Māori males and 51% of Māori females in the BOPDHB report having regular physical activity. This is higher than the rates reported by non-Māori males and females in the DHB. However the 95% confidence intervals overlap, and consequently, this difference may not be statistically significant.

Nationally Māori males have a higher rate of regular physical activity than Māori females. This difference is also observed in the BOPDHB, however may not be significant as the confidence intervals overlap.

![Fig 4.1 Age standardised rate of regular physical activity* in Bay of Plenty and New Zealand adults aged 15 years and over, 2006/2007](image)

Source: NZ Health Survey 2006/07
Total response ethnicity
* at least 30 minutes of moderate physical activity on at least five days of the week
**Nutrition**

Approximately 55% of Māori males and 66% of Māori females consume the recommended amount of at least three servings of vegetables each day (Fig 4.2). This is a similar rate of consumption to that of non-Māori in the DHB.

Māori females in the BOPDHB area have greater fruit consumption than Māori males. Approximately 46% of Māori males and 62% of Māori females consume at least two servings of fruit each day (Fig 4.3).

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**Fig 4.2  Age standardised rate of recommended vegetable consumption* in Bay of Plenty and New Zealand adults aged 15 years and over, 2006/2007**

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Male</th>
<th>Female</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>BoP DHB</td>
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<tr>
<td>New Zealand</td>
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<td>Māori</td>
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<tr>
<td>Non-Māori</td>
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</tbody>
</table>

Source: NZ Health Survey 2006/07
Total response ethnicity
* Three or more servings of vegetables a day

**Fig 4.3  Age standardised rate of recommended fruit consumption* in Bay of Plenty and New Zealand adults aged 15 years and over, 2006/2007**

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Male</th>
<th>Female</th>
<th>Female</th>
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<tbody>
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<td>BoP DHB</td>
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<tr>
<td>New Zealand</td>
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<tr>
<td>Māori</td>
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<tr>
<td>Non-Māori</td>
<td></td>
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</tr>
</tbody>
</table>

Source: NZ Health Survey 2006/07
Total response ethnicity
* Two or more servings of fruit each day
4.2 Health risk factors

Tobacco smoking

Tobacco smoking is a significant risk factor for respiratory and cardiovascular diseases and many types of cancer. Environmental smoke is also a risk factor for Sudden and Unexpected Death of an Infant (SUDI) and respiratory problems in children.

Māori have a higher prevalence rate of daily tobacco smoking than non-Māori. Approximately 46% of Māori males and 53% of Māori females within the BOPDHB smoke tobacco daily, compared to just 22% and 17% of non-Māori males and females respectively (Fig 4.4). An additional 21% of Māori males and 19% of Māori females in BOPDHB are non-smokers but are exposed to second-hand smoke (SHS) within their homes (Fig 4.5). Approximately 70% of Māori adults in the BOPDHB are therefore exposed to the health risks of tobacco smoke.

Fig 4.4 Age standardised prevalence rate of daily smoking in Bay of Plenty and New Zealand adults aged 15 years and over, 2006/07

Source: NZ Health Survey 2006/07
Total response ethnicity

Fig 4.5 Age standardised prevalence rate of adults aged 15 years and over who are exposed to smoking in the home, 2006/07

Source: NZ Health Survey 2006/07
Total response ethnicity
Hazardous alcohol use

Hazardous alcohol use has been defined as an established pattern of drinking that carries a high risk of future damage to physical or mental health but which may not yet have resulted in significant adverse effects. Alcohol contributes to death and injury due to traffic accidents, drowning, suicide, assaults and domestic violence. In the New Zealand Health Survey hazardous drinking was determined by a score of eight or more on the Alcohol Use Disorders Identification Test. This test consists of ten questions about adult alcohol use covering volume and frequency of alcohol consumed, alcohol related problems and abnormal drinking behaviour. The test was given to all adults who had an alcoholic drink in the past 12 months.

The 2006/2007 New Zealand Health Survey found that Māori have approximately twice the prevalence of hazardous alcohol use of non-Māori within the Bay of Plenty (Fig 4.6). Males have a higher rate of hazardous drinking than females.

Overweight and obesity

Obesity is a major risk factor for cardiovascular disease, hypertension, high cholesterol, diabetes type 2, and various cancers.\(^8\) Obesity and being overweight is determined by the body mass index (BMI), which is calculated by dividing a person’s weight in kilograms by their height in metres squared. The World Health Organisation defines an adult BMI of between 25 and 29.99 as overweight and a BMI of greater than or equal to 30 as obese.\(^9\)

Approximately 70% of Māori in the BOPDHB were found to be overweight or obese in the 2006/2007 New Zealand Health Survey, a rate similar to that for Māori nationally (Fig 4.7). Māori females have a statistically significant higher rate of being overweight or obese than non-Māori females. Māori of both genders have significantly higher rates of obesity than non-Māori in the BOPDHB, over 35% compared to approximately 20% (Fig 4.8).
Fig 4.7  Age standardised prevalence rate of people aged 15 years and over who are overweight or obese*, 2006/2007

Source: NZ Health Survey 2006/07
Total response ethnicity
*BMI greater than or equal to 25

Fig 4.8  Age standardised prevalence rate of obesity* in people aged 15 years and over, 2006/2007

Source: NZ Health Survey 2006/07
Total response ethnicity
*BMI greater than or equal to 30
4.3 Health outcomes

Mortality

Life expectancy is an indicator commonly utilised to provide a summary measure of the health of a population and to identify health disparities between different population groups. Nationally Māori are known to have a lower life expectancy at birth than non-Māori (Table 4.1). However the comparatively small size of the Māori population within the BOPDHB, and limited annual number of deaths is thought to make calculation of robust life-expectancy measures difficult. It is clear from mortality data though that Māori in the BOPDHB are more likely to die at a younger age than non-Māori. For the three year period 2007-2009, 50% of Māori deaths occurred before the age of 65 years, compared to just 15% for non-Māori (Fig 4.9). Approximately 28% of Māori deaths occurred during the middle-aged years of 45-64 years, compared to 10% for non-Māori.

Table 4.1 Life expectancy at birth (years) in New Zealand by gender and ethnic group*, 2007-2010

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td>75.96</td>
<td>71.9</td>
</tr>
<tr>
<td>Non-Māori</td>
<td>83.62</td>
<td>79.8</td>
</tr>
</tbody>
</table>

Source: Mortality Data Set, Ministry of Health
* Prioritised ethnicity
Avoidable mortality

Avoidable mortality refers to deaths which occur to those under 75 years of age that could potentially have been avoided through population based interventions or through preventative and curative interventions for individuals. It provides an overall indicator of health service performance.

Age standardised Māori avoidable mortality rates are over two and a half times higher than non-Māori rates within the BOPDHB (Fig 4.10).

The leading causes of avoidable mortality are the same for Māori within the BOPDHB as for Māori nationally (Table 4.2). Ischaemic heart disease is the leading cause of avoidable mortality for Māori, followed by lung cancer and diabetes. Diabetes features in the top five leading causes of mortality for Māori, but does not for non-Māori.

Table 4.2 Leading causes of avoidable mortality (in ranked order) by ethnicity, 2006-2008

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Bay of Plenty DHB</th>
<th>New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td>Ischaemic heart disease</td>
<td>Ischaemic heart disease</td>
</tr>
<tr>
<td></td>
<td>Lung cancer</td>
<td>Lung cancer</td>
</tr>
<tr>
<td></td>
<td>Diabetes</td>
<td>Diabetes</td>
</tr>
<tr>
<td></td>
<td>Motor vehicle accidents</td>
<td>Motor vehicle accidents</td>
</tr>
<tr>
<td></td>
<td>Suicide and self-inflicted injuries</td>
<td>Suicide and self-inflicted injuries</td>
</tr>
<tr>
<td>Non-Māori</td>
<td>Ischaemic heart disease</td>
<td>Ischaemic heart disease</td>
</tr>
<tr>
<td></td>
<td>Motor vehicle accidents</td>
<td>Suicide and self-inflicted injuries</td>
</tr>
<tr>
<td></td>
<td>Suicide and self-inflicted injuries</td>
<td>Lung cancer</td>
</tr>
<tr>
<td></td>
<td>Lung cancer</td>
<td>Motor vehicle accidents</td>
</tr>
<tr>
<td></td>
<td>Colorectal cancer</td>
<td>Colorectal cancer</td>
</tr>
</tbody>
</table>

Source: Mortality Collection, Ministry of Health
Avoidable hospitalisations

Avoidable hospitalisations are hospitalisations of people aged less than 75 years of age that fall into one of the following categories:
- Preventable hospitalisations, which result from diseases preventable through population based health promotion strategies
- Ambulatory sensitive hospitalisations, which result from diseases sensitive to prophylactic or therapeutic interventions that are deliverable within primary care
- Injury preventable hospitalisation, which are avoidable through injury prevention.

Māori have a significantly higher rate of avoidable hospitalisations than non-Māori, both nationally and within the BOPDHB (Fig 4.11). The rate of avoidable hospitalisation for Māori in the BOPDHB is higher than that for Māori nationally. However this finding does not appear to be statistically significant.

Respiratory infections are the leading cause of avoidable hospitalisations for Māori within the BOPDHB, followed by dental conditions and asthma (Table 4.3).

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Bay of Plenty DHB</th>
<th>New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td>Respiratory infections, Dental conditions, Asthma, Gastroenteritis, Ear, nose and throat (ENT) infections</td>
<td>Respiratory infections, Dental conditions, Asthma, ENT infections, Angina</td>
</tr>
<tr>
<td>Non-Māori</td>
<td>Respiratory infections, Gastroenteritis, Dental conditions, ENT infections, Angina</td>
<td>Respiratory infections, Gastroenteritis, ENT infections, Dental conditions, Angina</td>
</tr>
</tbody>
</table>

Source: NMDS, Ministry of Health
Asthma

Asthma is a respiratory condition in which there is reversible narrowing of the airways causing wheezing, coughing and shortness of breath. It is usually short lived and mild, but can be severe and life threatening. Asthma is a leading cause of avoidable hospitalisation amongst Māori. The New Zealand Health Survey found that Māori adults have a higher prevalence of medication use for asthma than non-Māori in the BOPDHB (Fig 4.12).

Māori adults have a higher asthma hospitalisation rate in the BOPDHB than Māori nationally (Fig 4.13). The national asthma hospitalisation rate for Māori aged 15 years and over is more than twice that of non-Māori. Similarly the adult asthma hospitalisation rate in the BOPDHB is higher for Māori than for non-Māori; however this difference is not statistically significant. Māori under 15 years of age have a significantly greater asthma hospitalisation rate than non-Māori within this age group, both within the BOPDHB and nationally (Fig 4.14). The difference in the hospitalisation rate between Māori and non-Māori suggests that ethnic differences in the control and management of asthma exist in the community.
Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease (COPD) is an irreversible permanent restriction of airflow into and out of the lungs. Emphysema and chronic bronchitis are the two most common forms of COPD. Tobacco smoking is a significant risk factor for the condition.

Nationally Māori in the 45 years and over age group have a significantly higher hospitalisation rate for COPD than non-Māori in the same age group (Fig 4.15). This difference is even more marked within the BOPDHB, with the Māori rate being over four times that of non-Māori. Māori females have a higher hospitalisation rate for COPD than males.

The COPD mortality rate in the 65 years and over age group is also significantly higher for Māori than for non-Māori, both nationally and within the BOPDHB (Fig 4.16). The age standardised mortality rate for Māori is over twice that of Non-Māori.
Cardiovascular disease

Cardiovascular disease is a term which includes all diseases of the heart and blood vessels, and includes stroke (cerebrovascular disease) and ischaemic heart disease. Cardiovascular disease is the leading cause of death in New Zealand.²

In the BOPDHB there are ethnic differences in cardiovascular disease hospitalisation and mortality rates, with the Māori population having higher rates than non-Māori (Fig 4.17 and 4.18). Nationally this disparity was greater for mortality than for hospitalisations. This also appears to be the case within the BOPDHB, although overlapping confidence intervals result in uncertain significance of the mortality findings within the area.

Hospital discharge rates for ischaemic heart disease are significantly higher for the Māori female population than the non-Māori female population in the BOPDHB (Fig 4.19). This ethnic difference was not clear for the male population or total population within the DHB because of overlapping confidence intervals.

Ischaemic heart disease is the leading cause of avoidable mortality in the BOPDHB, for both Māori and non-Māori. The ischaemic heart disease mortality rate for the Māori population is significantly higher than that of non-Māori in the BOPDHB (Fig 4.20). Similar rates are observed nationally.
Fig 4.18 Age standardised cardiovascular disease mortality rate, 2006-2008

Source: Mortality Collection, Ministry of Health

Fig 4.19 Age standardised ischaemic heart disease hospitalisation rate for people aged 25 years and over, 2007-2009

Source: National Minimum Data Set, Ministry of Health

Fig 4.20 Age standardised ischaemic heart disease mortality rate for people aged 25 years and over, 2006-2008

Source: Mortality Collection, Ministry of Health
Diabetes

Diabetes is an important cause of morbidity and mortality in New Zealand. It can cause a number of medical complications including cardiovascular disease, blindness, kidney disease and vascular disease.7

The New Zealand Health Survey asked adults if they had ever been diagnosed with diabetes to determine prevalence. Māori in the BOPDHB were found to have a slightly higher prevalence than non-Māori, although overlapping confidence intervals mean that this finding may not be statistically significant (Fig 4.21). Undiagnosed diabetes in the community will impact the accuracy of these estimates. Diabetes hospitalisation rates for Māori are however significantly higher than those for non-Māori within the DHB. The diabetes hospitalisation rate for Māori is over three times higher than that of non-Māori (Fig 4.22). An even greater ethnic disparity is seen in the hospitalisation rate for diabetes renal complications, which is over ten times greater for Māori than non-Māori (Fig 4.23).

Fig 4.21 Age standardised self-reported prevalence of diabetes* in adults 15 years and over, 2006/07

Fig 4.22 Age standardised diabetes adult* hospitalisation rate, Bay of Plenty DHB and New Zealand, 2007-2009

Source: NZ Health Survey 2006/07
Total response ethnicity
* Ever diagnosed with diabetes

Source: National Minimum Data Set, Ministry of Health
*15 years of age and over
Cancer

Hospitalisation rates and mortality rates for all cancer types combined are higher for Māori than non-Māori within New Zealand (Fig 4.24 and Fig 4.25). This disparity is also observed within BOPDHB, although wide confidence intervals mean that the difference is not statistically significant.
The Māori hospitalisation rate for self-harm appears to be lower in the BOPDHB area than nationally, and lower than non-Māori rates within the DHB (Fig 4.26). However this result is not statistically significant. Similarly, while the suicide mortality rate appears higher for Māori than non-Māori, the disparity may not be statistically significant (Fig 4.27).
Oral Health

The New Zealand Health Survey found that a higher proportion of Māori adults have had a tooth removed due to decay, abscess, infection or gum disease than non-Māori. However, the confidence intervals for these findings overlapped and so are not statistically significant (Fig 4.28).

Ethnic disparities are clearer for children’s oral health. Māori year eight children in the BOPDHB have a significantly greater mean number of teeth which have decayed, are missing or have been filled than non-Māori (Fig 4.29). The mean number is greater for Māori children with a non-fluoridated water supply than those with a fluoridated supply. This difference in mean number of decayed missing or filled teeth (DMFT) by water fluoridation status is not evident for the non-Māori year eight population. Māori year eight children in the BOPDHB without a fluoridated water supply have a mean of 3.0 DMFT. In comparison non-Māori year eight children within the DHB have a mean of 1.6 DMFT.

Bay of Plenty Māori year eight children have a significantly greater mean number of DMFT than Māori children nationally with the same fluoridation status (Fig 4.29).

Māori year eight children in the BOPDHB are also less likely to have no dental caries than non-Māori year eight children in the DHB (Fig 4.30). This difference is significant for those with an un-fluoridated water supply but overlapping confidence intervals make significance uncertain for those with a fluoridated supply. Māori children who have a fluoridated water supply are more likely to be caries-free than those with a fluoridated water supply. This difference in dental caries by water fluoridation status is not evident for non-Māori. Bay of Plenty Māori with non-fluoridated water supplies are more likely than Māori nationally to be caries-free.
Fig 4.29 Mean number of decayed, missing and filled teeth per year 8 child by fluoridation status and ethnicity, 2010

![Mean number of decayed, missing and filled teeth per year 8 child by fluoridation status and ethnicity, 2010](image)

Source: Community Oral Health Service, Ministry of Health

F = fluoridated water. NF = non-fluoridated water

Fig 4.30 Percentage of year 8 children who have no dental caries, by water fluoridation status, 2010

![Percentage of year 8 children who have no dental caries, by water fluoridation status, 2010](image)

Source: Community Oral Health Service, Ministry of Health
4.4 Health service utilisation

PHO enrolment

Ninety-one percent of the Māori population that live within the BOPDHB are enrolled with a PHO. In comparison over 99% of non-Māori that live within the DHB are enrolled with a PHO (Fig 4.31). The proportion of Māori that are enrolled with a PHO is higher within the BOPDHB than nationally, in which 87% of Māori are enrolled with a PHO.

PHO enrolments can either be with a PHO located within the BOPDHB or with a PHO in another DHB. Six percent of the enrolled Māori population that live in the BOPDHB are enrolled with a PHO that is based in another DHB (i.e., not the BOPDHB), compared to three percent of the non-Māori population.

Unmet GP need

In New Zealand, Māori are more likely than non-Māori to report being unable to see a GP when they needed to during the past 12 months. This same pattern is observed within the BOPDHB, although it is only statistically significant within the female population (Fig 4.32). Approximately 12% of Māori females within the Bay of Plenty report an unmet need for a GP within the past 12 month.
Emergency department utilisation

Māori appear to have a higher rate of emergency department utilisation than non-Māori, both within the Bay of Plenty and throughout New Zealand (Fig 4.33). However, overlapping confidence intervals mean that this finding is not statistically significant.

High emergency department utilisation for Māori could arise from a high rate of health emergencies, but could also be the result of poor access to primary health care. It is likely that a significant proportion of emergency department visits could be avoided or managed through appropriate primary care.

![Fig 4.33 Emergency department utilisation rate in the past 12 months for people aged 15 years and over, 2006/2007](image)

Source: NZ Health Survey 2006/07
Total response ethnicity
Oral health care worker utilisation

The New Zealand Health Survey found that adult Māori were significantly less likely than non-Māori to have seen an oral health care worker in the previous 12 months (Fig 4.34). The rate of seeing an oral health care worker in the Bay of Plenty for non-Māori was similar to the national rate.

Utilisation of health services is impacted by both the health need of a population and the access to services. The previous section has indicated that oral health need is greater for Māori than non-Māori. Consequently lower rates of seeing an oral health care worker by Māori is suggestive of access issues.

Unmet need for oral health care is significantly higher for Māori than non-Māori both nationally and within the BOPDHB (Fig 4.35). Māori unmet need is higher in the BOPDHB than nationally.

![Fig 4.34 Age standardised prevalence rate of people aged 15 years and over who have seen an oral health care worker in the past 12 months, 2006/2007](image)

Source: NZ Health Survey 2006/07
Total response ethnicity

![Fig 4.35 Age standardised rate of unmet need for adult* oral health care in the past 12 months, 2006/2007](image)

Source: NZ Health Survey 2006/07
Total response ethnicity
*15 years or over
General practice density

The BOPDHB has 73 full time equivalent (FTE) general practitioners (GPs) per 100,000 people (Fig 4.36). This is similar to the national density of GPs. However the majority of the Bay of Plenty GPs are concentrated within Tauranga City. Kawerau District and Ōpōtiki District have a much lower number of GP FTEs per 100,000 people. Access within these TAs may therefore be more difficult. Over 50% of the population of these two TAs are Māori.

4.5 Interview findings

The rangatahi interviewed in Bay of Plenty secondary schools voiced strong views on their health needs. At each of the schools, rangatahi expressed the need for improved access to health services. In particular, the need for school-based health service delivery was emphasised. These services could be delivered by a visiting health care professional but respondents expressed a strong desire for continuity of care by the provider. Students did not wish to see different health care professionals at subsequent visits, but valued the rapport and trust that could be developed with a single health care professional.

Students also expressed the need for comprehensive health care. In addition to consultation with a doctor or nurse, students also wished to have access to other health specialists such as a psychologist, and a dietitian. Finally, students also desired better access to sexual health services. Currently, access to sexual health services was limited by the need to travel, or discomfort with seeing a family’s usual doctor or nurse. Students strongly expressed the need for confidentiality and continuity in relation to these services.

4.6 Health Summary

Māori in the BOPDHB have a higher rate of exposure to a number of health risk factors than non-Māori, including tobacco smoke, obesity and hazardous alcohol use. Health disparities exist between Māori and non-Māori for most health outcome indicators presented within this document, with Māori faring worse in all cases. BOPDHB Māori die at a younger age and have higher rates of avoidable hospitalisation and mortality than non-Māori. Māori have poorer access to primary healthcare services compared to non-Māori, with high rates of unmet need reported, lower PHO enrolment, and fewer GPs per capita where the Māori population is most concentrated. Rangatahi expressed the need for better access to health care services and continuity of care, preferably through school-based service delivery.
Section 5 Education

Education is an important determinant of a person’s social and economic position, with consequent impacts on health. Low educational attainment has been linked to poor health status. Education improves people’s abilities to access and effectively utilise health, social, and economic resources.

5.1 Early childhood education

Participation in early childhood education contributes to a child’s later development, prepares children for further learning and helps equip them to cope socially at school. The achievement gap between children from low income families and those from higher income families is narrowed by quality early childhood education. Licensed early childhood education services include kindergartens, play centres, education and care services, Kōhanga Reo, home-based services and the Correspondence School. Ethnic differences exist in the proportion of children enrolled in licensed early childhood education services in the BOPDHB (Fig 5.1). Three and four year old Māori children have a lower proportion of enrolments in early childhood education than the total population of children of the same age.

Children can be enrolled in more than one early childhood education service. To avoid counting these children more than once, the prior participation of year one primary school children in early childhood education can be examined (Fig 5.2). In 2010, 93% of Māori year one children in the BOPDHB had attended early childhood education in the previous 12 months, compared to 97% of non-Māori children. Māori children had a lower attendance at early childhood education than non-Māori in all TAs within the DHB with the exception of Kawerau District. Just 69% of non-Māori year one children had attended early childhood education in the Kawerau District compared to 92% of Māori children.

![Fig 5.1 Proportion of 3 and 4 year old Bay of Plenty DHB children enrolled in licensed early childhood education, 1 July 2010](image-url)
5.2 School leavers

Attaining secondary school qualifications is important preparation for entering the workforce and for further training following secondary school. People who leave school with few qualifications are at greater risk of unemployment and of having low incomes, with consequent negative impacts on health.12

Māori in the BOPDHB have a lower rate of attainment of NCEA level 2 than non-Māori, 55% compared to 76% respectively (Fig 5.3). This disparity is present across all TAs within the DHB. However Māori school leavers have a slightly higher attainment of NCEA level 2 in the BOPDHB than nationally, where less than 50% of Māori have achieved NCEA level 2.

Source: Ministry of Education

Students with unknown ECE attendance have been excluded from the numerator and denominator

**Prioritised ethnicity

**Territorial authority is the territorial authority of the school each year 1 student was enrolled in
5.3 Educational attainment of the adult population

At the time of the 2006 census 42% of Māori adults in the BOPDHB had no educational qualifications, compared to just 26% of non-Māori (Fig 5.4). The proportion of Māori with educational qualifications was lower than non-Māori at all levels of qualification; but the difference was greater at post-secondary school and university levels.

5.4 Interview findings

The rangatahi interviewed in schools voiced the need for better resourcing of school equipment for kapa haka and sports. Students were able to cite occasions when activities could not be performed because of insufficient equipment. Students valued a safe school environment free of oppressive and bullying behaviour. The prevention of bullying was a key need along with the rapid management of bullying behaviour when it did occur. Students strongly valued the correct pronunciation of Māori words by teachers.

Students expressed the desire for greater integration between school, community, and whānau events. This was seen to some extent with kapa haka, where whānau were often engaged with practices, and performances were delivered for both school and community audiences. This integrated approach might be extended further with sporting activities, but also with academic activities. For example, school projects could focus on community issues, the work and findings of projects used to improve the community. Students also expressed the need for pastoral care and counselling at school. These services were especially useful for new entrants to secondary school. Finally, students wished for more healthy food options from school canteens, and the removal of junk food.

5.5 Education summary

Māori in the BOPDHB are less likely to be enrolled in or have attended early childhood education services than non-Māori. A significantly higher proportion of adult Māori than adult non-Māori in the DHB have no educational qualifications. Ethnic disparities exist for educational qualification attainment at all levels of qualification, from NCEA to university.
Section 6 Households

There are a range of household factors which have important impacts on the health of residents. Home ownership is associated with good health and increases financial security. Current market rents impact the finances of non-home owners. Where multiple families share a home there is an increased likelihood of overcrowding. Household overcrowding is associated with an increased risk of some infectious diseases and with psychological distress. Household access to telecommunication systems and a motor vehicle is important to provide access to health services and social supports. Warm, dry housing is an important determinant of good health.

6.1 Home ownership

Home owners have reduced mortality, from all causes, and better self-assessed general health compared with home renters. Home ownership provides a degree of financial security and reduces the risk of disruption from frequent changes of dwelling. People who do not change their dwelling for a long period of time are more likely to have good social networks and are better able to access community services than those who change address frequently. Home ownership may also improve psychological health by providing a sense of autonomy and social status.

Just 50% of Māori in the BOPDHB either own their own home or have their home in a family trust, compared to 67% of non-Māori (Fig 6.1). This is a higher home ownership rate than that of Māori nationally (46%).

Tauranga City is the TA with the lowest rate of Māori home ownership within the BOPDHB, possibly reflecting lower housing affordability within the city.

* In this report, Māori home ownership was estimated by including houses from the 2006 New Zealand Census, where one or more of the adults living in a house was Māori, and the respondent stated that they owned the house they were living in.
6.2 Market rent

Affordable housing is important for health and wellbeing. High housing costs can impact on financial security for low income families. The average market rent within the BOPDHB was slightly lower than the national average in 2011 (Fig 6.2). There is marked variation in the average market rent between territorial authorities within the DHB, with Kawerau and Ōpōtiki Districts having the lowest and Tauranga City the highest rents.

![Fig 6.2 Average market rent* by Territorial Authority, July - Dec 2011](image)

Data source: Department of Building and Housing

*Data for non-government properties for which a bond was lodged with the Department of Building and Housing for the specified time period only.

6.3 Household crowding

Household crowding is associated with a number of infectious diseases, including meningococcal disease and rheumatic fever. Poor educational attainment and psychological distress are also both correlated with household crowding. The Canadian National Occupancy Standard is a commonly used measure of household structural overcrowding. It takes into account the number of bedrooms in a house for the number of occupants, and has specific requirements relating to sharing bedrooms. The household is considered overcrowded if one or more additional bedrooms are required. The rate of overcrowding in the BOPDHB, based on this standard, is over four times greater for Māori than non-Māori (Fig 6.3). Twenty four percent of Māori and five percent of non-Māori live in overcrowded homes. There is a higher rate of household overcrowding for Māori in the BOPDHB than Māori nationally.

The proportion of people living in overcrowded housing within the BOPDHB declines with increasing age, with a greater decline for Māori than non-Māori (Fig 6.4). The Canadian measure of structural overcrowding differs from that of functional overcrowding. This latter measure involves crowding into a limited number of rooms because heating costs may be too high to warrant heating other rooms.
Fig 6.4 Proportion of people living in crowded housing* within the Bay of Plenty DHB, by age group, 2006

Source: Census 2006
* Requiring one or more additional bedrooms, as defined by the Canadian Crowding Index
6.4 Household composition

Household living arrangements for Māori within the BOPDHB are consistent with national trends for Māori; however differ from those of non-Māori within the DHB. While most Māori live in two parent households with children, the proportion of Māori living with this arrangement is slightly lower than for non-Māori but is higher than national totals (Fig 6.5). A greater proportion of Māori than non-Māori share a household with two or more families. This arrangement is likely to contribute to household crowding, with the consequent associated health issues. Such living arrangements may relate to financial pressures or a preference for intergenerational living.

Eighteen percent of Māori within the BOPDHB live in one parent households with children compared to just eight percent of non-Māori (locally and nationally) (Fig 6.5). People in one parent households often face increased financial and social pressures. This may account for the fact that the national home ownership rate is lower for one parent families than for other households.19

Fig 6.5 Household Composition by Area and Māori Ethnic Indicator*, 2006

Data source: Statistics NZ
*Proportion of people in households in private dwellings for census usually resident population. Non-Māori is number of total respondents who stated ethnicity less those who identified as Māori.
One parent families make up a higher proportion of Māori households in the Kawerau District than in the other TAs within the BOPDHB (Fig 6.6).

### Fig 6.6 Proportion of people in Households with One parent and children by Area and Māori Ethnic Indicator*, 2006

Inadequate household heating is associated with poor health, particularly for vulnerable members of the household, such as older people, infants and the ill. Warmer and drier homes are associated with better self-rated health, fewer days off school and work, and fewer visits to GPs.

Three percent of Māori have no form of heating in their homes, compared to approximately two percent of non-Māori within the BOPDHB (Fig 6.7). This difference is greater in some TAs than others, in particular Ōpōtiki District.

### 6.5 Access to household heating

Inadequate household heating is associated with poor health, particularly for vulnerable members of the household, such as older people, infants and the ill. Warmer and drier homes are associated with better self-rated health, fewer days off school and work, and fewer visits to GPs.

Three percent of Māori have no form of heating in their homes, compared to approximately two percent of non-Māori within the BOPDHB (Fig 6.7). This difference is greater in some TAs than others, in particular Ōpōtiki District.

### 6.7 Age standardised proportion of people living in dwellings with no form of heating used, 2006

Source: Statistics New Zealand
6.6 Access to household telecommunication systems

Access to a telephone and other telecommunication systems help maintain social connectedness and are an important means of contacting health services. Māori in the BOPDHB are almost seven times more likely to have no access to telecommunication systems than non-Māori (Fig 6.8). The proportion of Māori with no access to telecommunication systems is greater in the Bay of Plenty than nationally, and varies between TAs within the DHB. More than 12% of Māori in the Ōpōtiki District have no access to telecommunication systems, the highest rate within any BOPDHB TA.

Disparities exist between Māori and non-Māori in access to a home telephone, mobile phone, fax machine and the internet, with Māori being worst off (Fig 6.9). The internet is important for obtaining a wide range of information and services. Approximately 40% of Māori have access to the internet compared to 70% of non-Māori in the DHB.

![Fig 6.8 Proportion of people in households with no access to telecommunications systems, 2006](image1)

Source: Statistics New Zealand

![Fig 6.9 Age standardised proportion of Bay of Plenty DHB residents with access to telecommunication systems, by ethnic group, 2006](image2)

Source: Statistics New Zealand, Census 2006
6.7 Access to a household motor vehicle

People with no access to a motor vehicle may experience transportation difficulty. This can lead to difficulty accessing healthcare and other services. It can also contribute to social isolation. Nine percent of Māori in the BOPDHB have no access to a motor vehicle, compared to just three percent of non-Māori (Fig 6.10). Whakatāne District, Kawerau District and Ōpōtiki District are the TAs within the BOPDHB which have the greatest proportion of Māori with no motor vehicle access.

![Fig 6.10 Age standardised proportion of people over 15 years of age who live in households with no motor vehicle access, 2006](image)

Source: Statistics New Zealand

6.8 Interview findings

Interviewees expressed the desire for quality housing; in particular, less crowding and warmer homes over winter months were required. Outside the home, students desired a greater range of readily accessible third-space options besides home and school. Suggestions included youth centres, sports gymnasiums, and enclosed swimming pools. These areas could provide positive reasons to congregate with others and be active.

6.9 Households summary

Ethnic disparities exist in BOPDHB for a range of household factors which are important determinants of health. Home ownership is less common for Māori than non-Māori. Greater proportions of Māori than non-Māori live in overcrowded homes and have more than one family sharing a home. Single parent families are more common amongst the Bay of Plenty Māori population than the non-Māori population. Māori are less likely than non-Māori to have any form of household heating, to have access to telecommunications systems or to have access to a motor vehicle.
Section 7 Work and Income

Work is important to provide people with an income to meet their basic needs, but also provides social contacts and a sense of self-worth. In contrast, unemployment is associated with a range of poor health outcomes such as depression, obesity, heart disease etc. Higher incomes are associated with better health than lower incomes. Section 7.1 examines employment and unemployment rates within BOPDHB. Section 7.2 discusses income differences between Māori and non-Māori within the DHB.

7.1 Work

Employment

The employment rate is the number of people over 15 years who are employed, for at least one hour per week, as a percentage of the total working age population. A number of factors can affect the employment rate, including availability of work, migration patterns, personal decisions and skill levels.¹²

Fifty six percent of the Bay of Plenty DHB Māori working age population are employed (Fig 7.1). This is lower than the employment rate for non-Māori in the DHB and lower than the rate for Māori nationally. The Māori age standardised employment rate is lower than that of non-Māori for all TAs within BOPDHB.

Approximately the same proportion of Māori and non-Māori workers within BOPDHB are employed on a part-time basis, less than 30 hours per week (Fig 7.2). Females are more likely to be employed part-time than males.
Unemployment

Unemployment is associated with a number of health issues, including depression, premature mortality and a greater use of health services.22-24 The unemployment rate is the number of people who are not employed, but are available and actively seeking work, as a percentage of the total labour force (both employed and unemployed people).

In the 2006 census the Māori unemployment rate within the BOPDHB was approximately three times greater than that of non-Māori (Fig 7.3). Māori had a higher unemployment rate than non-Māori within all TAs of the BOPDHB and a higher rate than Māori nationally.

More recently in 2011 the Household Labour Force Survey found the Māori unemployment rate to be three times that of non-Māori in the BOPDHB (Fig 7.4). The Survey also found the unemployment rate for Māori in the BOPDHB to be higher than that of Māori nationally.
Youth NEET

Many young people who are not in the labour force may instead be in education or training for future work. Employment rates alone may therefore not be a good predictor of future outcomes for young people. Youth NEET refers to the proportion of young adults (aged 15 to 24 years) who are not employed and not in education or training (NEET). This provides a more useful indicator of those who are likely to be at risk of poor outcomes in the future. Non-participation of young people in employment, education or training is a predictor of future unemployment, low income and poor mental health.

The Māori NEET rate for young people in the BOPDHB is over two and a half times greater than the non-Māori rate (Fig 7.5). Over 25% of Māori young people in the BOPDHB are not in employment, education or training. The BOPDHB NEET rate is higher than the rate for Māori nationally.

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**Fig 7.4 Proportion of the total labour force that are unemployed*, for year ended June 2011**

*For people aged 15 years and over

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**Fig 7.5 Proportion of people aged 15-24 years who are not in employment, education or training, 2011**

Source: Household Labour Force Survey, Statistics New Zealand  
Ethnicity is non-standard. "Non-Māori" is any specified response that excludes any response as Māori.
7.2 Income

Higher incomes are generally associated with lower morbidity and mortality from a number of different conditions when compared to lower incomes. Low incomes limit the ability of people to meet their basic needs as well as their ability to participate in wider society. Longstanding low family income in childhood is associated with lower educational attainment and poorer health.

Personal income

Approximately 26% of working age Māori in the BOPDHB have an income of $10,000 or less, compared to 21% of non-Māori (Fig 7.6). While this ethnic difference in income also exists nationally, the disparity is much greater within the BOPDHB, and within each of its TAs.

![Fig 7.8 Median household income* by area and Māori ethnic indicator**, 2006](image)

Data source: Statistics NZ
* Household Income represents the before-tax income for all people in the household, aged 15 years and over, for the 12 months ending 31 March 2006. Income may be from a variety of sources e.g. salary and wages, business, interest and dividends from investments, benefits etc.
** Non-Māori is number of total respondents who stated ethnicity less those who identified as Māori.
Income inequalities are associated with lower levels of social cohesion and life satisfaction. This is true even if all people in society have adequate incomes to meet their basic needs. Income inequalities exist between Māori and non-Māori in the BOPDHB. Māori are more likely than non-Māori to have a personal income in any income category less than $30,000, but are less likely than non-Māori to have a personal income in any income category over $30,000 (Fig 7.7). The proportion of non-Māori earning greater than $70,000 is over twice that of Māori. Sixty seven percent of Māori have a personal income of $30,000 or less, compared to 60% of non-Māori within the DHB.

**Fig 7.7 Personal income of Bay of Plenty Residents*, by ethnicity**, 2006

Source: Statistics New Zealand, 2006 Census data

*Age standardised proportion of those who stated their income

**Non-Māori is the number of total respondents who stated their income less those who identified as Māori

**Household income**

The personal income measures examined above include data for all people aged 15 years and over. This includes people working part-time for a second income for the family and spouses choosing not to work. Household income may therefore provide a better indication of actual family income, and is a better predictor of the effect of income on children and youth. Bay of Plenty Māori have a median household income of approximately $48,000 compared to $57,000 for BOPDHB non-Māori and $55,000 for Māori nationally (Fig 7.8). Māori have a lower median household income than non-Māori for all TAs within the BOPDHB with the exception of Kawerau District.

**Fig 7.8 Median household income* by area and Māori ethnic indicator**, 2006

Data source: Statistics NZ

* Household income represents the before-tax income for all people in the household, aged 15 years and over, for the 12 months ending 31 March 2006. Income may be from a variety of sources e.g. salary and wages, business, interest and dividends from investments, benefits etc.

**Non-Māori is number of total respondents who stated ethnicity less those who identified as Māori.
7.3 Interview findings

Rangatahi were apprehensive about job prospects, particularly in smaller towns. Rangatahi were aware of family members and others who had become unemployed over recent years. Interviewees were also aware of the high proportion of young people who were unemployed. These findings are echoed by the quantitative data.

7.4 Work and income summary

Māori in the BOPDHB have a lower employment rate and higher unemployment rate than non-Māori in the DHB and Māori nationally. The NEET rate for young people is higher for Māori than non-Māori in the BOPDHB.

A greater proportion of working age Māori have a personal income of $10,000 or less than non-Māori in the BOPDHB. Māori have a lower median household income than non-Māori within the DHB and within all of the DHB’s TAs except Kawerau District.
Section 8 Political Participation

Participation in voting at elections can provide psychological benefits associated with feelings of personal efficacy and empowerment. Voting communities that vote are better represented in government, with potential benefits to the community. Voter turnout at elections provides an indication of the health of a population. Individuals with poor physical or mental health are less likely to vote at elections. Additionally voter turnout provides an indication of the importance that a population places on political institutions, and the extent to which they feel that their participation in voting can make a difference.

8.1 Enrolment on the electoral roll

In New Zealand all those who are eligible are required by law to enrol to be registered on the Parliamentary Electoral Roll. New Zealand citizens and permanent residents aged 18 years and over are eligible to enrol. Māori and their descendants have the option of enrolling to be registered on either the Māori electoral roll or the general electoral roll. It is not compulsory to vote in elections.

One Māori electorate (Waiairiki) and four general electorates (Bay of Plenty, Tauranga, Rotorua and East Coast) extend into the BOPDHB boundaries. The Waiairiki Māori electorate covers the Bay of Plenty region and Taupo district, including part of the volcanic plateau. This area is much more extensive than that covered by the BOPDHB but is the smallest area for which Māori enrolment and voter turnout data is readily available.

Ninety one percent of voting age Māori living in the Waiairiki Māori electorate area were enrolled on either the Māori or general electoral roll in 2008 (Fig 8.1). In comparison between 95 and 98% of the total voting age population that lived in the area covered by the Bay of Plenty, Tauranga, Rotorua and East Coast electorates were enrolled on either the Māori or general electoral roll at that time. This difference is similar to differences seen in enrolment nationally, in which 95% of the total voting age New Zealand population were enrolled on an electoral roll, compared to approximately 92% of eligible Māori in 2008.

The proportion of Māori enrolled to be registered on the Māori electoral roll varied between 43% and 74% in Bay of Plenty DHB electorates in 2008 (Fig 8.2).

Throughout the Waiairiki electorate area 62.6% of all enrolled Māori chose to be on the Māori electoral roll in 2008. Nationally 56.8% of all enrolled Māori were on the Māori electoral roll at that time.
Fig 8.1 Proportion of voting age adults* who are enrolled on the general or Māori electoral roll, by electorate of residence and ethnic group, 2008

*For Waiariki and total Māori electorates - proportion of estimated 2008 Māori descent population on the Māori or general roll
For Bay of Plenty, Tauranga, Rotorua, East Coast and total NZ electorates - proportion of estimated 2008 voting age population (all ethnicities) on the Māori or general roll

Fig 8.2 Proportion of Māori* enrolled on the Māori electoral roll, by electoral area 2008

* Māori enrolled on the Māori electoral roll in 2008 as a proportion of 2006 Māori descent usual resident population aged 18 years and over.
8.2 Voter turnout

General elections

Voter turnout declined from 2008 to 2011 for people enrolled on both the Māori and general electoral roll.

Between 74% and 77% of people on the general electoral roll (which includes electors of all ethnicities) voted in the 2011 general election within the electorates of Bay of Plenty, Tauranga, Rotorua and East Coast (Fig 8.3). In comparison voter turnout of Māori on the Māori electoral roll in the Waiariki electorate was 60%. Similarly voter turnout for all Māori electorates within New Zealand was 58% of those on the Māori electoral roll in 2011. Total voter turnout in New Zealand, for those on both the Māori and general roll, was 74%.

Regional council elections

The Bay of Plenty Regional Council includes the geographical area covered by the BOPDHB. Councillors on the Regional Council are elected within six constituencies. There are four general constituencies; Tauranga, Rotorua, Western Bay of Plenty and Eastern Bay of Plenty. Additionally there are three Māori constituencies, two of which are located within the BOPDHB area (Mauao and Kohi). Their boundaries largely coincide with TA boundaries. Mauao includes the area covered by the Western Bay of Plenty and Tauranga City TAs. Kohi includes the area covered by the Whakatāne District, Kawerau District and Ōpōtiki District TAs. The third Māori constituency, Okurei, covers the area within the Rotorua District, and as such is not included within the BOPDHB. Voters within the Māori constituencies are those voters who have chosen to enrol on the Māori electoral roll.

Voter turnout at the regional council elections is lower than that of the New Zealand general election (Fig 8.4). Voter turnout in the Māori constituency seats was 27% and 41% for Mauao and Kohi respectively. In contrast voter turnout for the general constituency seats (which include electors of all ethnicities) ranged from 38% to 64%.
8.3 Representation of Māori in local government

Regional council

Māori constituency seats

Māori constituency seats within the Bay of Plenty Regional Council give Māori a voice and involvement in council processes. The council has three Māori constituency seats, each of which elects one Māori councillor. The regional council will therefore always have a minimum of three Māori councillors out of a total of 13. Voters in the Māori constituencies are those who are registered on the Māori electoral roll.

Māori committee

In addition to Māori constituency seats the Bay of Plenty Regional Council has a Māori Committee. The primary function of the Māori Committee is to develop specific actions which align with the Council’s legislative obligations to Māori, and to monitor how these are implemented.

Tangata whenua and the general public are encouraged to attend and participate in this forum. Meetings of the Māori Committee are held on marae across the area.

Fig 8.4 Voter turnout for Bay of Plenty Regional Council Election 2010, as a percentage of electors on the electoral roll*

* For general constituency seats - proportion of electors on the general roll
For Māori constituency seats - proportion of electors on the Māori roll
For Bay of Plenty Regional Council and total NZ regional council - proportion of electors on both the Māori and general roll

Section 8 Political Participation 65
City and district councils

A number of the City and District Councils, while not having specific elected Māori seats, have within their structure mechanisms for ensuring the point of view of local Māori is incorporated into Council processes.

Tauranga City Council

Tauranga City Council (TCC) has several mechanisms that provide a voice for Māori on council.

- The Tauranga Moana Tangata Whenua Collective (“the Collective”) is an autonomous body made up of 15 representatives from each hapu and iwi in the TCC area. The purpose of the Collective is to provide a forum for Tangata Whenua within the TCC area to discuss and debate local authority concerns and to implement initiatives to advance and protect the interests of Tangata Whenua.
- Six representatives of the Collective are nominated onto the Tangata Whenua / TCC Committee. This is an established standing committee of council made up of Tangata Whenua and council representatives. The role of this committee is to provide strategic leadership and advice to TCC, Tangata Whenua and the wider community in respect to environmental, social, economic and cultural outcomes relating to Tangata Whenua.
- The Kaumatua Forum provides an opportunity for Kuia and Koroua of Tauranga Moana to raise issues and concerns with the Mayor, Chief Executive and staff. It also allows them to be updated on council projects that have been identified as significant to them. Membership is open to any person of Kaumatua status in and around Tauranga Moana.

Western Bay of Plenty District Council

The Māori Forum advises Council or its Committees on issues pertaining to Māori. The Chair and Deputy Chair positions are filled by Tangata Whenua and the Mayor respectively. Membership includes councillors and representatives from local iwi.

Whakatāne District Council

The Iwi Liaison Committee provides a Māori perspective to decision making. A Tūtohinga (Memorandum of Understanding) exists between the Iwi Liaison Committee and the Whakatāne District Council. The committee has 3 elected members and representatives from local iwi.

8.4 Political participation summary

In 2008 eligible Māori in the Waiariki electorate were less likely to be enrolled on either the Māori or general electoral roll than the total voting age population in general electorates within the area. Māori on the Māori electoral roll in Waiariki were less likely to vote at the 2008 or 2011 general elections than people on the general electoral roll in general electorates within the area.

These electorates do not align directly with the BOPDHB boundaries. However, the findings within electorates in the Bay of Plenty area together with similar national findings suggest that enrolment and voter turnout rates will be similar within the DHB.

Voter turnout for the 2010 regional council election was lower than for the 2008 and 2011 general elections. The Māori constituency seat Mauao had a lower voter turnout for the Bay of Plenty Regional Council election than the Kohi electorate seat or the general constituency seats.

Three Māori constituency seats ensure Māori representation in the Bay of Plenty Regional Council. Although there are no Māori constituency seats for the district and city councils within the area, mechanisms exist within some Bay of Plenty TAs to provide Māori with a voice on councils.
Cultural identity provides people with a sense of self and is important for overall wellbeing. New Zealand is a multicultural society, within which Māori culture has a special place. For example the Treaty of Waitangi provides an obligation for the government to protect the Māori language. The Māori language is classified as an official language of New Zealand. Māori language is a central part of Māori culture. This section provides information on the proportion of Māori who are able to speak the Māori language as well as the utilisation of Māori medium education within the BOPDHB. Kapa haka attendance and knowledge of iwi provide further indicators of cultural identity.

Kapa haka provides an opportunity for Māori to express their cultural identity through song and dance. Knowledge of iwi is an important part of cultural identity for Māori.

9.1 Māori language speakers

Thirty percent of Māori in the BOPDHB reported that they could speak in Māori in the 2006 census (Fig 9.1). There is variation in the proportion of Māori language speakers by TA. Approximately 38% of Māori in the Ōpōtiki and Whakatāne District could speak Māori, while 22% of the Māori in Tauranga City could speak the language. Nationally approximately 23% of Māori are Māori language speakers.

Fig 9.1 Proportion of Māori Ethnic Group* who reported they could speak Māori by Area, 2006

Source: Statistics NZ, Census 2006 data
* Total Response for those who identified as Māori in the 2006 Census.
Denominator includes those who could not speak (i.e. were too young) and those whose response was not included (i.e. illegible, no response etc.)
9.2 Māori medium education

Māori medium education refers to education taught in the Māori language for at least 51% of the time.\textsuperscript{20} Achievement of Māori language fluency requires students to have at least 50% immersion in the language for a period of six years or more.\textsuperscript{31} Te Kōhanga Reo is a Māori language and culture total immersion programme for young children aged from birth to six years.\textsuperscript{20} Kura Kaupapa Māori provides language total immersion education for school age children. The purpose is the retention of the Māori language, strengthening Māori identity and improving education outcomes among Māori children.

Participation in Māori medium education within the BOPDHB provides an indication of the interest of Māori in strengthening the Māori language.\textsuperscript{20}

Thirty four percent of Māori early childhood education students are enrolled in Kōhanga Reo in the BOPDHB area compared to 23% nationally (Fig 9.2). There is variation in Kōhanga Reo enrolments by TA within the DHB. Tauranga city has just 15% of Māori early childhood students enrolled in Kōhanga Reo, while Whakatāne has almost 50% of Māori students in Kōhanga Reo.

![Fig 9.2 Proportion of Māori early childhood education students enrolled in Te Kohanga Reo, by Area*, 1 July 2010](image)

Kura Kaupapa Māori schools refer to Māori medium education schools for those aged 5-18 years. Māori student enrolments in Kura Kaupapa Māori vary by TA (Fig 9.3). Approximately seven percent of Māori students in Whakatāne District are enrolled in Te Kura Kaupapa Māori compared to just two percent in Western Bay of Plenty District. (Fig 9.3). There were no Kura Kaupapa to attend in Kawerau District as at July 2011 and so students domiciled there may attend kura in neighbouring areas (Table 9.1).

Overall the proportion of Māori students enrolled in Kura Kaupapa Māori in the BOPDHB is slightly higher than the proportion nationally. Higher rates of enrolment in Māori medium education within BOPDHB suggest an interest by Māori residents in preserving and retaining the Māori language.
There are 64 Kōhanga Reo and nine Kura Kaupapa in the BOPDHB area (Table 9.1), with marked variation in the number between territorial authorities. Whakatāne District has the greatest number of both Kōhanga Reo and Kura Kaupapa, while Kawerau district had no Kura Kaupapa and the least number of Kōhanga Reo as at July 2011. However, Kōhanga Reo make up 50% of all early childhood education services in Kawerau and 59% within the Ōpōtiki District (Fig 9.4). In contrast Kōhanga Reo in Tauranga City make up just eight percent of all early childhood services. Twenty three percent of all early childhood centres in the BOPDHB are Kōhanga Reo, compared to 11% nationally.

Table 9.2 provides information about Te Kura Kaupapa and year levels taught within each TA of the BOPDHB.

### Table 9.1 Number of Te Kōhanga Reo* and Te Kura Kaupapa** by area

<table>
<thead>
<tr>
<th>Area</th>
<th>Te Kōhanga Reo</th>
<th>Te Kura Kaupapa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Bay of Plenty District</td>
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<td>1</td>
</tr>
<tr>
<td>Tauranga City</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Whakatāne District</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>Kawerau District</td>
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<td>0</td>
</tr>
<tr>
<td>Ōpōtiki District</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>BOPDHB area</td>
<td>64</td>
<td>9</td>
</tr>
<tr>
<td>Total NZ</td>
<td>463</td>
<td>72</td>
</tr>
</tbody>
</table>

Source: Ministry of Education  
*as at 1 July 2010  
**as at 1 July 2011
Table 9.2 Te Kura Kaupapa and the year levels offered in the Bay of Plenty DHB area, by territorial authority, 1 July 2011

<table>
<thead>
<tr>
<th>Territorial authority</th>
<th>Name</th>
<th>Year Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Bay of Plenty District</td>
<td>Te Kura Kaupapa Māori (TKKM) o Te Matai</td>
<td>Years 1-8</td>
</tr>
<tr>
<td>Tauranga City</td>
<td>TKKM o Te Kura Kōkiri</td>
<td>Years 1-13</td>
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<td>TKKM o Otepou</td>
<td>Years 1-8</td>
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<tr>
<td></td>
<td>Te Kura Mana Māori o Matahi</td>
<td>Years 1-8</td>
</tr>
<tr>
<td></td>
<td>Te Kura Māori a Rohe o Waiohau</td>
<td>Years 1-13</td>
</tr>
<tr>
<td>Ōpōtiki District</td>
<td>Te Kura Mana Māori Maraenui</td>
<td>Years 1-8</td>
</tr>
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<td></td>
<td>TKKM o Waioweka</td>
<td>Years 1-8</td>
</tr>
</tbody>
</table>

Source: Ministry of Education

9.3 Kapa haka attendance

In 2002 the Cultural Experiences Survey took place in New Zealand. The survey found that 16% of the population aged 15 years and over in New Zealand attended a kapa haka performance in the 12 months leading up to the survey. The proportion was higher in the Bay of Plenty, with 25% of the population in this age range attending a kapa haka performance in the 12 months prior to the survey. Nationally over 45% of Māori over 15 years of age had attended a kapa haka performance during this period.32

9.4 Knowledge of iwi

The New Zealand Census provides a potential measure of cultural awareness through the iwi identity field. At the 2006 census, twelve percent of those who identified their ethnicity as Māori did not list one or more iwi in the Census questionnaire. This compares with 16% of Māori nationally (Fig 9.5). The proportion of Māori within the DHB who did not identify their iwi at the Census was highest in the Tauranga City and Western Bay of Plenty Districts, where it was more than double that of the Whakatāne, Kawerau and Ōpōtiki Districts.
This is a non-validated proxy for cultural identity it may be that some Māori Census participants simply chose not to complete the iwi field despite full awareness of their iwi.

9.5 Interview findings

Students valued the opportunity to participate in kapa haka and Manu Korero competitions through school. Students stated these events provided a stage to proudly express their cultural identity. Students expressed the need for proper pronunciation of Māori words by teachers. Students also expressed appreciation where schools had integrated tikanga into school activities and events.

9.6 Summary of culture

Cultural identity appears to be more important to a greater proportion of Māori in the BOPDHB than for Māori nationally. A greater proportion of BOPDHB Māori are able to speak the Māori language, are enrolled in Māori medium education and are aware of their iwi affiliations than Māori nationally. Kapa haka performances are attended by a larger proportion of the entire population and Kōhanga Reo make up a greater proportion of all early childhood education services within the BOPDHB than nationally. Overall BOPDHB Māori perform well on indicators of cultural identity in comparison to Māori throughout New Zealand. Greater cultural awareness in the Bay of Plenty may be assisted by the fact that Māori make up a greater proportion of the population in the Bay of Plenty DHB than they do nationally.
Section 10 Recommendations

This report examined both quantitative and qualitative data to obtain information about the Māori population within Te Moana ā Toi. Data has been presented on a range of indicators providing information on Māori health, educational attainment, housing, work and income, political participation and Māori culture within the region. This document is therefore relevant for a range of organisations, with roles in these different areas. These include BOPDHB, local government, the Whānau Ora Regional Leadership Group, health service providers and relevant central government departments.

A number of recommendations related to different issues within the report are discussed below. The recommendations are macro-level and strategic in nature. The micro-level solutions to individual issues, conditions, and outcomes are best addressed collaboratively by the various stakeholders who sponsored this report.

1. Report Distribution

It is recommended that BOPDHB facilitate distribution of this report to a wide audience. Health agencies are not in a position to address all issues raised within this document, some of which they have only limited ability to influence. Instead, intersectoral collaboration is essential to achieve health and social gains for Māori throughout the DHB. Stakeholder collaboration can be achieved by sharing the report's contents through electronic and physical distribution, and the provision of presentations. Key stakeholder groups include:

- Planning and Funding, BOPDHB;
- The Whānau Ora Regional Leadership Groups in Te Moana ā Toi and Te Arawa;
- Mainstream and Māori health service providers;
- Local government;
- Local schools;
- Iwi;
- Other agencies such as the Ministry of Education, the Ministry of Social Development, and Te Puni Kōkiri.

2. Improve Health Equity

A range of health inequities between Māori and non-Māori were identified in this report. To help achieve health equity it is recommended that equity attainment become a measurable criterion in the prioritisation, planning, implementation and evaluation of health and social services facilitated by BOPDHB and the Whānau Ora Regional Leadership Group. This can be attained by using the data in this report to quantify the degree of inequitable outcomes and then measuring the degree of equity attained by an intervention. In addition, the qualitative findings of this report can be used to inform assessments of the health and social needs of rangatahi and others in the area. The focus on equity can be achieved systematically by using the various equity planning and evaluation guidelines created by the Ministry of Health.

3. Improve the social determinants of health

This report provides information on a range of health determinants, such as: educational achievement, housing, income, and employment. Māori in the BOPDHB are in general disadvantaged in comparison to non-Māori in their access to these health determinants. Achieving equity in health outcomes will be difficult whilst inequities remain for these health determinants.

Addressing these inequities is the responsibility of a range of agencies, including the BOPDHB, local government, other government organisations, NGOs, and iwi. BOPDHB may be able to provide expertise and facilitate collaboration between sectors.

It is recommended that BOPDHB facilitate planning to prioritise, select and improve social determinants by working intersectorally with the collection of stakeholders mentioned above. Housing is an opportune issue to address as it overlaps with renewed focus on reducing the incidence of rheumatic fever in the New Zealand. Improved housing conditions will have an impact on a range of issues including close contact infectious diseases and ASH rates.
4. Improve access to health services

Access to primary health care is lower for Māori than non-Māori within BOPDHB; PHO enrolments are lower for Māori, and Māori report higher rates of unmet GP need. ASH rates are higher for Māori. The proportion of GPs per capita decreases sharply in the eastern Bay of Plenty, despite deprivation increasing. Rangatahi have voiced their wish for better access to health services in schools in this report. In sum these findings indicate the need to improve primary care access in BOPDHB. It is recommended that:

- BOPDHB provides education to PHOs and primary care providers on the degree of inequitable outcomes seen across the Bay of Plenty for a range of conditions;
- BOPDHB investigates the range of additional health care services which could be based in schools;
- BOPDHB works with PHOs to lift enrolment rates for Māori in the area;
- BOPDHB works with PHOs and general practice to identify the leading causes of ASH and develop interventions to address these conditions;
- BOPDHB works with the Eastern Bay Primary Health Alliance to increase primary care access in the eastern Bay of Plenty.

5. Political participation

Political participation provides a means for Māori to take action to improve the wellbeing of the Māori population, and to develop community empowerment. While it is difficult to determine political participation within the confines of the DHB boundaries, Māori political participation in the wider Bay of Plenty region appears to be poor in comparison to the participation of the total population. Māori were less likely to be enrolled on either the Māori or general electoral roll than the total population in the area. Māori on the Māori electoral roll were less likely to vote than all people on the general roll. While we do not know the voting behaviour of Māori on the general electoral roll, these findings are suggestive of low overall political participation by Māori. Therefore it is recommended that the RLG support Whānau Ora initiatives which promote and increase political participation.

6. Further research

This report identifies many of the needs of Māori within the BOPDHB. However, gaps within the report will require further collection of data in the future. Although the most recent data has been utilised, for many indicators this data is five to six years old at the time of writing. Changes in rates over time have not been provided within this report, but in the future such data could provide additional useful information to ensure that disparities are reduced. Low numbers of people meeting the requirements for some indicators within the DHB has led to wide confidence intervals, resulting in uncertain statistical significance. Collection of data over a longer time period will be necessary to overcome this issue.

To address these points it is recommended that:

- The relevant population information be updated in the report following the next census;
- The DHB undertake ongoing monitoring for key indicators with marked differences between Māori and non-Māori (for example ASH rates, diabetes, COPD, and cardiovascular disease mortality and hospitalisations);
- The DHB and health service providers work to ensure accuracy in their collection of Māori ethnicity data.
References


