Report to:

Te Whare Punanga Korero

and the

Taranaki District Health Board

MĀORI IN THE TARANAKI REGION:

A SOCIO-ECONOMIC AND HEALTH PROFILE

Prepared by

Jason Leung-Wai

Kel Sanderson

Revised August 2009

BERL ref #4659

Business and Economic Research Limited, BERL House, 108 The Terrace, PO Box 10277, Wellington 6143, New Zealand

T: 04 931 9200 F: 04 932 9202 info@berl.co.nz www.berl.co.nz

1 Executive Summary

The focus of this report is to provide a snapshot of the socio-economic profile of Māori in the Taranaki region. It aligns with an earlier BERL report looking at the economic profile of Māori in the Taranaki region.

While the economic profile suggests that Māori have significant assets and can be a key contributor to economic development in the region, this socio-economic profile suggests that there is a wide gap between Māori and non-Māori across a range of social and health indicators.

A major objective of this report was to identify regional data that would be useful to inform, in conjunction with the Taranaki District Health Board's Health Needs Assessment 2007, the Māori health strategy for Taranaki. The national Māori health strategy is focused on Whanau Ora, supporting Māori families to achieve their maximum health and wellbeing.

A particular difficulty of any strategy is to understand the current situation from which to formulate a response, and then to measure the effectiveness of what you are doing. Identifying accurate and timely regional data broken down by ethnicity is a major constraint faced by all DHBs.

The report has identified that Māori health status is poor. Similarly, Māori have poor outcomes across most socio-economic indicators. Direct spend on Māori health and participation by Māori in the provision on health is also low.

When read together with the economic profile for the region and the TDHB Health Needs Assessment 2007 report, there are clear areas of action identified.

Further, the social indicators discussed in this report are the responsibility of a number of government and other organisations. Identifying solutions will require interaction across the range of agencies to concord their delivery of services.

A key focus therefore is how Māori can leverage off their significant asset base, utilising the range of social assistance mechanisms, to improve social and health outcomes?

Key findings

Māori have a young and growing population in a region where overall population growth is static at best. Given this young and growing population, there is potential for increasing Māori participation in the health system. Conversely, the growing population suggests a need to focus on preventative and early intervention strategies to reduce or minimise health issues.

There is an interesting iwi diaspora in the Taranaki region. Around 43 percent of Māori in Taranaki whakapapa to iwi outside the region. Further, for every person living in Taranaki that whakapapa to their region, there are another two that live outside the region. This diaspora provides a wider resource base that the region can tap into.

The socio-economic analysis in this report highlights the stark inequalities across a range of indicators. This is also reflected in the health outcomes, where Māori have greater health issues. This report provides a clear signal that assertive action is required if we are to break this cycle of poor Māori health and growing dependence on the health system.

The range of socio-economic indicators discussed suggest the need for different government agencies to work together to reduce Māori inequalities. These may encompass Ministry of Education, Department of Building and Housing (and Housing New Zealand), Ministry of Social Development (and Work and Income), Ministry of Justice (including courts, police, probation), and also TPK as a starting point.

The TDHB allocates 3.4 percent of its funding to Māori-specific health services. Understanding and quantifying the Māori-specific contributions or actions of these other agencies would provide a better picture of what is being done to address inequalities, which would assist in identifying areas of focus that will bring about an equitable outcome for Māori and all New Zealanders.

However, Māori have to contribute to and participate more in the health sector if we are to improve Māori health outcomes. This includes participation in the health workforce, but also mobilising their considerable assets to address socio-economic conditions. The social structure of Māori and the collective ownership of the asset base within the region provide a collaborative framework from which to deliver on this.

The Challenge (BERL comment)

The challenge is to identify practical steps to address the inequalities and then to leverage off the strengths and assets of Māori and the region.

Some immediate areas we can suggest are around early education; the Iwi diaspora; and leveraging off a strong Taranaki economy.

The social and economic disparities are obvious and significant, and provide sombre reading. However, we note that the absolute numbers are not too daunting. And Taranaki Māori are well positioned to be able to address a number of these disparities.

The indicators, when expressed as percentages generally show the Māori social profile to be below the general population. However, it must be remembered that for Māori in Taranaki, these percentage differences are fractions of not very large numbers.

For example, in the Taranaki region the average number of Māori school leavers per year is about 400; and over a quarter of these leave with little or no formal attainment. If this 100 people per year was reduced to 30 per year this measure of education would be better for Taranaki Māori than for the New Zealand European population in Taranaki and New Zealand. There are 70 primary schools in Taranaki, so we are talking about one child per school per year.

The intervention for success may be needed over say three years from say age seven to age ten so that is assistance to an average of three students per school to make a significant difference. The need is presumably concentrated in some schools, but the point is, the number is not daunting.

Māori need to participate in and leverage off the Taranaki economy.

The fundamentals are that the economic future for the Taranaki region and for Taranaki Māori is bright if they can generate the skills to fully participate in, and drive the expansion of the economy to its potential.

An improvement in outcomes in education and skills training is usually associated with a virtuous cycle of improved employment, income, housing, lifestyle and consequently health outcomes. These can then feed back to education and income outcomes for the whanau and mokopuna.

The present skills status and other aspects of well-being of Taranaki Māori require attention. For example, there is a need to tackle issues around crime, lifestyles (nutrition and physical activity) and adult learning. But crucially important for the future is the fact that Taranaki Māori are a young population. Consequently improving educational and other outcomes for

the present children is essential to a strong future. Other areas of intervention could include parenting skills as well as reducing alcohol and drug abuse.

Taranaki Māori have a diaspora in New Zealand and elsewhere including influential people and people who doubtless could participate in positive initiatives. Within the region, Māori have a relatively large latent workforce. The Taranaki economy is desperate for skilled workers across a number of industries. We would suggest that Māori have an inherent advantage in land-based industries such as dairy but also oil and gas.

Māori have an opportunity and the capacity to meet a large portion of that need for workers in the Taranaki region. Add to that, Māori have a significant asset base from which to fund both social and economic initiatives in their own right, particularly if that asset base is leveraged through other social and business initiatives.

This report documents the social aspects that Taranaki Māori, especially adults, and their service providers need to address to lift social outcomes. What we suggest is that many of these outcomes can improve quite quickly if relatively small, positive and consistent interventions are applied to assist present and future cohorts of children and young people.

Māori Socio-economic Profile in the Taranaki Region

Tables

Figures

2 Introduction

This report was prepared for Te Whare Punanga Korero (TWPK) and the Taranaki District Health Board (TDHB) as an important contributor to our collective understanding of the socio-economic and health status of Taranaki Māori. The report provides a socio-economic picture of Māori in the Taranaki region.

A major objective of this report was to identify high level regional data that would be useful for developing the Māori health strategy for Taranaki. The information contained in this report is the latest available from public sources and TDHB administrative data.

2.1 Background

The overall aim of He Korowai Oranga (Māori Health Strategy) is Whanau ora – Māori families supported to achieve their maximum health and wellbeing. This requires an approach that recognises and builds on the integral strengths and assets of whanau.

The principles for meeting this aim are partnership, participation and protection; and the two broad directions for achieving the aim are:

> **Māori aspirations and contributions** – strengthening opportunities for whanau, hapu, iwi and Māori communities to contribute and have control over their own health and wellbeing; and
>
> **Government aspirations and contributions** – reducing health inequalities, ensuring accessible and appropriate services, and addressing social determinants of health.

This report contributes to the Māori health strategy from a regional perspective. It identifies and provides a situation analysis of Taranaki's Māori population across a range of indicators – social, economic, and wellbeing. This information feeds into the various pathways for action identified in He Korowai Oranga - whanau, hapu, iwi and community development, Māori participation, effective service delivery and working across sectors.

In particular, chapter 3 of this report provides a picture of Nga Iwi o Taranaki, which contributes to pathway one – the development of whanau, hapu, iwi and Māori communities.

Chapter 8, Māori health provision, contributes to pathway two – Māori participation in the health sector.

An accompanying report completed by BERL for Venture Taranaki/Tui Ora identified the Māori asset base and institutions and the key issues for progressing Māori economic development in the Taranaki region. By improving economic wellbeing, social wellbeing will also be improved, which will have direct effects on Māori health outcomes.

The socio-economic indicators and health outcomes identified in this report suggest that the region has a challenging task to achieve its aims and aspirations, both at a Māori and a government aspiration and contribution level. But, knowing where you are coming from makes it easier to work out how to get to where you want to go to.

A particular difficulty of any strategy is to understand the current situation from which to formulate a response, and then to measure the effectiveness of what you are doing. Identifying accurate and timely regional data broken down by ethnicity is a major constraint faced by all DHBs.

The report should be read in conjunction with the TDHB Health Needs Assessment 2007 (HNA 2007), which presents demographic information and indicators for the priority areas in the TDHB's District Strategic Plan (2005 to 2015) and successive District Annual Plans (2007/08, 2008/09, 2009/10). We have not attempted to replicate this information. However, we have added to the discussion by incorporating analysis out of the 2006/07 New Zealand Health Survey, which were released after the HNA 2007 was published.

2.2 Approach

It is accepted that there are causal links between health and ethnicity, income, and socio-economic status. By understanding the socio-economic status of Māori in the region, we will have better information on the health implications. In many cases, by addressing the socio-economic and cultural issues we can affect the heath outcomes.

The report starts by presenting a picture of Māori in the Taranaki region. It looks at the structure of iwi in the region and where they are based. As well it looks at participation in Māori culture through the medium of te reo Māori.

The report then provides basic demographics for Māori in the region such as total population, age breakdown, and population projections.

We then look at a number of socio-economic indicators such as deprivation, accessibility, housing, incomes, and education. In addition, we consider crime statistics as well as alcohol and drug abuse. The major source for most of the data is the 2006 Census. Other sources include the Ministry of Education, Ministry of Social Welfare, and other Statistics New Zealand datasets such as the Income Survey.

Next we look at key health indicators for the Taranaki region. Health indicators are taken from a number of sources, the main being the 2006/07 New Zealand Health Survey. Note that for information from the 2006/07 New Zealand Health Survey we have used the synthetic prediction tables, which provide only a crude prediction of gender and ethnic specific rates in each DHB. We emphasise that this limits their use as measures for programme evaluation as

gender and ethnicity are modelled as main effects only. However, it does provide a likely prevalence rate for the Māori subgroup living in the DHB[1].

Finally we look at the Māori health sector in the Taranaki region, identifying expenditure, institutions and Māori employment in health. The majority of this data is based on TDHB expenditure.

For household indicators, a Māori household is defined as any household with at least one person who identified as Māori.

As becomes evident in the statistics, there is a definite division between Māori and non-Māori across most socio-economic indicators and health indicators. While not proving any causality (or the direction of causality) it does suggest that there is a relationship between the two.

Further there is a disconnect between Māori health statistics and the expenditure and participation of Māori in the Māori health sector.

Results from a number of studies suggest that policies related to preventive social, economic, and behavioural interventions might well have a greater effect on reducing disparities than traditional medical interventions, even if as an unintended by-product. Therefore, when looking at solutions to health issues for Māori, there may be benefits in addressing some of the socio-economic conditions presented in this report.

[1] Under the assumption that the relationships between the subgroup and the whole population, as observed in the NZHS, are also reflected in the region. An explanation of how synthetic estimates are determined is included in the appendices.

3 Demographics – Māori Me Nga Iwi O Taranaki

Ethnicity plays a significant role in health inequalities in Taranaki as in the rest of New Zealand.[2] Generally, Māori are unwell for longer periods and die earlier than non-Māori, but have less access to health care. These disparities in overall Māori health persist even when confounding factors such as poverty, education and location are eliminated, demonstrating that culture is an independent determinant of health status.[3]

The population of Māori people living in Taranaki (15.2%) is similar to the rest of the country[4]. The Māori population is younger and is growing faster than the non-Māori population in the region. The proportion of Māori in the region and particularly in its working age population will increase over time. This has significant impacts on health service provision.

A growing Māori population requires an increase in services to provide preventative and early intervention strategies, particularly for young people. Conversely, the increase in the number of aged Māori in the future requires emphasis on prevention and early intervention to minimise demands on the health system.

The growing Māori labour market also provides an opportunity for targeting education and career pathways to increase Māori participation in the health workforce.

Around three quarters of Nga Iwi o Taranaki live outside the Taranaki region. The Māori population living in Taranaki is relatively evenly split between Māori who whakapapa to the region (57 percent) and Māori from outside the region (43 percent). This raises issues in terms of mobilising Māori resources and responses in the region.

3.1 Population

With 15,800 people, Māori make up around 15 percent of the Taranaki population. In the region there are eight iwi, the largest being Te Atiawa with over 12,800 people. The four largest iwi are based around Mt Taranaki.

Table 3.1 shows the resident and Māori resident population of the Taranaki region compared to New Zealand in 2006.

---

[2] The population in Taranaki is made up of Māori and European ethnicities. There is only a very small Asian and Polynesian population.

[3] Medical Council of New Zealand (2008). Best Health Outcomes for Māori: Practice implications (p7).

[4] Taranaki District Health Board Health Needs Assessment 2007

Table 3.1. Taranaki resident population, 2006

	Resident Population	Maori Population (numbers)	Maori Population (%)
Taranaki Region	104,124	15,798	15.2%
New Zealand	4,027,947	565,329	14.0%

Source: Census 2006

Compared to nationally, a slightly higher proportion of the Taranaki population identifies as Māori. Māori make up over 15 percent of the region's population compared to 14 percent nationally.

3.2 Population projections

The Taranaki population is projected to fall to 98,770 by 2026, a decline of six percent. However, the Māori population is expected to increase to 20,800, an increase of 19.9 percent. This means that, by 2026, Māori are expected to account for around 21.1 percent of the region's population, which is up from 15.2 percent in 2006.

Further, the Māori population in the region will increase faster in the younger age groups. By 2026, Māori are expected to account for 38.8 percent of those aged under 15 and 37.2 percent of those aged between 15 and 24.

This creates certain issues from a health perspective. There will be more Māori and younger children in the Taranaki health system going forward. Based on the current pattern of Māori health, this will place increasing pressure on the health system.

Table 3.2 shows the proportion of each age group to 2026 broken down by Māori and non-Māori.

Table 3.2. Population projections, % of total Taranaki population, Māori vs. non-Māori, 2008 to 2026

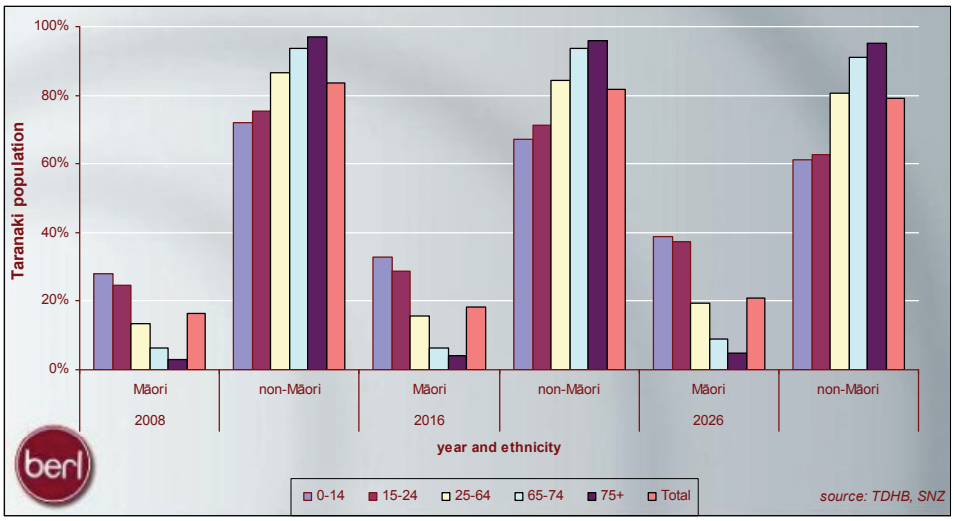
		0-14	15-24	25-64	65-74	75+	Total
2008	Māori	28.0%	24.5%	13.4%	6.3%	3.1%	16.5%
	non-Māori	72.0%	75.5%	86.6%	93.7%	96.9%	83.5%
2016	Māori	32.9%	28.6%	15.8%	6.5%	3.9%	18.3%
	non-Māori	67.1%	71.4%	84.2%	93.5%	96.1%	81.7%
2026	Māori	38.8%	37.2%	19.5%	8.8%	4.9%	21.1%
	non-Māori	61.2%	62.8%	80.5%	91.2%	95.1%	78.9%

source: TDHB, SNZ

Taranaki's Māori population is expected to increase from 16.5 percent of the population in 2008 to 21.1 percent of the population by 2026. The increase is even more marked in the younger age groups. In the 15 to 24 age group, the Māori population is expected to increase from 24.5 percent of the Taranaki population to 37.2 percent of the population in 2026.

Figure 3.1 provides a graphic representation of the table above.

Figure 3.1. Ethnic population estimates to 2026



The estimates are the medium projections of the Statistics New Zealand sub-national ethnic projections and were compiled in 2005. New estimates are expected to be released in late 2008. We have put in actual numbers for 2006.

The population is expected to reach just over 109,000 by 2011, before falling back to 108,000 in 2016. However, the Māori population is expected to increase over the period, from 15,800 in 2006, to 18,800 in 2016. The non-Māori population is expected to fall from 2011 to 2016 by 2,000 people.

BERL would like to stress that this projection is an estimate only based on a scenario of medium growth, and could potentially change when new estimates are released later this year. For example, the actual 2006 Census numbers (which we have included in the table) are lower than the 2006 estimates. Further, our own analysis of the labour requirements in the Taranaki region suggests that there is an opportunity for the region to increase its population at a much faster rate than historically.

Regardless of methodology, the important fact is that the Māori population as a proportion of the total population and the workforce in the Taranaki region will increase over time.

3.3 Age

Consistent with the national trend, Māori in Taranaki have a much younger age profile than the Taranaki population as a whole. Over 60 percent of Taranaki Māori are under the age of 30 compared to only 36 percent of for the Taranaki region.

The age profile of Māori is compared to the region as a whole in Table 3.3.

Table 3.3. Taranaki Region age profile, 2006

	Taranaki	age as a % of total	Taranaki Maori (number)	age as a % of total (Maori)	Maori % of age group
14 yrs and under	22,674	21.8%	5,667	35.9%	25.0%
15 to 29 yrs	18,540	17.8%	3,864	24.5%	20.8%
30 to 64 yrs	47,499	45.6%	5,526	35.0%	11.6%
65 yrs and over	15,414	14.8%	735	4.7%	4.8%
Total	104,124	100.0%	15,798	100.0%	

Source: Census 2006

Close to 36 percent of Māori are under the age of 15. The following graphs illustrate the significance of the Māori age profile in the Taranaki region.

Figure 3.2. Taranaki Māori and non-Māori age profile, 2006

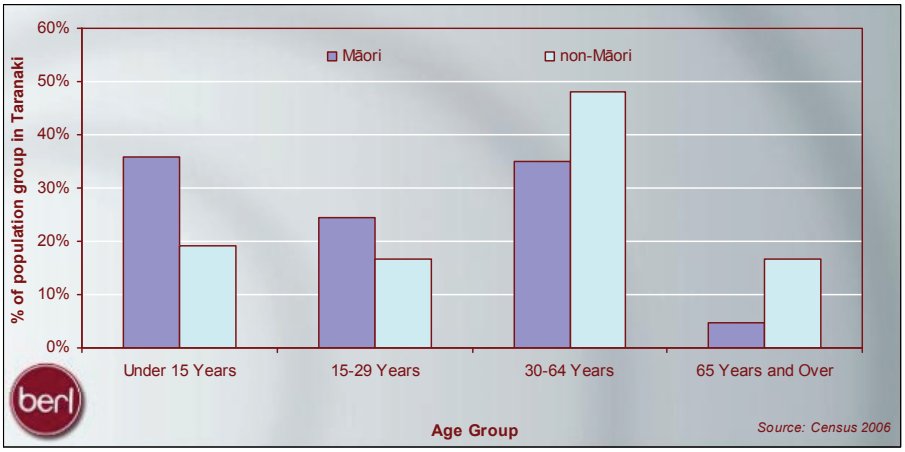
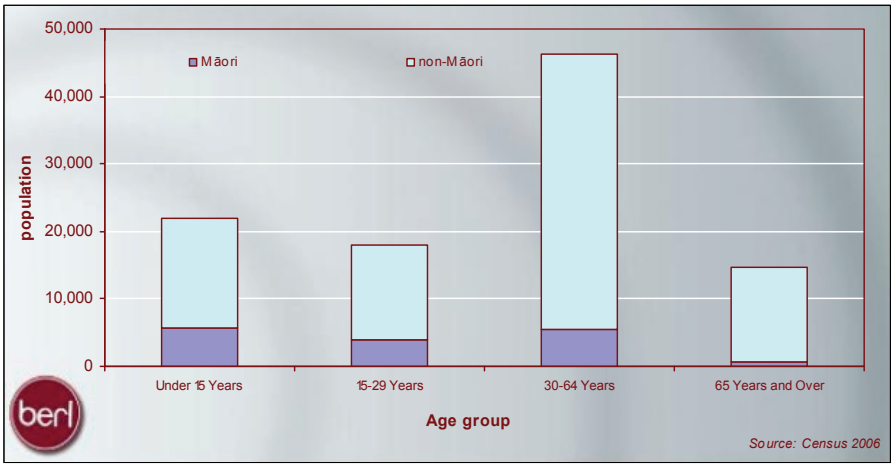


Figure 3.3 shows that Māori have a much younger age profile than non Māori. This is especially so in the under 15 and over 65 age-groups.

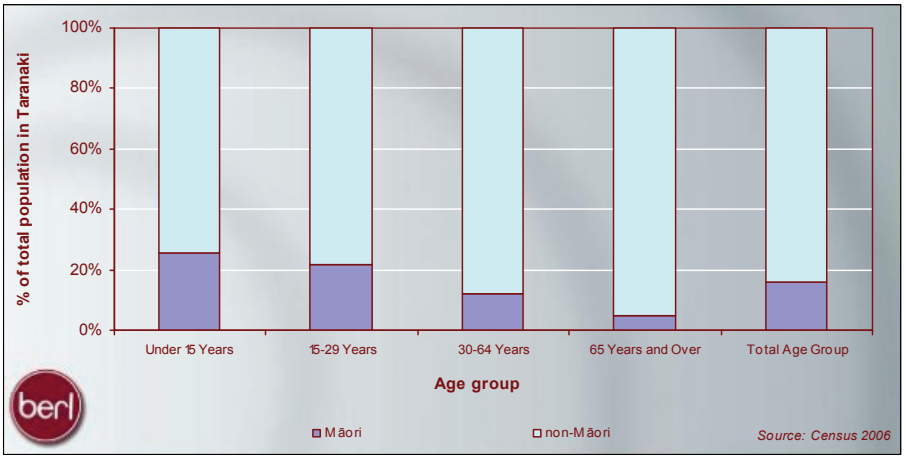
Thus, even though Māori make up only 15 percent of the region's population, they make up a much larger proportion of the younger age groups. This is shown in Figure 3.3 (the absolute contribution to each age group) and Figure 3.4 (the proportional contribution to each age group).

Figure 3.3. Taranaki region Māori and non-Māori, age groups, 2006



As we progress through the age groups, Māori proportion of that age group decreases. Māori account for 25 percent of those under 15 years, 21 percent of those between 15 and 29 years, 12 percent of those between 30 and 64 years of age, and only 5 percent of those over 65 years.

Figure 3.4. Taranaki Māori and non-Māori, % of age groups, 2006



3.4 Iwi

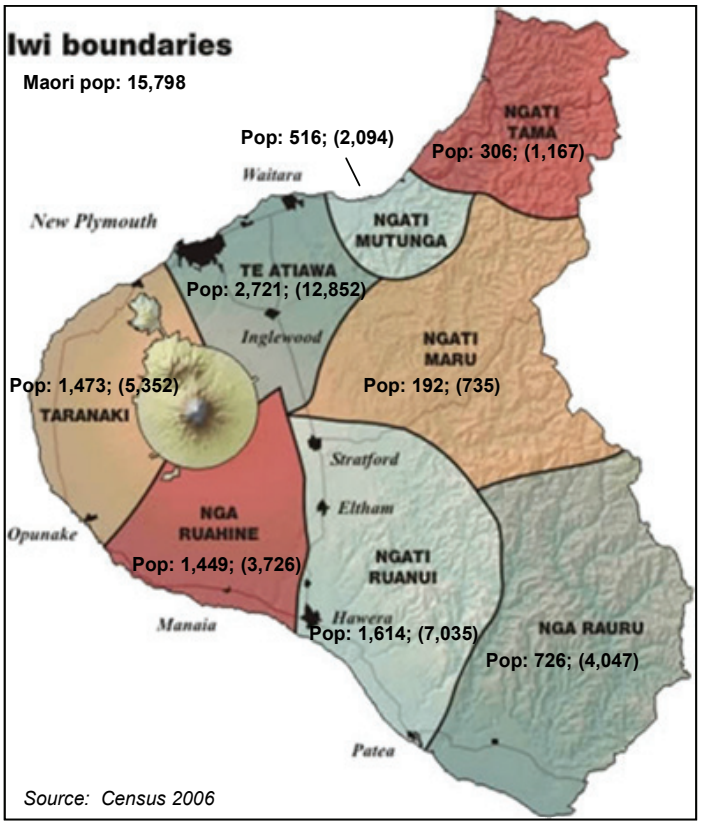
There are eight iwi in the Taranaki region made up of over 50 hapu. Iwi range in size from 2,720 members down to 192 members (for those resident in the region) and from 12,900 members down to 735 members (total iwi members).

Over 37,000 Māori in New Zealand associate with Nga Iwi o Taranaki. This is over twice the size of the actual Māori population in the Taranaki region of 15,800.

Conversely, Māori who whakapapa to Nga Iwi o Taranaki account for 57 percent of Māori living in the Taranaki region (around 9,000 people). Close to 43 percent of Māori in the Taranaki region are associated with an iwi outside of Taranaki.

Figure 3.5 shows the iwi boundaries and populations. The population includes the total iwi (in brackets) and the number of iwi living in the Taranaki region.

Figure 3.5. Nga Iwi o Taranaki



Te Atiawa is based around the main urban area of New Plymouth as well as Waitara and Inglewood. They have a total population of 12,852, with 2,721 living in the Taranaki region.

Within the Ngati Ruanui boundaries are Hawera, Stratford, Eltham, and Patea. Ngati Ruanui has at total population 7,035, with 1,614 of those living in the Taranaki region.

Nga Rauru, Ngati Tama, and Ngati Maru are based up the eastern flank of Taranaki, providing a link between the Taranaki and Wanganui regions. Together, they have a population of around 6,000, with 1,224 of them living in the Taranaki region.

The Taranaki iwi is based on the west coast of the region and includes the townships of Opunake and Okato. They have a total population of 5,352, with 1,473 of those living in the Taranaki region.

Nga Ruahine is based around Manaia on the southern coast of the Taranaki region. They have a total population of 3,726, with 1,449 of them living in the Taranaki region.

Ngati Mutunga is based in Urenui, approximately 30 kilometres north of New Plymouth. They have a total population of 2,094 of which 516 live in the Taranaki region.

Most iwi in the region are an amalgamation of a number of hapu. Table 3.4 shows the hapu that make up each iwi.

Table 3.4. Hapu in Nga Iwi o Taranaki

Taranaki Iwi	Taranaki Hapu
Taranaki	Ngā Māhanga, Ngāti Haumia, Ngāti Haupoto, Ngāti Kahumate, Ngāti Moeahu, Ngāti Tairi, Ngāti Tamarongo, Ngāti Tara, Ngāti Tuhekerangi
Ngati Tama	
Ngati Mutunga	
Te Atiawa (Taranaki)	Manukorihi, Ngāti Rāhiri, Ngāti Te Whiti, Otaraua, Pukerangiora, Puketapu
Ngati Maru (Taranaki)	
Ngaruahine	Araukūku, Okahu-Inuāwai, Kanihi-Umutahi, Ngāti Haua, Ngāti Manuhiakai, Ngāti Tu, Ngati Tamaahuroa me Titahi
Ngati Ruanui	Ahitahi, Araukūku, Hāmua, Hāpōtiki, Ngā Ariki, Ngāti Hawe, Ngāti Hine, Ngāti Kōtuku, Ngāti Ringi, Ngāti Tākou, Ngāti Tānewai, Ngāti Tūpaea, Ngāti Tūpito, Rangitāwhi, Tuatahi, Tūwhakaehu
Ngaa Rauru Kiitahi	Hine Waiata, Hine Waiatarua, Kairakau , Manaia, Ngā Ariki, Ngāti Hine, Ngāti Hou Tipua, Ngāti Iti Ngāti Maika I, Ngāti Maika II, Ngāti Pourua, Ngāti Pūkeko, Ngāti Ruaiti, Ngāti Tai, Pukorokoro, Rangitāwhi, Tamareheroto

source: Te Kahui Mangai

There are over 50 hapu represented in Nga Iwi o Taranaki. Ngaa Rauru Kiitahi and Ngati Ruanui are made up of a large number of hapu.

There are 42 marae in the Taranaki region. These are listed in the following table broken down by iwi.

Table 3.5. Nga iwi o Taranaki marae

Taranaki Iwi	Taranaki Marae
Taranaki	Tarawainuku; Orimupiko; Te Potaka; Okorotua; Parihaka Pa;Te Paepae ;
Ngati Tama	Pukearuhe
Ngati Mutunga	Urenui
Te Atiawa (Taranaki)	Owae; Mangaemiemi; Kairau; Muru Raupatu
Ngati Maru (Taranaki)	Pukehou
Ngaruahine	Ngarongo; Aotearoa; Te Rangatapu; Mawhitiwhiti; Tawhitinui; Te Aroha o Titokowaru; Oeo; Waiokura; Okare
Ngati Ruanui	Whakaahurangi; Ketemarae (Ngarongo); Ngatiki; Taiporohenui; Meremere; Mokoia; Ararata; Pariroa; Whenuakura; Manutahi (Te Takere); Wharepuni; Wai o Turi
Ngaa Rauru Kiitahi	Hine Waiata; Hine Waiatarua; Kairakau; Manaia; Nga Ariki; Ngati Hine; Ngati Hou Tipua; Ngati Iti; Ngati Maika I; Ngati Maika II; Ngati Pourua; Ngati Pukeko; Ngati Ruaiti; Ngati Tai; Pukorokoro; Rangitawhi; Tamareheroto

The majority of marae are in the southern part of the region across four iwi areas (Taranaki, Ngaruahine, Ngati Ruanui and Ngaa Rauru Kiitahi).

Understanding Māori is important when designing interventions, particularly around workforce issues. The approach to engage Māori is likely to differ between local Māori (who may tend to close ranks around ahi kaa) and those who are from outside the region.

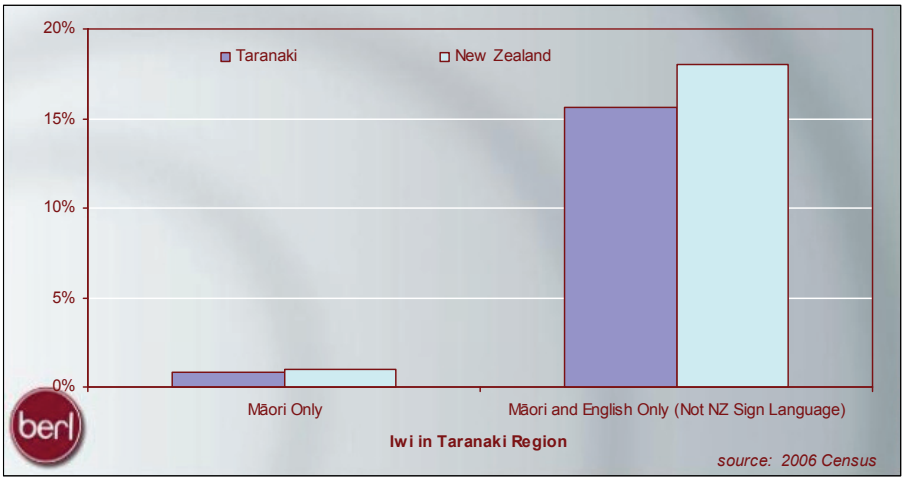
Further, with over two thirds of Māori who whakapapa to the Taranaki region living outside the region, there are also opportunities for engaging or attracting those home. At the same time there are issues around retention of Taranaki tikanga.

3.5 Te reo Māori[5]

Of those that speak one language in Taranaki, 4.1 percent can hold a conversation in Māori. This is slightly lower than the 4.2 percent nationally.

However, when looking at Māori specifically, the proportion is a lot higher. Figure 3.6 shows the proportion of Māori belonging to Nga iwi o Taranaki that can hold a conversation in Māori.

Figure 3.6. Iwi by official language indicator, 2006



15.6 percent of Māori of Taranaki iwi descent can hold a conversation in both Māori and English while a further 0.8 percent can only hold a conversation in Māori. This gives a total proportion of Māori that can hold a conversation in te reo Māori at 16.4 percent.

This is lower than nationally, where a total of 19 percent of Māori of iwi descent can hold a conversation in te reo Māori.

[5] This analysis of te reo Māori is at the iwi rather than the geographic level. Iwi can live within the Taranaki region or elsewhere in New Zealand. For our purposes we therefore focus on Nga iwi o Taranaki that live in the Taranaki region. The analysis therefore does not include Māori who live in the Taranaki region who do not associate with Nga iwi o Taranaki.

4 Socio-economic Indicators

This section presents Māori socio-economic indicators. It provides an indication of how Māori in Taranaki are doing compared to the rest of the population in the Taranaki region. There is a link between socio-economic disadvantage and poor health.

New Zealand studies have shown that Māori have less access to medical care and rehabilitation services, and lower injury claim rates when compared with non-Māori. Even though Māori turn up for GP appointments at the same rate as non-Māori, they obtain fewer diagnostic tests, less effective treatment plans, and are referred for secondary or tertiary procedures at significantly lower rates than non-Māori patients.[6]

The first measure, the deprivation index, combines nine socio-economic indicators into an index of deprivation by area. We then look at some more specific socio-economic indicators such as access to telecommunications, transport, and housing.

4.1 Deprivation index

The deprivation index is a measure across eight dimensions[7] of deprivation at a meshblock level. The scale of deprivation from 1 to 10 divides New Zealand into tenths of the distribution. For example, a value of 10 indicates that the meshblock is in the most deprived 10 percent of areas in New Zealand, according to the New Zealand Deprivation 2006 scores.

The nine variables measured include people:

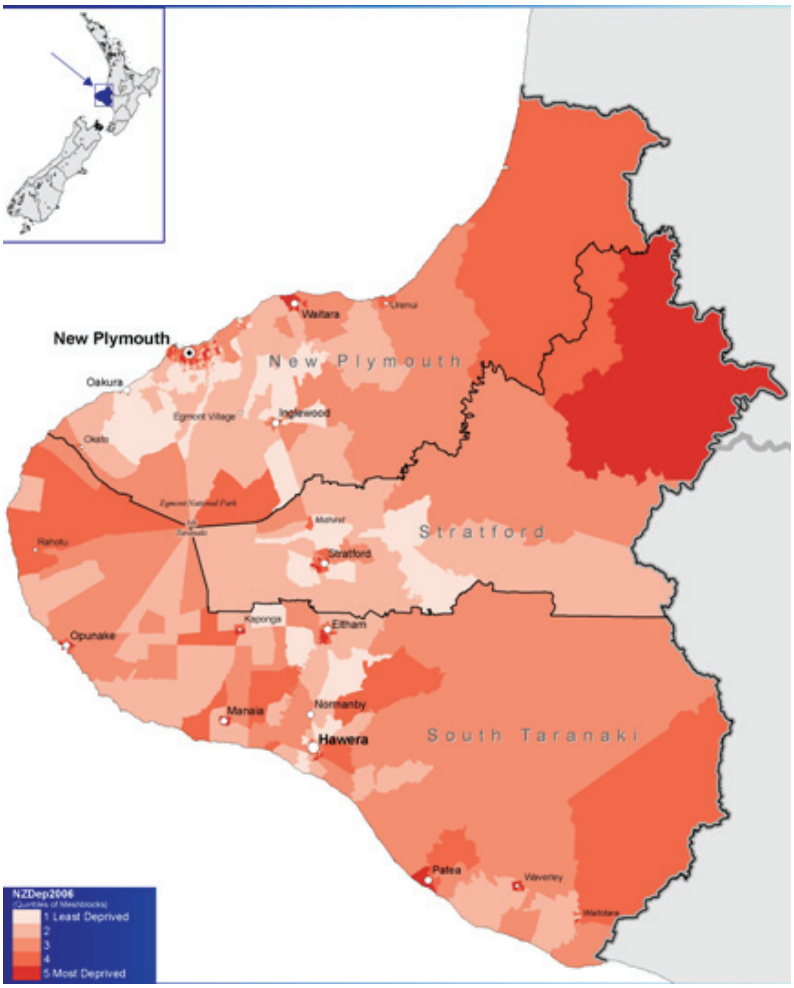
- aged 18-64 receiving a means tested benefit;
- living in equivalised households with income below an income threshold;
- not living in own home;
- aged <65 living in a single parent family;
- aged 18 to 64 unemployed;
- aged 18 to 64 without any qualifications;
- living in equivalised households below a bedroom occupancy threshold;
- with no access to a telephone;
- with no access to a car.

[6]Medical Council of New Zealand (2008). Best Health Outcomes for Māori: Practice implications (p7).

[7] The eight dimensions covered are income, owned home, support, employment, qualifications, living space, communication and transport.

A deprivation index map of the Taranaki region is presented in Figure 4.1

Figure 4.1. Taranaki Social Deprivation Index 2006 map

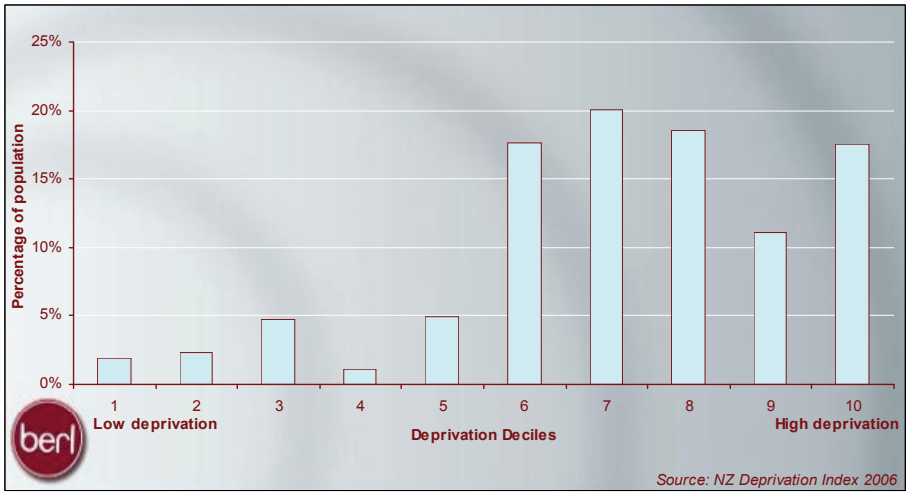


Source: Department of Labour

The lighter shades suggest lower levels of deprivation, whereas the darker shades suggest higher deprivation levels. There is a high deprivation area on the north-eastern border of the Taranaki region. From this we can see that the areas that have the most deprived NZDep scores tend to be where there is a relatively higher Māori population.

The deprivation index for the Taranaki region in 2006 is shown in Figure 4.2.

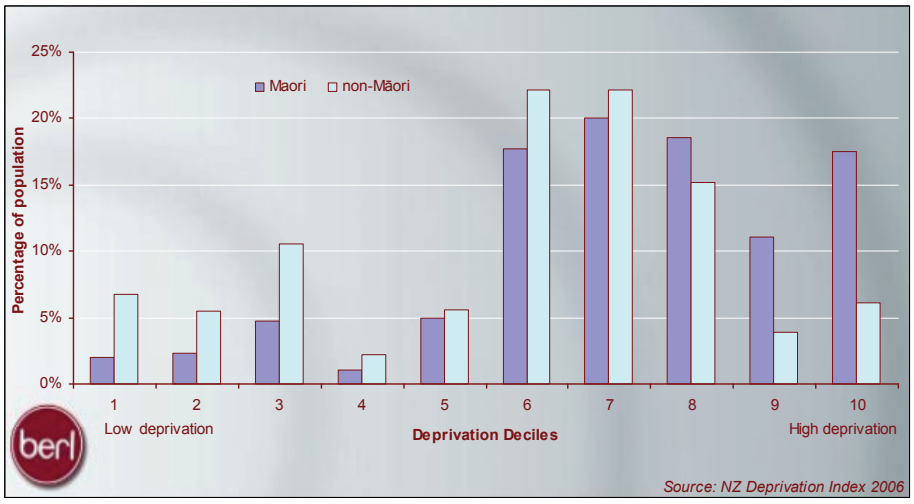
Figure 4.2. Deprivation Index for Taranaki DHB region, 2006



The index suggests that, in the Taranaki region, there are a larger proportion of people living in meshblock areas of higher deprivation relative to New Zealand. The majority of the population are in deprivation deciles 6, 7, 8 and 10. Only a small proportion of the population in Taranaki lives in deciles, 1, 2 and 4.

This analysis becomes even starker when comparing Māori and non-Māori in the Taranaki region.[8] This is shown in Figure 4.3, which compares Māori and non-Māori deprivation.

Figure 4.3. Deprivation Index, Māori and non-Māori in Taranaki DHB region, 2006



Māori make up a significantly higher proportion of Taranaki residents in deprivation deciles 8, 9 and 10. In decile 10 especially, there is a much higher proportion of Māori population. Conversely in deciles 1 to 4, the proportion of non-Māori is much higher.

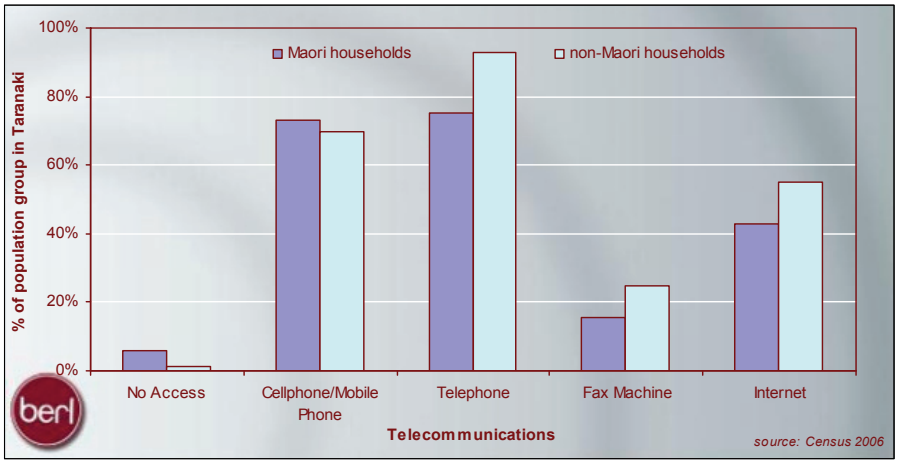
[8] We had Māori and non-Māori populations for each area unit in the region. By multiplying the number of people in each ethnic group living in each area by the decile in each area, we were able to estimate overall proportions of each ethnic group living in each decile.

This suggests that Māori in Taranaki, in general, tend to make up a significantly higher proportion of the deprived areas of the Taranaki region.

4.2 Access to telecommunications

Figure 4.4 compares Māori and non-Māori households' access to telecommunications for Taranaki.

Figure 4.4. Access to Telecommunications in Taranaki region, Māori and non-Māori, 2006

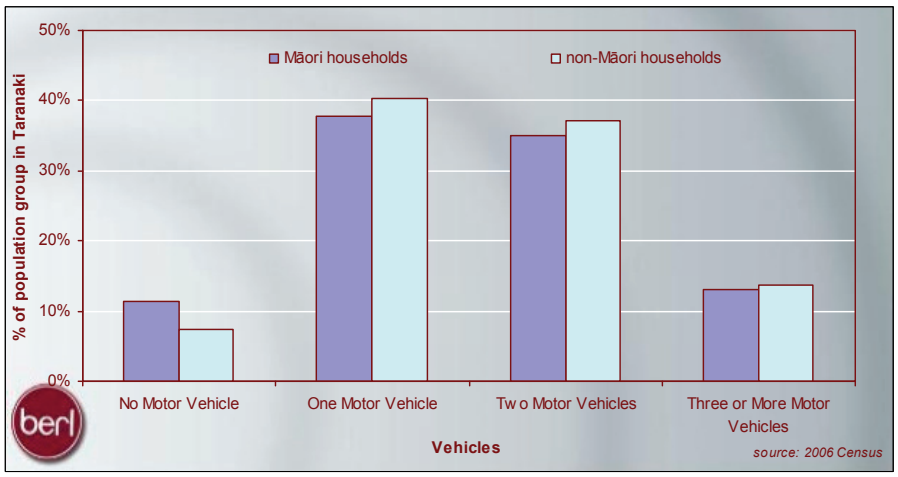


Māori households are more than twice as likely to have no access to telecommunications and are less likely to have access to a telephone, the internet or a fax machine. However, they are more than likely to have access to a cellphone.

4.3 Access to transport

Figure 4.5 shows access to a motor vehicle in Taranaki broken down by Māori and non-Māori in 2006.

Figure 4.5. Access to a motor-vehicle in Taranaki region, Māori and non-Māori households, 2006



In Taranaki, Māori households are more likely than non-Māori households to have no access to a motor vehicle. Similarly, Māori households are less likely than non-Māori to have access to one or more than one motor vehicle.

4.4 Housing

Housing is a core component of social infrastructure and has a major influence on the 'well-being' of households, contributing to the quality of individual and community life. There are strong relationships between housing outcomes and other aspects of well-being: health, education and training, labour market participation, and family stability, among others.

A number of New Zealand studies demonstrate a link between the quality of housing and health outcomes. This link is not about the type of tenure but about the quality of housing. Quality, in turn, is related to income, with higher income earners generally able to attain high-quality housing.

The Wellington School of Medicine, in conjunction with Housing New Zealand is undertaking a five year study on housing, crowding and health in an effort to understand how housing affects health. A good background on research related to housing and health is available on the University of Otago website.[9]

In terms of housing data for this report, we compare Māori to non-Māori households in Taranaki across three measures: tenure, household size, and crowding.

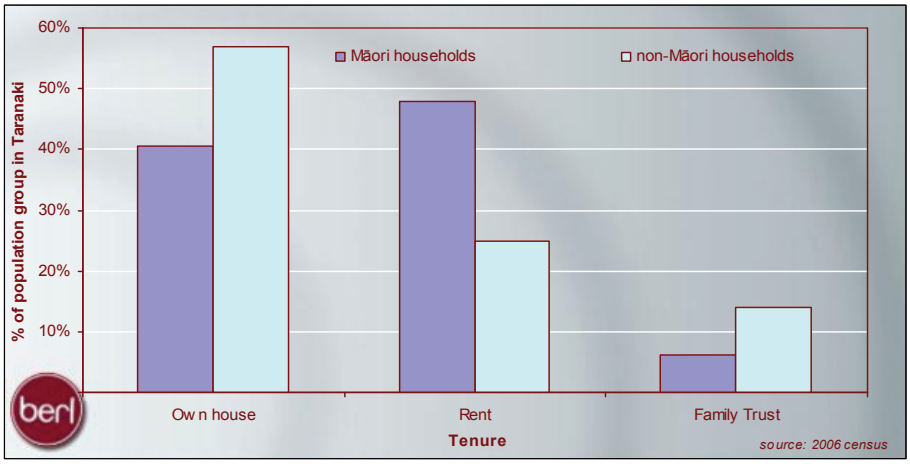
4.4.1 Tenure

Maani, Vaithianathan and Wolfe (2006), show a link between health outcomes and the quality of housing, with people living in crowded dwellings achieving substantially poorer health outcomes. The report suggests that income is the key driver of crowding and therefore poorer health outcomes.

Figure 4.6 compares Māori and non-Māori in Taranaki by tenure type in 2006. The graph compares three tenure types: own your own home (with or without a mortgage), rent, and family trust and other (with or without payment).

[9] www.otago.ac.nz/wsmhs/academic/dph/research/housing/crowding.html

Figure 4.6. Tenure type in Taranaki region, Māori and non-Māori households, 2006

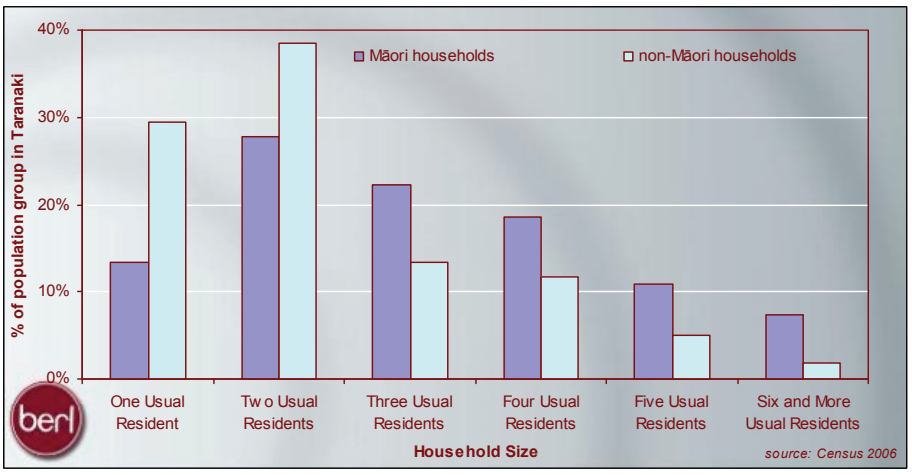


Māori in Taranaki are more likely to rent rather than own their own home. Only 41 percent of Māori in the region own their own home compared to 57 percent of non-Māori. Non-Māori are also twice as likely to use a family trust to own their home.

4.4.2 Household size

Figure 4.7 compares the number of people per household for Māori and non-Māori in the Taranaki region in 2006.

Figure 4.7. Household size in Taranaki region, Māori and non-Māori, 2006



Māori tend to have more people living in each household, with a higher proportion in each of the categories including and after three usual residents. The more residents there are per household, the greater the gap between Māori and non-Māori. For example, households with six or more usual residents accounts for 7.3 percent of Māori households but only 1.9 percent of non-Māori households.

4.4.3 Crowding

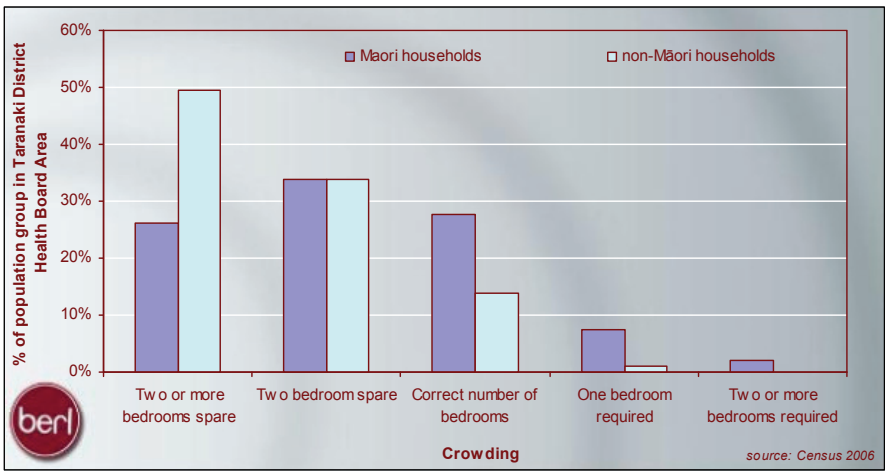
Baker et al. (2006) suggest that overcrowding is associated with elevated rates of hospital admissions for both communicable and non-communicable diseases, while Saville-Smith and Amey (1999) show that overcrowding is an important factor in health outcomes in rural locations as well as in towns.

Crowding is measured by the Canadian National Occupancy Standard, which sets the bedroom requirements of a household according to set composition criteria. In the Canadian model, households are considered over crowded where the following standard cannot be met:

> there should be no more than two people per bedroom
>
> children less than 5 years of age of different sexes may reasonably share a bedroom
>
> children 5 years or older of the opposite sex should not share a bedroom
>
> children less than 18 years of age and of the same sex may reasonably share a bedroom. Household members 18 years of age or over should have a separate bedroom, as should parents or couples.

Figure 4.8 shows the household crowding index for Māori and non-Māori households in Taranaki in 2006.

Figure 4.8. Household crowding index, Māori and non-Māori in Taranaki, 2006.



It is clear from the chart that Māori households are more likely to be overcrowded than non-Māori households. Around 10 percent of Māori households in the Taranaki region are living in overcrowded conditions.

5 Education, Incomes and Employment

This chapter describes key education, income and employment indicators for Taranaki Māori compared to non-Māori. Generally, Māori incomes are lower than non-Māori incomes in the Taranaki region.

It is well accepted that education is positively related to health although there is less agreement as to the explanation of this relationship and the direction of causality. Education also has a positive relationship with incomes and employment.

The literature argues that incomes are related to health outcomes. However, after a certain point (income level) the relationship between incomes and health wanes.

The more pertinent relationship is between income distribution and health, where the more uneven the income distribution, the worse the health outcomes, particularly mortality rates.

5.1 Education

This section looks at attendance at Kohanga Reo and Māori medium education in the Taranaki region. It then compares educational attainment of Māori and non-Māori in Taranaki and New Zealand.

5.1.1 Kohanga Reo

According to the Ministry of Education's early childhood directory, in 2007 there were 16 Kohanga Reo registered in the Taranaki region.[10] There were four Kohanga Reo in Hawera; two each in Waitara, New Plymouth, and Patea; and one each in Inglewood, Stratford, Karamea, Manaia, Waverly, and Opunake.

Of the 4,605 children enrolled in an early childhood centre in Taranaki on July 31 2007, 341 (7.4 percent) were enrolled in a Kohanga Reo.

There is also a Māori-based Education and Care centre run out of New Plymouth with a roll of 24.

5.1.2 Māori medium education

Māori medium education programmes involve students being taught either all or some curriculum subjects in the Māori language, either in immersion (Māori language only) or

[10] Note that there are a number of Kohanga Reo and other Māori-based early childhood centres that are not registered.

bilingual (Māori and English) programmes. There are four immersion levels defined by the proportion of teaching done in te reo Māori. These are:

Level 1: 81-100 percent immersion

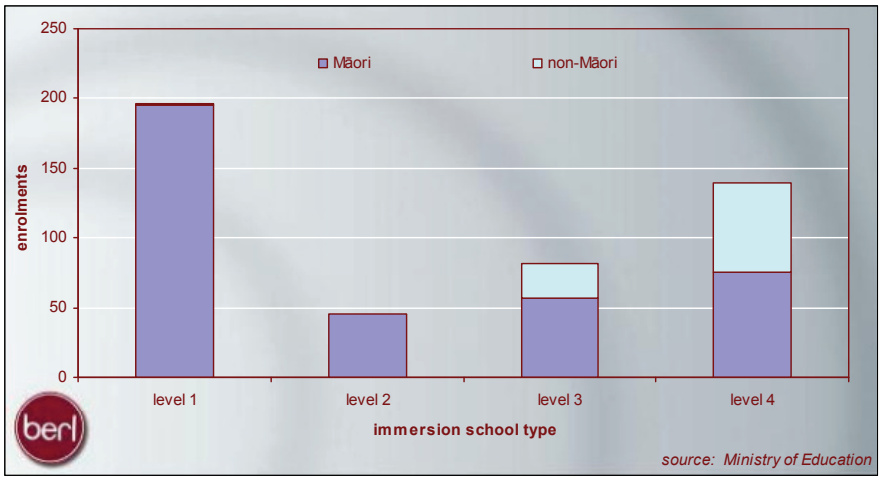
Level 2: 51-80 percent immersion

Level 3: 30-50 percent immersion

Level 4: up to 30 percent immersion.

There were a total of 459 enrolments in Māori immersion schools in Taranaki as at July 1 2006. Of these, 372, or 81 percent were Māori. Taranaki enrolments in Māori immersion schools are shown in Figure 5.1.

Figure 5.1. Enrolments in Māori immersion schools in Taranaki, 1 July 2006



There were 196 enrolments at level 1 Māori immersion schools, with Māori accounting for 195 of these. Level 1 schools accounted for 53 percent of all Māori enrolments at Māori immersion schools.

Level 4 immersion schools were the next most popular. They had a total of 139 students, of which 75 were Māori.

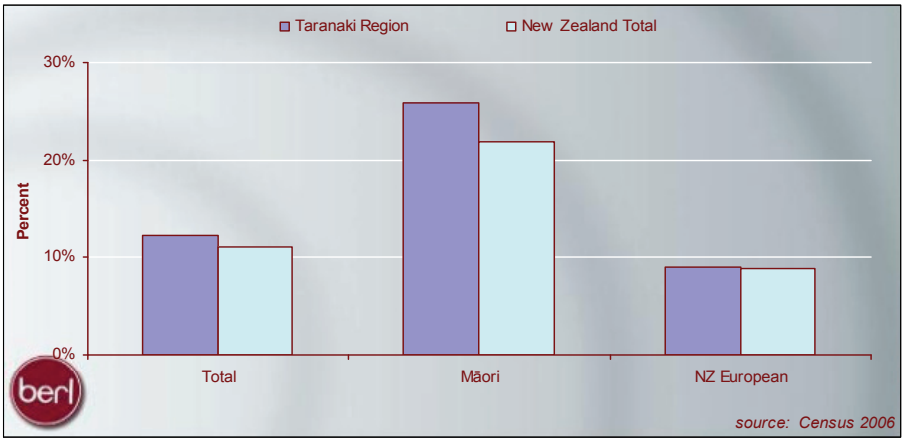
5.1.3 Educational attainment

A higher proportion of Māori than non-Māori leave school with little or no formal attainment and a lower proportion of Māori complete school than non-Māori.

Further, these differences are even higher in the Taranaki region than they are nationally.

This is a significant issue as educational attainment is positively linked to income as well as health outcomes.

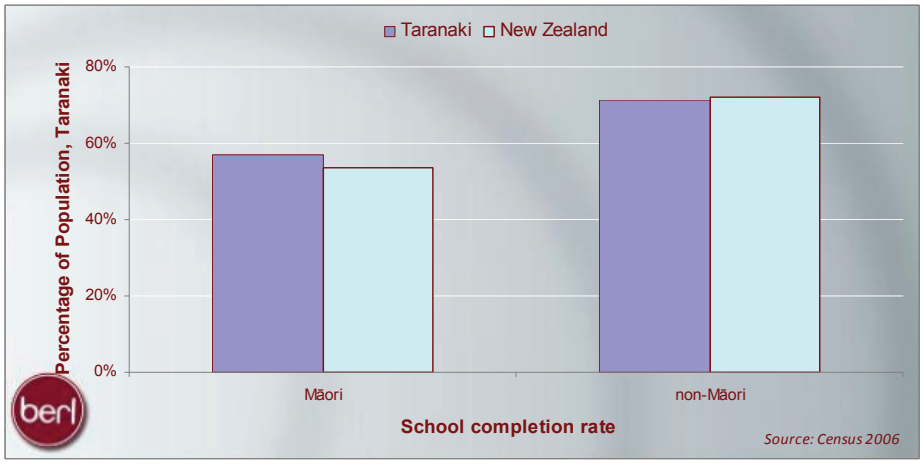
Figure 5.2. Percentage of school leavers with little or no formal attainment, Māori and New Zealand European in Taranaki and New Zealand, 2006



In Figure 5.2, 26 percent of Māori in the Taranaki region leave school with little or no formal attainment compared to only nine percent of New Zealand European school leavers. The Taranaki Māori figure of 26 percent was also higher than the national Māori figure of 22 percent.

This is supported in the following graph (Figure 5.3), which shows the school completion rate by proportion of population.

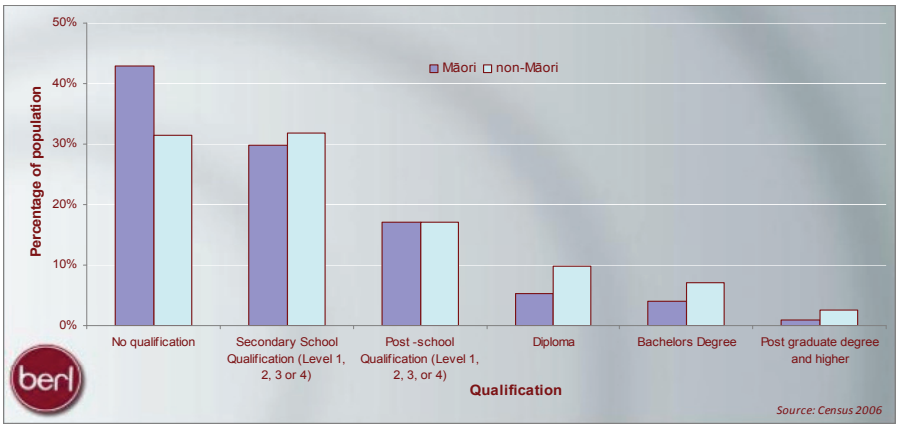
Figure 5.3. School completion by proportion of population, Māori and non-Māori in Taranaki and New Zealand, 2006



Only 57 percent of the Taranaki Māori population had completed secondary school compared to 71 percent of non-Māori. The proportion for Taranaki Māori is slightly higher than Māori nationally, while the proportion for Taranaki non-Māori is slightly lower than non-Māori nationally.

This then flows through to tertiary education. Figure 5.4 shows the educational attainment of Māori and non-Māori in the Taranaki region in 2006.

Figure 5.4. Educational attainment for Māori and non-Māori in Taranaki, 2006



Looking at educational attainment there is definite disparity between Māori and non-Māori in the Taranaki region. A significantly higher proportion of Māori have no qualifications compared to non Māori and this trend continues and then reverses, when by postgraduate degree less than half as many Māori have achieved that attainment compared to non-Māori. The turning point is post-school qualifications, where Māori and non-Māori in Taranaki have a similar proportion of their populations.

5.2 Incomes

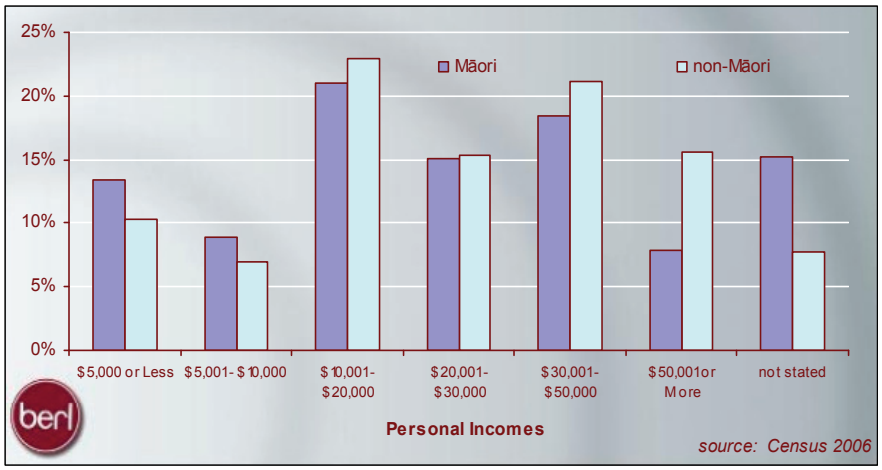
This section compares personal incomes and weekly incomes for Māori and non-Māori in Taranaki.

Disposable income determines the income available for health services and access to health services. Māori in Taranaki tend to have lower incomes than non-Māori

5.2.1 Personal income

Figure 5.5 compares Māori and non-Māori incomes in Taranaki in 2006 broke down by income bands.

Figure 5.5. Personal incomes Taranaki Māori and non-Māori, 2006



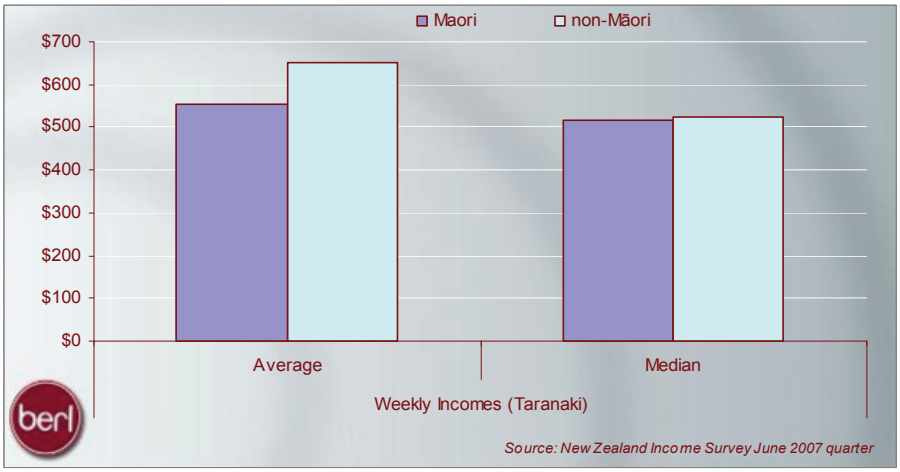
A higher proportion of Māori in the Taranaki region are on lower incomes, particularly those earning less than $10,000. At the other end of the scale, the proportion of non-Māori earning $50,000 plus is twice that of Māori.

A large proportion of Māori also do not state their personal earnings.

5.2.2 Weekly income

While the average income for non-Māori is higher than for Māori in Taranaki, the median incomes are roughly the same. This is shown in Figure 5.6.

Figure 5.6. Weekly average and median incomes, Māori and non-Māori in Taranaki, June 2007 quarter



The average weekly income for Māori in Taranaki is $553 compared to $651 for non-Māori. The median incomes for both groups are similar at $516 and $524 respectively.

More importantly, the Māori average income is only seven percent higher than the Māori median income whereas the non-Māori average is 24 percent higher than the non-Māori median income.

5.3 Sources of income

Incomes can come from a range of sources, namely, wages and salaries, self employment, investments, superannuation, and benefits.

Figure 5.7 shows the proportion of incomes from each main source for Māori and non-Māori in Taranaki in 2006.

Figure 5.7. Sources of income for Māori and non-Māori in Taranaki, 2006

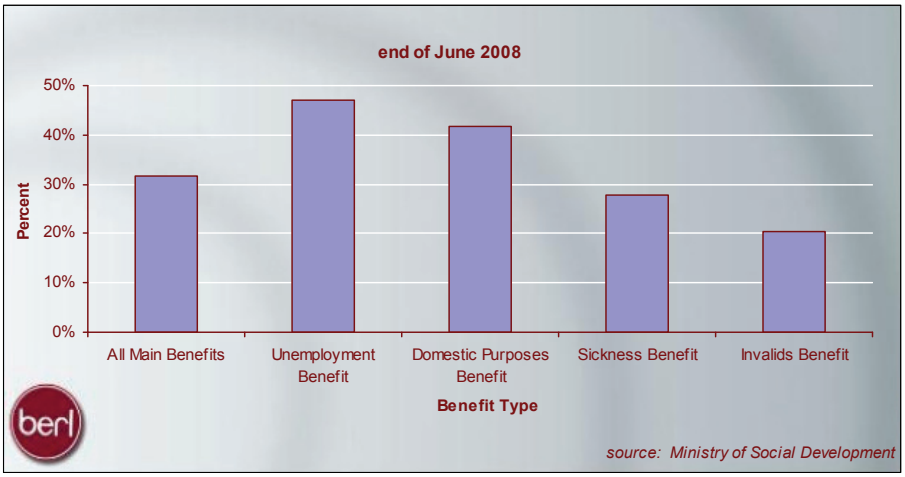
A greater proportion of the Māori population collects income from wage and salary and benefits, whereas for non-Māori a greater proportion receives incomes through self employment and investments.

More than twice the proportion of Māori (27 percent) are on benefits compared to non-Māori (10 percent). Conversely more than three times the proportion of non-Māori receives income from investments (18 percent) than Māori (6 percent).

5.3.1 Benefits

Taking the latest benefits data from the Ministry of Social Development, of the 6,501 working-aged recipients of income tested benefits as at June 30 2008, 31.6 percent (2,054) were identified as Māori. This is shown below in Figure 5.8.

Figure 5.8. Māori on Benefits as at 30 June 2008



Of the 445 recipients of the Unemployment Benefit, 47 percent (209) identified as Māori

Of the 2,410 recipients of the Domestic Purposes Benefit, 41.5 percent (1,005) identified as Māori

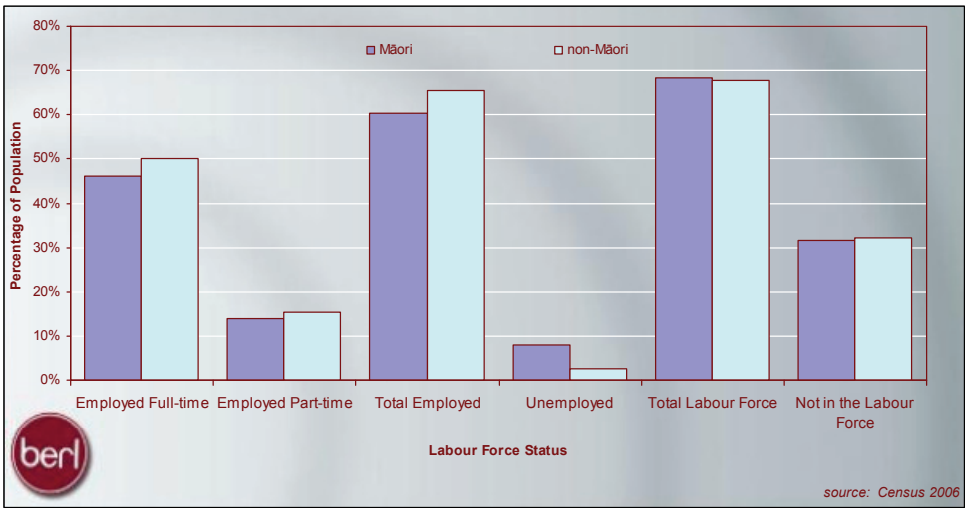
Of the 819 recipients of Sickness Benefit, 27.2 percent (228) identified as Māori

Of the 2,547 recipients of Invalids Benefit, 20.4 percent (522) identified as Māori.

5.3.2 Workforce status

Figure 5.9 shows the status of the Taranaki workforce in 2006 broken down by Māori and non-Māori. The first two sets of columns, employed full time and employed part time, combine to give the total employed figure in the third set of columns. Adding the unemployed columns give the total labour force in the fifth set of columns. The working age population is made up of the total labour force and last column, not in the labour force, which is made up of those of working age (>15 years) who are neither employed nor looking for work.

Figure 5.9. Workforce Status by Māori and non-Māori in Taranaki, 2006

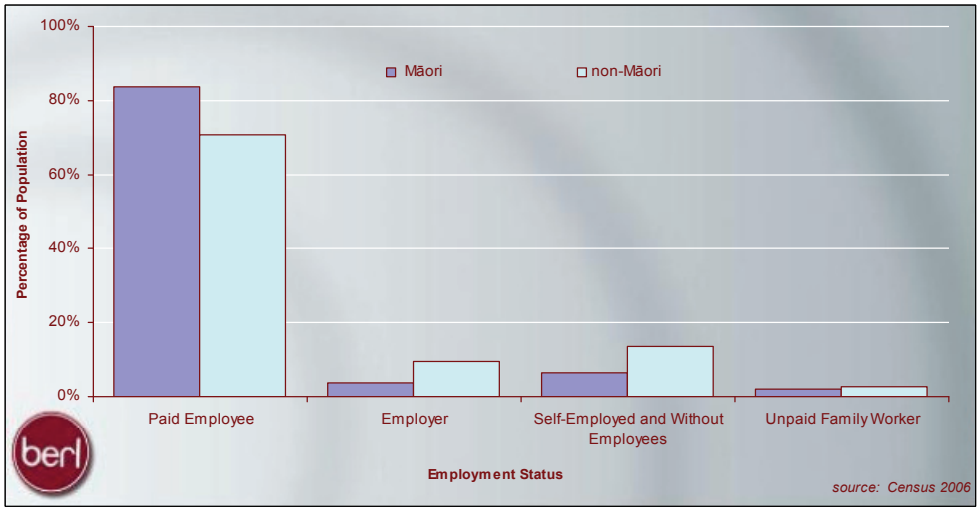


A slightly higher proportion of Māori are in the total labour force. However, a smaller proportion of these are actually employed. The remainder are unemployed, which accounts for 8 percent of the Māori working age population but only 2.5 percent of non-Māori.

5.3.3 Employment status

Figure 5.10 shows the employment status of those employed in Taranaki broke down by Māori and non-Māori.

Figure 5.10. Employment Status, Māori and non-Māori in Taranaki, 2006

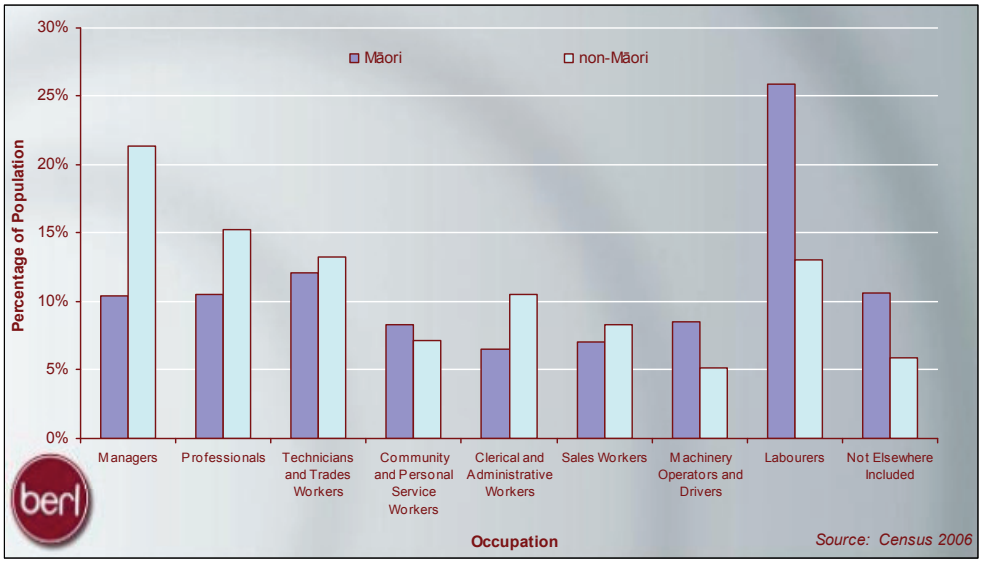


The majority of employed are paid employees followed by self-employed and then employers. The smallest group is unpaid family worker. Māori make up a higher proportion of paid employees, whereas non-Māori make up a higher proportion of self employed and employers.

5.4 Occupations

Figure 5.11 shows the occupations of the Māori and non-Māori populations in the Taranaki region in 2006.

Figure 5.11. Taranaki Occupations Māori vs non-Māori, 2006



Māori are overrepresented in the lower skill, lower paying occupations such as machinery operators and labourers. In particular, over 25 percent of the Māori population in Taranaki are employed as labourers, compared to only 13 percent for non-Māori.

In terms of professional occupations, a larger proportion of the Māori economy work as community and personal service workers.

6 Crime Drugs and Hazardous Drinking

Crime is more closely related to socio-economic status than it is to health outcomes. However, there is a link between crime and health outcomes, particularly around violent acts causing injury and related to alcohol and drug abuse. Māori make a disproportionate contribution to crime in the Taranaki region, according to apprehension data.

6.1 Taranaki crime statistics

Māori are overrepresented in crime statistics in the region and nationally. In Taranaki, of the 5,800 crimes where apprehensions were made 2,760, or 47 percent, were Māori. This is a stark number when you consider Māori only account for 15 percent of the Taranaki population. The proportions are even higher in certain types of crime such as violence (51 percent) and property damage (50 percent).

Considering that Māori make up around 15 percent of the Taranaki population, the numbers clearly show that Māori are overrepresented in crime statistics in Taranaki. In the violence, property damage and administrative sub-groups, Māori account for the same or more apprehensions than non-Māori. This is shown graphically in Figure 6.1.

Figure 6.1. Apprehensions in the Taranaki region, Māori and non-Māori, 2007

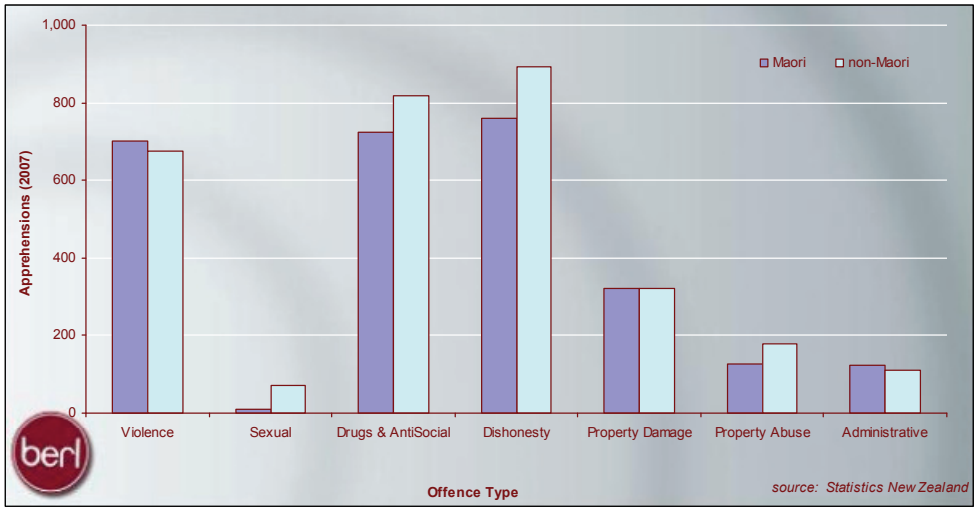
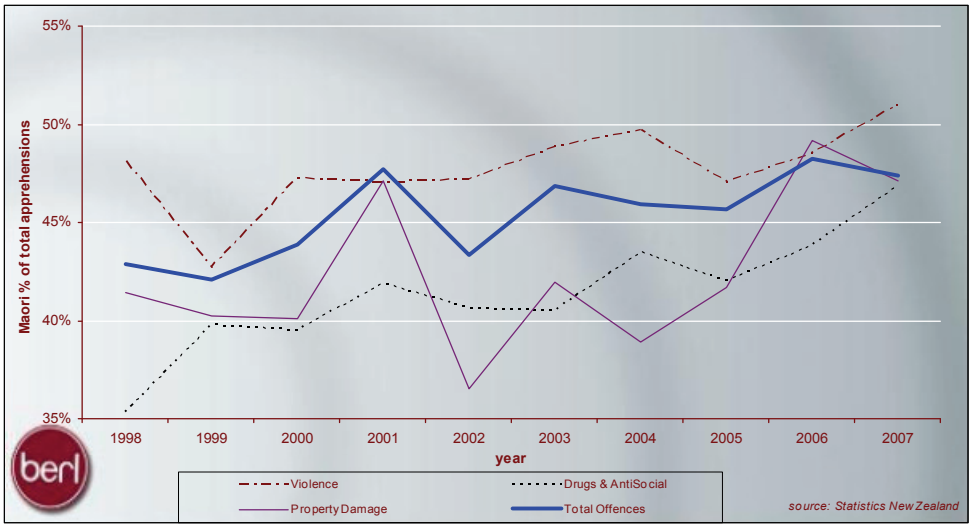


Figure 6.2 shows Māori proportion of apprehensions in the Taranaki region between 1998 and 2007.

Figure 6.2. Proportion of recorded criminal offences in the Taranaki region by Māori, 1998 to 2007



In general, Māori are making up an increasing proportion of apprehensions, from around 43 percent in 1998, to around 47 percent in 2007. However, in the latest year, Māori apprehensions fell.

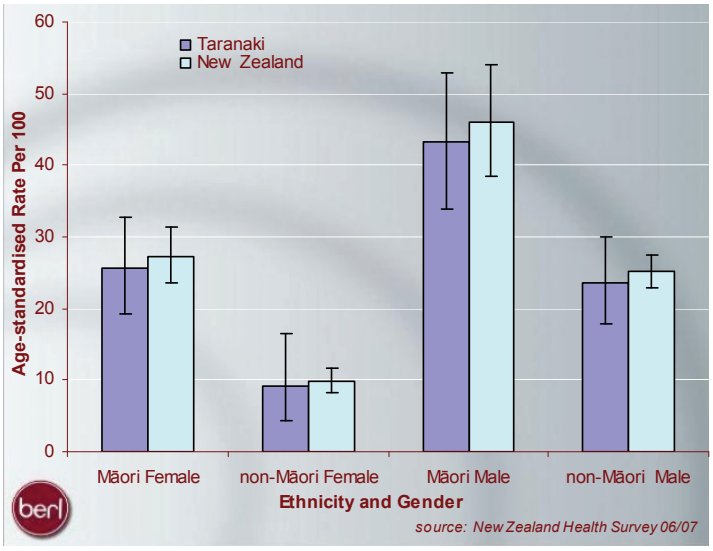
The greatest increase has been in drugs and antisocial behaviour, where Māori apprehensions have increased from 35 percent in 1998 to 47 percent in 2007. Dishonesty (which we have not graphed) is the only crime type where Māori proportion of apprehensions has declined.

6.2 Drugs and Alcohol

Violence, property damage and drugs and antisocial behaviour are often a result of alcohol and substance abuse. Consistent with the crime trends, Māori are also overrepresented in this area (alcohol and substance abuse) as well.

Figure 6.3 shows the age standardized rate per 100 for hazardous drinking patterns for Māori and non-Māori broken down by ethnicity and gender.

Figure 6.3. Hazardous drinking pattern, Māori and Non-Māori by Gender for Taranaki and New Zealand, 2006/07

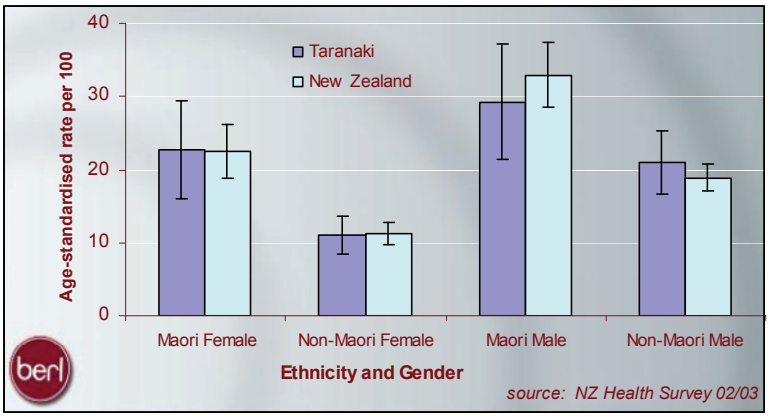


The differences between Māori and non-Māori in terms of hazardous drinking patterns are obvious. A quarter of Māori females have hazardous drinking patterns compared to less than 10 percent for non-Māori females. For males, 43 percent of Māori males exhibit hazardous drinking patterns compared to 24 percent for non-Māori males.

This is supported at the national level where, in 2007, Māori have a potentially hazardous drinking prevalence rate of 37.5 percent, compared to 23.1 percent for European/Other.[11]

The pattern is the same for marijuana use as shown in Figure 6.4. Note that this data is for the 2002/03 year.

Figure 6.4. Prevalence of Marijuana used in the last 12 months, Māori and non-Māori in Taranaki and New Zealand, 15+ years, 2002/03



[11] The Social Report 2008, p. 33.

In Taranaki, close to 30 in every 100 Māori males has used marijuana in the last 12 months compared to 21 in every 100 for non-Māori males. For Māori females, the number is around 23 in every 100 compared to only 11 in every 100 for non-Māori females.

The difference between Māori and non-Māori males in Taranaki is not statistically significant, although the national comparisons for males suggests that Māori are significantly higher users.

6.3 Suicide

Māori are more likely to take their own lives than non-Māori. According to the 2008 Social Report, there were 100 Māori deaths from suicide in 2005, accounting for 20 percent of all suicide deaths in that year. The three-year moving average age-standardised rate of suicide deaths in 2003–2005 was 17.9 per 100,000 population for Māori, compared to 12.0 per 100,000 for non-Māori.

Further, the report noted that the suicide death rate for Māori youth (15–24 year olds) in 2003–2005 was 33.2 per 100,000, more than twice the non-Māori rate of 14.6 per 100,000.

Finally, the report suggests that suicide death rates for both Māori and non-Māori, for all ages and youth, were lower in 2003–2005 than in 1996–1998, although, because of the small numbers, trends in Māori suicide rates should be treated with caution.

Note that this section relates to New Zealand and not Taranaki.

7 Māori Health Indicators

A growing Māori population provides certain challenges to the health sector, particularly when Māori are significantly more likely to require health services currently.

This section looks at a range of health indicators comparing Māori men and women to non-Māori. Where possible, this comparison is broken down at the Taranaki region level. Where available, we have used age standardised comparisons.[12]

Much of this data is based on the New Zealand Health Survey 06/07. DHB by ethnicity and gender data is modeled using synthetic predictions[13] as neither the survey data or the administrative data had the statistical power or scope for this level of detail.

Thus, while they are consistent with the other DHB estimates produced from the survey, a large proportion of them are not statistically significant. However, they can help answer questions such as "given an overall regional prevalence rate, what is the likely prevalence rate for the Māori subgroup living in the Taranaki DHB area".

And despite several of the outcomes not being statistically significant, the fact that the majority of Māori outcomes are lower than non-Māori suggest that it is not a coincidence. Similarly, Taranaki trends should generally follow national trends and in many cases the disparities are significant at a national level. Therefore, where possible, we have backed up the synthetic predictions with national comparisons.

7.1 Life expectancy

Life expectancy has been increasing consistently over time in New Zealand. Between 1952 and 2002, male life expectancy has increased by nine years, while for females; life expectancy has increased by 10 years.

Over the same period, Māori life expectancy has improved at a faster rate, although from a significantly lower base. Ultimately, Māori still have a lower life expectancy than non-Māori by 8.2 years for males and 8.8 years for females.[14]

Figure 7.1 compares the life expectancy of Māori to non-Māori population in New Zealand in 2000-2002.

---

[12] Age standardization allows comparison between ethnic groups with different age distributions.

[13] Synthetic predictions are simple products of the estimated rate for the DHB multiplied by the ration of the sub-group rate to the overall population prevalence rate.

[14] See the MSD Social Report 2008, p 24-25

Figure 7.1. Life expectancy, Māori vs. non-Māori, 2000-2002

For both males and females, Māori life expectancy is lower than for non-Māori. Māori males can be expected to live to 69, 8.2 years less than non-Māori. Māori females are can expect to live to 73, which is 8.8 years less than non-Māori females.

Latest data from the Māori Health website (2002)[15] shows Māori infant mortality at 10.1 deaths per 1,000 live births compared to 4.8 deaths per 1,000 live births for non-Māori.

7.2 Cardiovascular disease

Cardiovascular disease is the leading cause of death in New Zealand and in Taranaki. It is also the leading cause of potential years of life lost by people dying early.

Of the cardiovascular diseases, ischaemic heart disease is the major cause of death, followed by stroke, which is the greatest cause of disability in older people. The numbers of people in Taranaki who have cardiovascular disease is growing faster than the New Zealand average.

Cardiovascular disease is the leading cause of death for Māori people and Māori have higher rates of the disease than the general population.

Up to three quarters of all cardiovascular disease may be preventable, simply by doing things like not smoking, maintaining a healthy weight range, exercising regularly and having a healthy diet. Also important is controlling blood pressure and cholesterol levels. While prevention is a long term task, short term gains can be made in identifying and treating people at high risk, such as those with established coronary heart disease.

[15] www.Māorihealth.govt.nz/moh.nsf/indexma/infant-health

While Figure 7.2 suggests that there is no statistically significant difference in the self-reported heart disease prevalence between Māori and non-Māori in Taranaki and between Taranaki and New Zealand this is not reflected in the hospitalisation and mortality outcomes.

Figure 7.2. Heart Disease Prevalence, 15+ Years

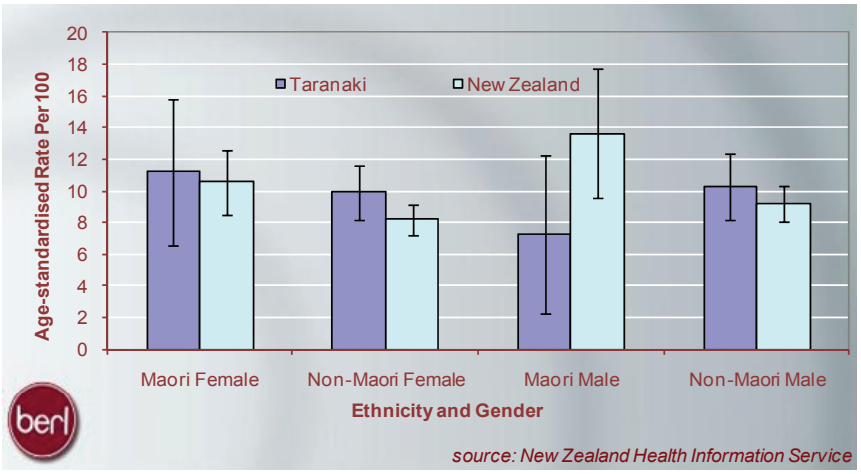
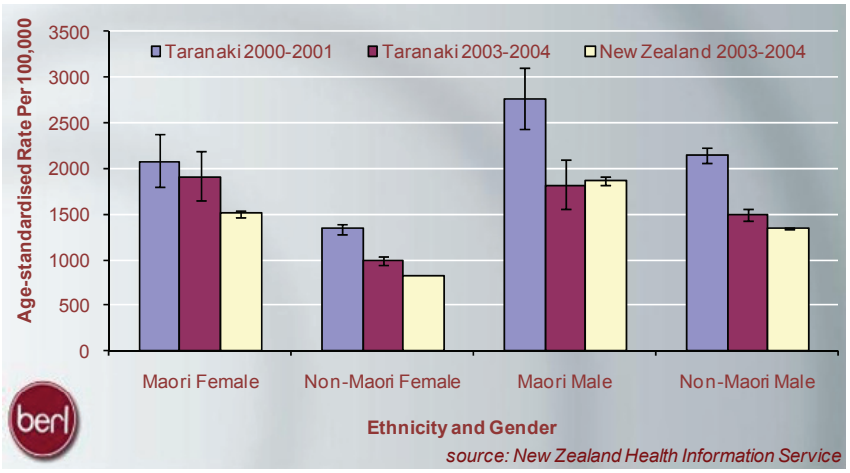


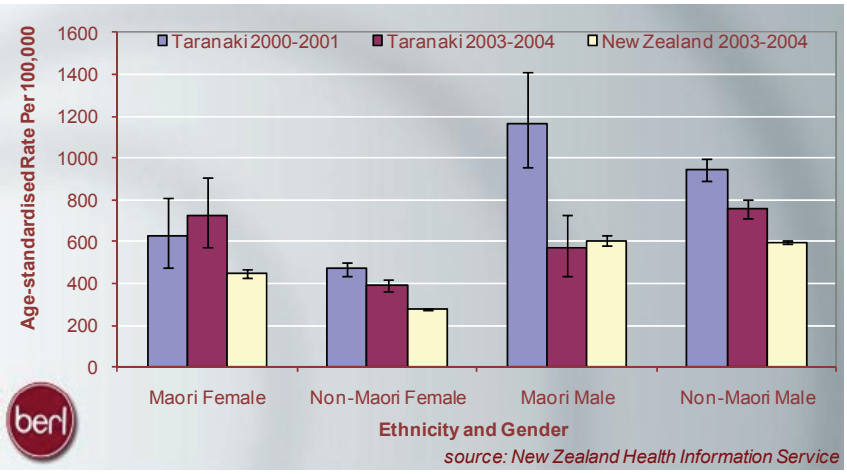
Figure 7.3 shows that Māori of both sexes had significantly higher rates of all cardiovascular disease hospitalisation than their non-Māori counterparts in Taranaki.

Figure 7.3. All Cardiovascular Disease Hospitalisation



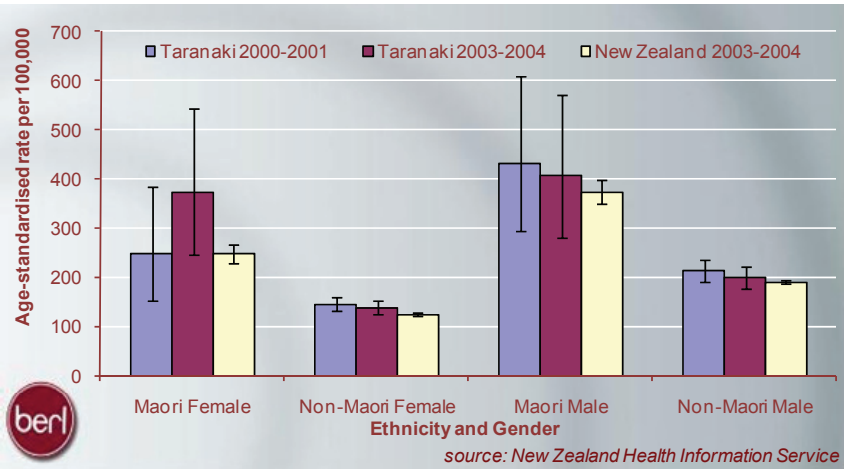
Similarly, as shown in Figure 7.4, the rate of ischaemic heart disease hospitalisation for Māori females in Taranaki was significantly higher than non-Māori females in 2003-2004.

Figure 7.4. Ischaemic Heart Disease Hospitalisation



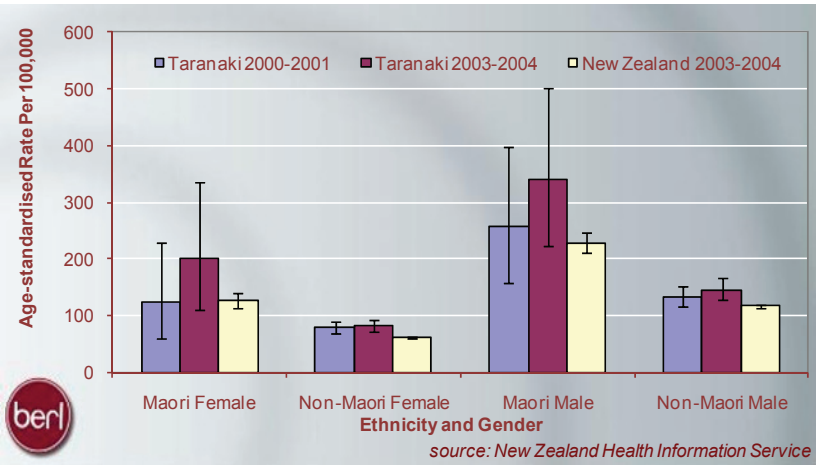
Looking then at Figure 7.5, all cardiovascular disease mortality rates for Māori were significantly higher than their non-Māori counterparts in 2002-2003 in Taranaki, at double the rates.

Figure 7.5. All Cardiovascular Disease Mortality



And then looking specifically at ischaemic heart disease mortality, Figure 7.6 shows that the rates of ischaemic heart disease mortality were significantly higher among Māori than non-Māori in 2003-2004 in Taranaki.

Figure 7.6. Ischaemic Heart Disease Mortality

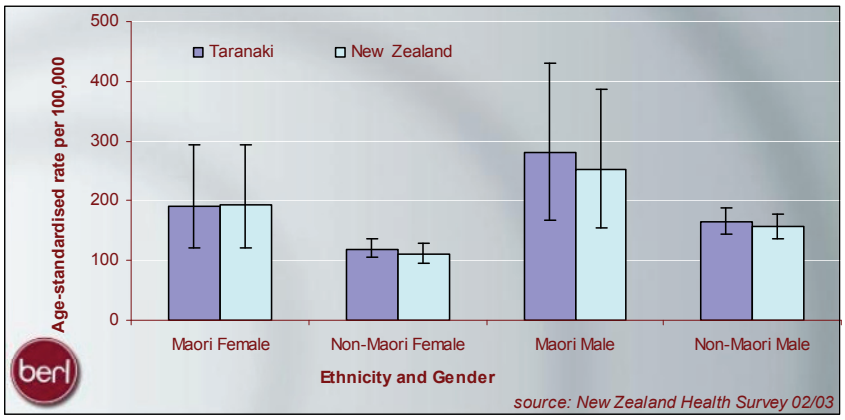


7.3 Cancer

According to the NZHIS, lung cancer was the second biggest cause of death for Māori in 200-2002. This applied equally to males and females. For non-Māori males, lung cancer was the fourth biggest cause of death and colorectal cancer was the fifth. For non-Māori women, breast cancer was the fifth biggest cause of death.[16]

Figure 7.3 shows the cancer mortality rates of Māori and non-Māori in Taranaki and New Zealand broken down by gender in 2002/2003.

Figure 7.3. All cancer mortality, Māori and non-Māori by gender for Taranaki and New Zealand, 2002/03



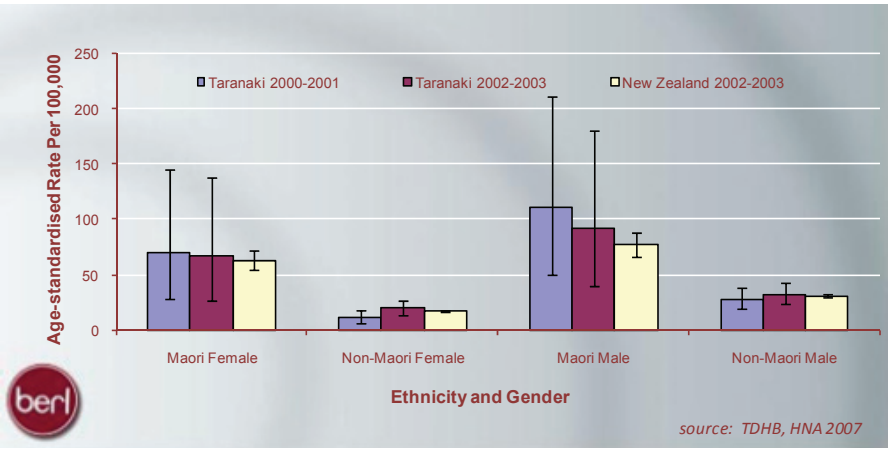
Māori males[17] and Māori females have higher rates of cancer mortality than non-Māori in Taranaki. Cancer mortality rates for Māori in Taranaki were 1.6 to 1.7 times higher for Māori than for non-Māori. Again the synthesised results are not statistically significant.

[16] Tatau Kahukura: Māori Health Chart Book (2006). Table 13, p32

[17] Although the large error bars for Māori males suggest that the difference in between Māori and non-Māori males is not statistically significant.

Figure 7.7 shows lung cancer mortality for Māori and non-Māori broken down by gender in 2000-2001 and 2002-2003 compared to New Zealand in 2002-2003.

Figure 7.7. Lung Cancer Mortality, Māori and non-Māori by Gender for Taranaki and New Zealand, 2000-2001 and 2002-2003



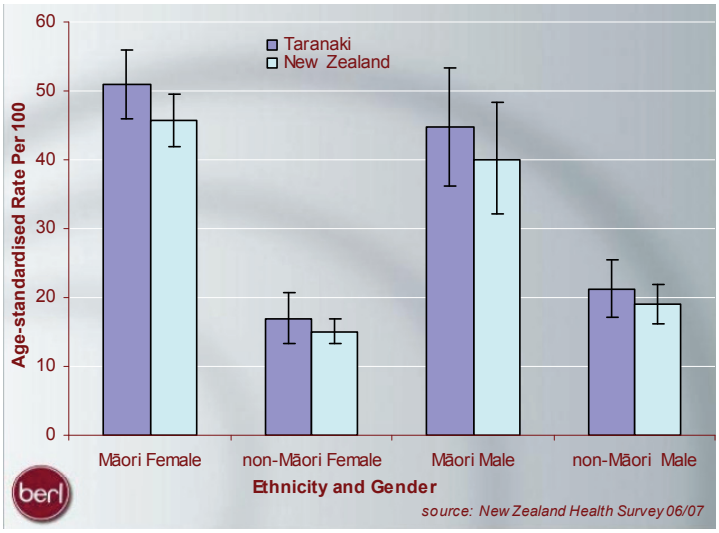
Māori males and females had statistically significant higher rates of lung cancer mortality than non-Māori in Taranaki. The rates for Māori were around three times higher than for their non-Māori counterparts.

Tobacco smoking is a well-recognised risk factor for many cancers and for respiratory and cardiovascular diseases. In addition, exposure to environmental tobacco smoke (particularly maternal smoking) is a major risk factor for Sudden Infant Death Syndrome and respiratory problems in children.[18]

Figure 7.8 compares smoking habits for Māori and non-Māori in Taranaki and New Zealand broken down by gender in 2006/07.

[18] The Social Report 2008, p. 28.

Figure 7.8. Current daily smoker, Māori and non-Māori by gender for Taranaki and New Zealand, 2006/07



In Taranaki, over 50 percent of Māori females are current daily smokers and around 45 percent of Māori males are current daily smokers. These are higher than for the non-Māori population in Taranaki, where for females the figure is less than 20 percent and for males just over 20 percent. Further, the Taranaki numbers are higher than for Māori nationally.

At a national level, 44.1 percent of Māori smoked compared to 21.7 percent of European/Other. While European men and women have similar smoking rates, Māori women (47.3 percent) are more likely to smoke than Māori men (40.3 percent).[19]

Disparity in smoking between Māori and non-Māori is high. This would tend to support the health data, which suggests that Māori have a higher prevalence of cardiovascular diseases, respiratory diseases and cancers. In turn, this suggests that there needs to be a focused programme on reducing smoking for Māori to address the significant disparity between them and non-Māori.

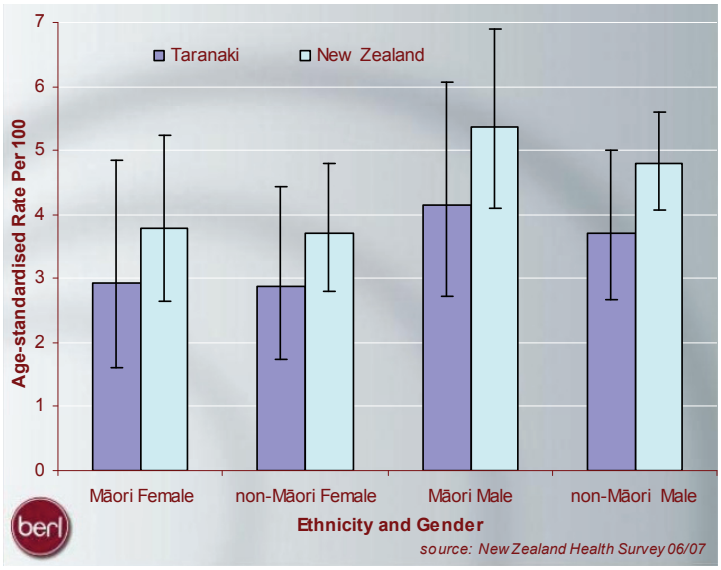
7.4 Diabetes

Diabetes is the third leading cause of premature death in Māori males and the fifth leading cause of premature death for Māori females.

Figure 7.9 shows the rate of diabetes in Taranaki and New Zealand, broken down by ethnicity and gender.

[19] The Social Report 2008, p. 29.

Figure 7.9. Diabetes, Māori and non-Māori by gender for Taranaki and New Zealand, 2006/07



Diabetes is less prevalent in the Taranaki region than nationally and is more likely to occur in the male population. Māori males have a higher likelihood than non-Māori males to have diabetes. For women, the rates appear similar for Māori and non-Māori. These results are not statistically significant.

However, the HNZ 2007 report (p42) shows that Māori diabetes hospitalisation rates were three times higher than non-Māori in 2003-04 in Taranaki, and that both Māori and non-Māori females in Taranaki had significantly higher rates of diabetes hospitalisation than their counterparts in New Zealand.

Further, the rate of renal failure with concurrent diabetes for Māori females was 11 times higher and for Māori males 15 times higher than among their non-Māori counterparts in Taranaki.

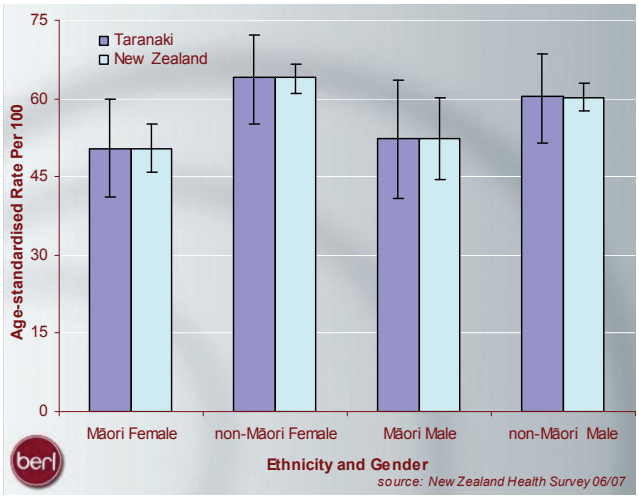
7.5 General health

Based on SF-36 scales[20], in the NZHIS 2003 health survey, Māori tend to self-report lower levels of health across eight indicators. In fact, the only indicator where Māori score higher is male vitality.

Figure 7.10 compares the general health of the Māori and non-Māori population by gender in Taranaki and New Zealand in 2006/07.

[20] The SF-36 is one of the most widely used questionnaires for measuring self-reported physical and mental health status. The SF-36 questionnaire consists of 36 questions measuring physical and mental health status in relation to eight health scales. Scores are expressed on a 1–100 scale for each of the eight health scales, with higher scores representing better self-perceived health.

Figure 7.10. General health - proportion who are healthy, Māori and non-Māori by gender for Taranaki and New Zealand, 2006/07



The rates are very similar for Taranaki and New Zealand. However, both Māori males[21] and females rate themselves less healthy than their non-Māori counterparts although the only statistically significant comparison is between Māori and non-Māori women at a national level.

Obesity

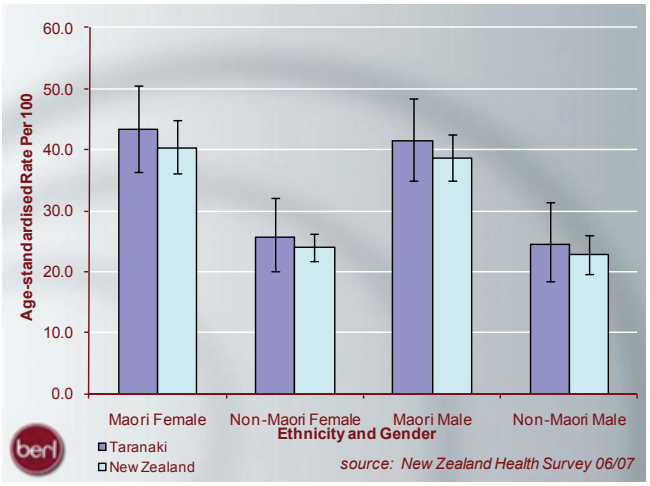
Obesity is associated with a long list of adult health conditions, including heart disease, high blood pressure and strokes, type 2 diabetes, various types of cancer, and psychological and social problems.[22]

Figure 7.11 shows the age standardised proportion per 100 that have a body mass index of greater than 30. It compares Māori to non-Māori broken down by gender for Taranaki and New Zealand.

[21] The overlapping error bars suggest that the differences between Māori and non-Māori males and Taranaki females is not significant.

[22] The Social Report 2008, p30.

Figure 7.11. Obese (BMI > 30), Māori and non-Māori by gender for Taranaki and New Zealand, 2006/07



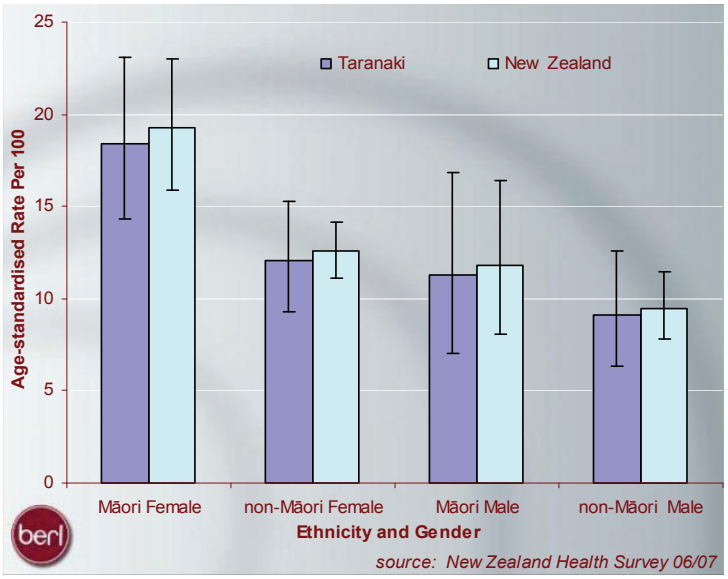
Māori have significantly higher proportions of obese people than non-Māori. For Māori women in Taranaki, around 44 of every 100 are obese compared to 26 percent for non-Māori. The numbers and patterns are similar for males.

This is consistent with the general population, where Māori (43 percent) were more likely to be obese than European/Other (23 percent).[23]

Asthma prevalence

Figure 7.12 presents asthma prevalence for Māori and non-Māori in Taranaki and New Zealand broken down by gender in 2006/07.

Figure 7.12. Asthma prevalence for Māori and non-Māori by gender for Taranaki and New Zealand, 2006/07



[23] The Social Report 2008, p. 31.

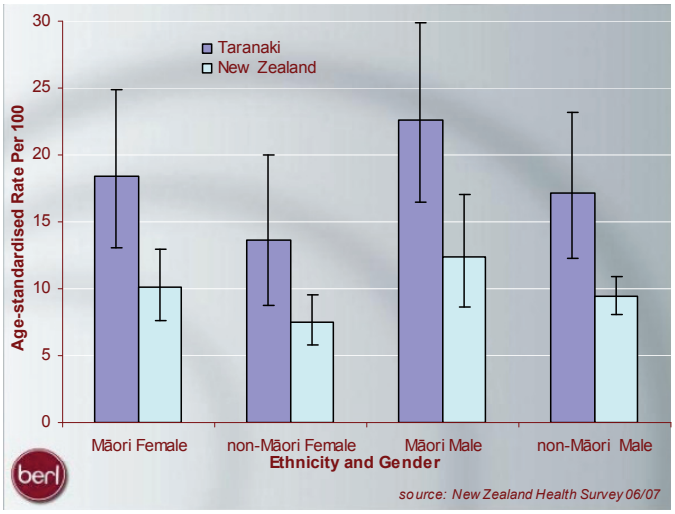
Māori females have the highest asthma prevalence at 19.2 per 100 people. This compares to 12.6 per 100 for non-Māori. Figures for Taranaki are slightly lower than nationally.

Māori males in Taranaki also have a higher level of asthma prevalence at 11.3 per 100 compared to 9.1 per 100 for non-Māori males in Taranaki although the error bars mean that the difference is not statistically significant.

Emergency room visits

Figure 7.13 shows the age standardised rate per 100 of Māori and non-Māori, who visited a public hospital emergency room (ER) in the last 12 months. Numbers are available for both Taranaki and New Zealand for the 2006/2007 period.

Figure 7.13. Visited public hospital ER in last 12 months, Māori and non-Māori by gender for Taranaki and New Zealand, 2006/07

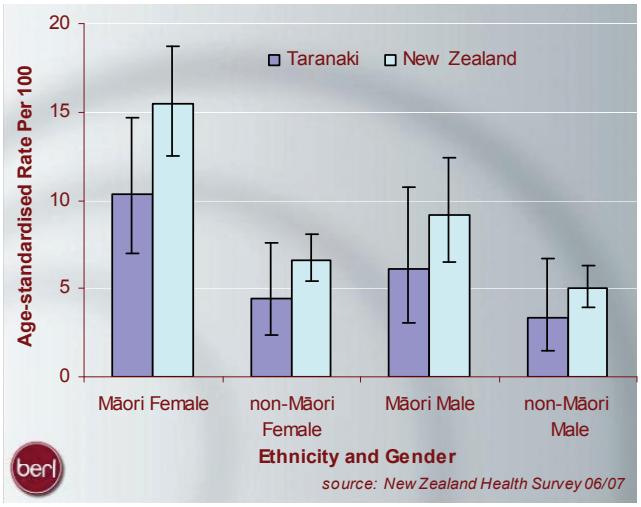


Māori in Taranaki were much more likely to have visited a public hospital ER in the last 12 months than non-Māori in Taranaki but also Māori nationally. Around 23 in every 100 Māori males had visited a public hospital ER compared to around 12 in every 100 non-Māori males in Taranaki. Overlapping error bars across all subgroups again suggest that the differences are not statistically significant.

GP visits

Figure 7.14 shows the proportions of Māori and non-Māori who had an unmet need for a GP visit in the last 12 months. This gives an indication of those that needed to see a GP, but were unable to for any reason. The analysis is broken down by gender but also compares Taranaki to nationally.

Figure 7.14. Unmet need for GP visit in last 12 months, 2006/07

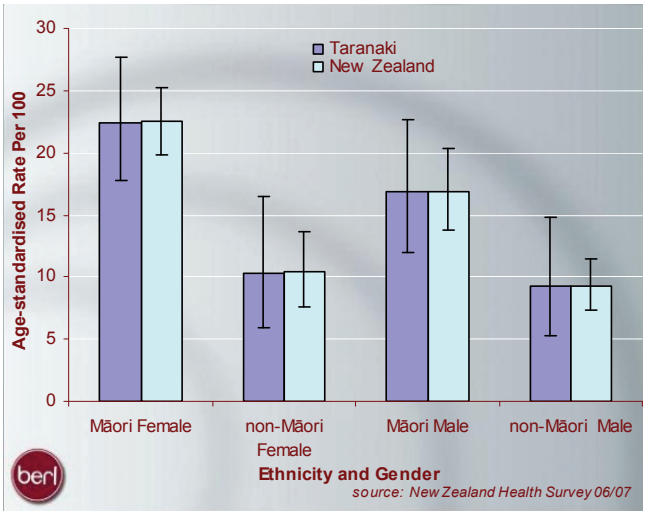


In Taranaki, a higher proportion of Māori females and males had an unmet need for a GP visit compared to non-Māori in the region. The figures were more than twice as high for Māori females. The comparisons are accurate at a national level, although the high error bars for Taranaki means that statistical significance cannot be confirmed.

Oral health

Figure 7.15 does the same as the previous graph but for oral health care.

Figure 7.15. Unmet need for oral healthcare in last 12 months, 2006/07



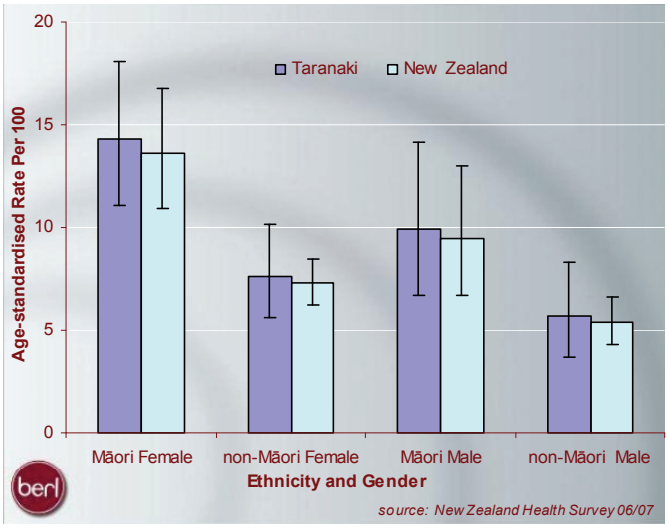
The results appear similar to the previous measure. Māori females in Taranaki are more than twice as likely to have an unmet need for oral healthcare as non-Māori females.

For males, the comparison between Māori and non-Māori is not statistically significant at the Taranaki level although, at a national level, Māori males have a higher unmet need for oral healthcare.

Mental health

Figure 7.16 shows that Māori females have a significantly higher probability than non-Māori females of having anxiety or depressive disorders.

Figure 7.16. High probability of having anxiety or depressive disorder, Māori and non-Māori by gender for Taranaki and New Zealand, 2006/07



This difference is not so marked for males with the synthesised results not being significantly different.

7.6 Fertility/Child and Youth

Nationally, Māori women have more babies and at a younger age than non-Māori. While data is not available for Taranaki, we would assume that this trend would hold at the regional level as well. Especially as the Taranaki region has a higher fertility rate than nationally.[24] The following information is taken from Statistics New Zealand

Comparing Māori to the total population, Māori had a fertility rate of 2.94 to only 2.17 in total. Māori were also having children at a younger age with the median age of the mother being 25.8 versus 30.1 for all ethnic groups.

Teenage pregnancy

Māori in New Zealand are also significantly more likely to have children in their teenage years. In 2007, births per woman under the age of sixteen was 0.02[25] for Māori compared to 0.007 for all women under sixteen. For those aged between sixteen and eighteen the births per woman were 0.05 for Māori versus 0.018 for all women.

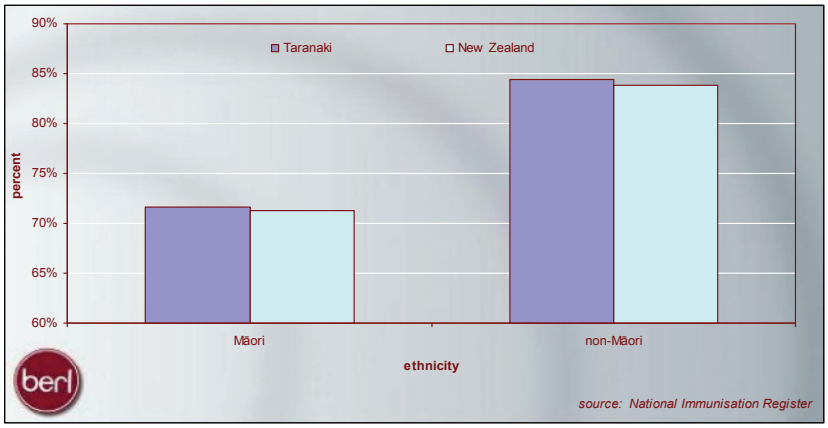
[24] In 2006 Taranaki had a fertility rate of 2.30 births per woman, which was higher than the national rate of 2.04.

[25] **As in, for every 100** Māori **women under the age of sixteen, two would have given birth.**

Immunisation

Figure 7.17 shows the percentage of the Māori and non-Māori population in Taranaki and New Zealand that are immunised at 12 months for the year ending March 2008

Figure 7.17. Immunisation coverage at 12 months, Māori and non-Māori for Taranaki and New Zealand, year to March 2008



A significantly lower proportion of Māori than non-Māori are immunised at 12 months. For Māori in Taranaki the rate is around 72 percent versus close to 85 percent for non-Māori in the region. Comparisons between Taranaki and New Zealand are broadly similar.

Oral health

Figure 7.18 looks at the state of the oral health of Māori and non-Māori/non-Pacific children in Taranaki and New Zealand in 2004. The data is broken down further by whether the water supply was fluoridated.

In both cases, fluoridated and non-fluoridated, Māori had a significantly higher proportion of decayed, missing or filled teeth at age five than non-Māori.

Figure 7.18. Mean number of decay, missing or filled teeth, at age 5, Māori and non-Māori, non-Pacific in Taranaki and New Zealand, 2004

8 Māori Health Services

"The whole of the health sector is responsible for improvements in Māori health outcomes. … There are a number of agencies that need to work collaboratively – including with whanau, hapu, iwi and Māori communities – to address Māori health needs. Cooperation can be through formal partnerships and the pooling of resources and services, by undertaking joint projects and establishing memoranda of understanding or relationship agreements. Many benefits can be gained by working together, including resource efficiencies, consistency in action, enhancement of impact and a focusing of effort and resources where the greatest health gain can be achieved."

- *Whakatataka Tuarua – Māori Health Action Plan 2006 – 2011, p10*

Thus an important approach identified in Māori health policy is the importance of including and enabling Māori to achieve Māori health needs. This section looks at TDHB expenditure in Taranaki on Māori health services, an analysis of Māori participation in the TDHB, and outlines providers of Māori health in Taranaki.

8.1 TDHB expenditure on Māori health services

Table 8.1 shows TDHB expenditure across its service areas including to Māori and mainstream non-government organisations (NGOs).

Table 8.1. Summary of TDHB expenditure (GST exclusive) for Māori specific health services, 2005/06 to 2007/08

Summary of expenditure on Maori Health services	2008-09 $	2007-08 $	2006-07 $	2005-06 $
Category One : Contracting w ith Maori Health Providers	6,651,980	5,993,022	6,057,753	5,848,442
Category Tw o : Maori specific services provided by non Maori Providers	1,080,881	605,285	521,119	404,845
Category Three : Iw i/Maori led PHOs	2,009,502	1,042,965	1,010,304	1,003,121
Category Four : Maori Workforce Development Funding	150,508	79,949	30,000	0
Total Maori expenditure	**9,892,871**	**7,721,221**	**7,619,176**	**7,256,408**
Total DHB expenditure	*289,488,000*	**272,904,000**	**251,928,000**	**235,167,000**
Māori health spend as a % of total DHB spend	*3.4%*	*2.8%*	*3.0%*	*3.1%*

Source: Taranaki DHB

Out of a total DHB expenditure of $289 million, approximately $9.9 million was spent on Māori health services in 2009.

Māori health spend has increased over the last four years from around three percent in the 05/06 and 06/07 years to 3.4 percent of the total TDHB spend in 08/09[26]. There have been large increases in expenditure of between 52 and 56 percent in the latest year in the category

[26] Note that the TDHB expenditure for 08/09 is indicative only as the final audited figures had not been released at the time of this report being finalised.

two, three and four services, while the total increase in expenditure in 08/09 is close to 30 percent.

8.2 Māori employed by the Taranaki District Health Board

He Korowai Oranga pathway of Māori participation aims to involve Māori at all levels of the health and disability sector, in decision-making, planning, development and delivery of health and disability services.

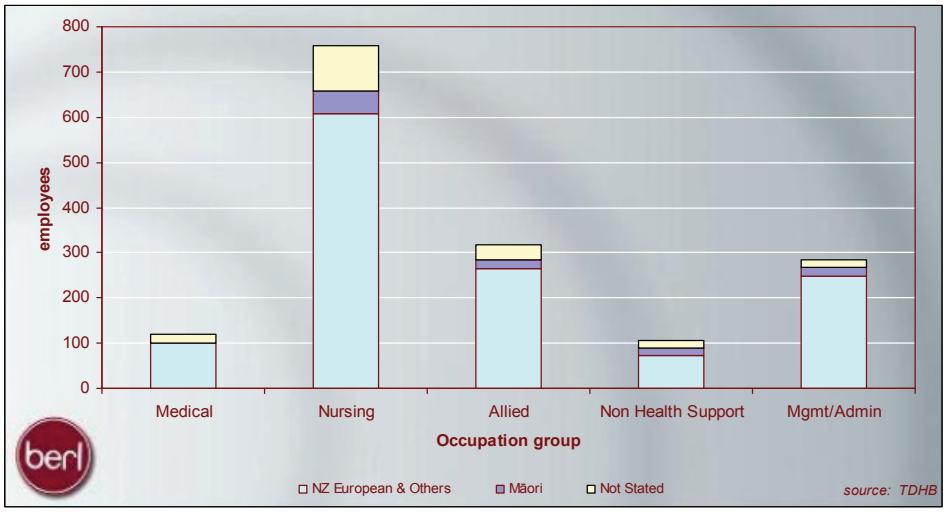
It can be argued that, based on the Māori population and indeed Māori health statistics, that Māori are under-represented in employment in the Taranaki DHB.

Out of a total staff of close to 1,600 employees, only seven percent of those employed in the TDHB identified themselves as Māori.[27] The majority of these worked in the nursing field (51), followed by management and administration (19), and allied services (18).

While half of Māori working at Taranaki DHB are in nursing, they only account for seven percent of nurses. Meanwhile Māori account for a larger proportion of employment in the non-health support category as shown in Figure 8.3. The non-health support category is likely to have a larger proportion of low-skilled workers.

This information is shown in Figure 8.1 below together with the non-Māori and not-stated workforce.

Figure 8.1. TDHB employment by ethnicity, headcount, as a 31 March 2008



Looking then at the absolute values in Figure 8.1, of the 104 who identified as Māori working in the TDHB, nursing accounts for half of all Māori employment in the TDHB. Management and

[27] Note that around 12 percent of staff have not stated their ethnicity, and that this is 16 percent in the medical services category.

administration and allied services employ a similar proportion at 18 and 17 percent respectively, and non-health support accounts for 14 percent of Māori employed. The medical category accounts for only one percent of Māori employed in the TDHB.

The proportions of Māori employed in each of the occupation groups are shown in Figure 8.2 and as a proportion of the total workforce in Figure 8.3.

Figure 8.2. Māori employees in the TDHB as at 31 March 2008

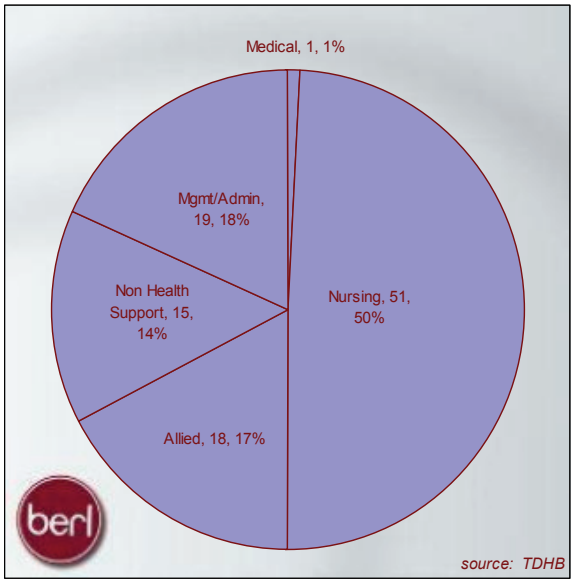
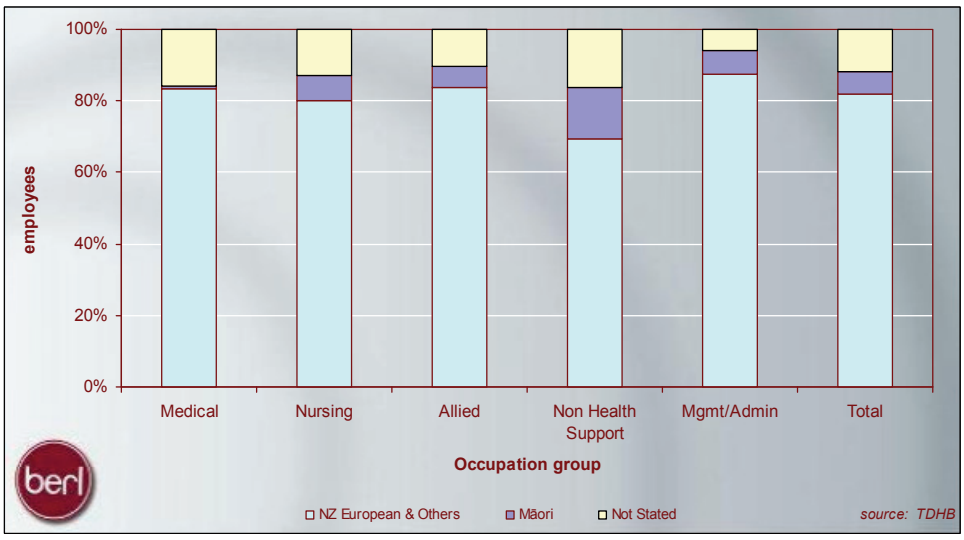


Figure 8.3 looks at the proportion of Māori employed in each category.

Figure 8.3. TDHB employment by ethnicity, percentage, as at 31 March 2008



As a proportion of total employment in each category, Māori tend to work in the non-health support services (14), followed by nursing then management and administration.

These findings are consistent with the Rauringa Raupa (2008) report, which suggested that 'in many occupation groups or specialist areas Māori are either not represented or are vastly under represented. Māori tend to be clustered in areas that require lower levels of formal qualifications, such as service workers.'

A Ministry of Health report[28] suggests that around 2.6 percent of all active medical practitioners in 2004 were Māori and that close to half of them worked in a public hospital setting. Māori made up seven percent of the registered nurses in New Zealand and 3.9 percent of active midwives.

Applying the TDHB data to national comparisons suggests that Māori are under-represented in terms of health workers.[29]

8.3 Māori health services in Taranaki

Table 8.2 shows the Māori health services in Taranaki supported by TDHB.

Table 8.2. Māori health services supported by TDHB

Personal Health	**Mental Health Services**	**Dental Services**
Ruanui Health Services	Raumano Health Services Trust	Taylor Dental Service
Te Atiawa Runanga Medical Services Trust	Te Rau Pani	
Ngaruahine Iwi Health Services	Te Whare Puawai o te Tangata Trust	**Traditional Healing/Rongoa**
Te Aroha Medcare	Mahia Mai a Whai Tara	Karangaora
Piki te Ora Nursing Services	Tu Tama Wahine o Taranaki	
Manaaki Oranga	Te Ihi Rangi Trust	**Management & Back-Office Support**
Disability Support Services	**Health Promotion**	Tui Ora Ltd
Te Hauora Pou Heretanga	Toi Ora Health Lifestyles Ltd	Te Tihi Hauora O Taranaki PHO

* several providers deliver in more than one category

source: Taranaki DHB

The majority of providers work in personal health, with a small proportion of these organisations providing secondary services as well. The next largest group work primarily on mental health services. There are two organisations funded to provide management and back-office support.

Case Study - Tui Ora Ltd

Tui Ora Ltd is a Māori Development Organisation (MDO), which is an umbrella organisation for Māori health and social service providers in Taranaki. Tui Ora Ltd was set up as a 'not-for-profit' business in 1998 to create an organisational structure for decision-making, and to ensure resources could be managed in the most effective way possible.

The Tui Ora network started out with eight providers delivering a variety of health services in the areas of Mental Health, Personal Health and Public Health. There are currently 13

[28] MOH(2007) He Pa Harakeke: Māori Health Workforce Profile

[29] Note that this analysis only looks at the TDHB employment and does not consider Māori employed in other health organisations in Taranaki.

service providers affiliated to Tui Ora, delivering services across the region. These providers employ over 300 people on a full or part-time basis. Tui Ora's annual turnover is over $8 million of which the bulk is for health services. The company is 50:50 owned by the affiliated providers, Kia Kotahi Matou, and the iwi health forum, Te Whare Punanga Korero.

Tui Ora Ltd acts as the 'front office' and 'back office' for health and social providers and its services cover a broad range including contracting, IT, administration, human resources, and financial services.

The types of services provided by the affiliated providers range from mirimiri, rongoa, a GP service, dental service, problem gambling, maternal mental health counselling, education, advocacy, tamariki ora support, mobile nursing, as well as pregnancy and parenting programmes, auahi kore and smoking cessation. In terms of mental health services, support ranges from residential facilities, kaumatua/kuia services, NASC services, alcohol and drug counselling and education for adults and rangatahi, to specialist mental health services. In addition there is also a supported employment service for Tangata whaiora in North and South Taranaki. Tui Ora also has a Youth Transition Service, which works with rangatahi to support them in their transition from school to employment or training.

The strategy of Tui Ora has been to improve access at primary care level to health and social services. A further strategy has been to address the broader determinants of health including economic development, cultural, and education initiatives.

Tui Ora Ltd has positioned itself to play a key role in cross sector initiatives in the Taranaki region.

The success of Tui Ora Ltd is a model that could well have relevance in other social and business areas for Māori in Taranaki. These areas could include education and skills training; creative industry and business services; recreation and tourism activities.

9 Conclusions

This report presents and identifies a wealth of information on the socio economic and health status of Māori in the Taranaki region. This information can feed into issue identification and strategy development for all those involved in improving Māori health.

This report should be read in conjunction with other reports such as Māori in the Taranaki Region: An Economic Profile; the Health Needs Assessment 2007; and He Korowai Oranga (Māori Health Strategy). These other reports provide context on the issues and strategies required to improve Māori health, particularly in the Taranaki region.

In this section we aim to summarise the main findings and information in the report.

9.1 Māori population

The Taranaki region has a relatively large Māori population. This population is younger and is growing at a faster rate than non-Māori.

Māori account for 15 percent of the Taranaki region's population. However, they make up a much larger proportion of the younger age groups. The Māori population is expected to grow faster than the non-Māori population in the Taranaki region. Māori proportion of total population in the region will increase faster in the younger age groups.

Therefore there will be more Māori and younger children in the Taranaki health system going forward. Based on the current pattern of Māori health, this will place increasing pressure on the health system.

As well, the Māori population as a proportion of the total population and the workforce in the Taranaki region will increase over time.

The Māori population in the Taranaki region is split 60-40 between Māori who whakapapa to the Taranaki region and those that have come from outside the region. However, two-thirds of Māori who whakapapa to the Taranaki region live outside the Taranaki region. This diaspora raises both issues and opportunities around how to interact with Māori in the region but also how to encourage or leverage of Māori who live outside the region but have a vested interest in it.

9.2 Social disparities

The report shows that, across nearly all social and economic indicators, Māori are worse off than non-Māori in the Taranaki region.

Social deprivation index

Māori in Taranaki tend to make up a significantly higher proportion of the population in the lower decile areas of the Taranaki region.

Incomes

Māori in the Taranaki region have lower incomes than non-Māori. The average weekly income for Māori in Taranaki is $553 compared to $651 for non-Māori while the median incomes for both groups are similar at $516 and $524 respectively. More importantly, the Māori average income is only seven percent higher than the Māori median income whereas the non-Māori average is 24 percent higher than the non-Māori median income.

Housing

Overcrowding contributes to poorer health outcomes. Around 10 percent of Māori households in the Taranaki region are living in overcrowded conditions. This compares to only one percent for non-Māori households.

Education

Education is positively linked to income and other socio-economic outcomes, which are reflected in improved health outcomes.

A higher proportion of Māori than non-Māori leave school with little or no formal attainment and a lower proportion of Māori complete school than non-Māori. Further, these differences are even higher in the Taranaki region than they are nationally.

26 percent of Māori in the Taranaki region leave school with little or no formal attainment compared to only nine percent of New Zealand European school leavers. The Taranaki Māori figure of 26 percent was also higher than the national Māori figure of 22 percent.

A significantly higher proportion of Māori have no qualifications compared to non-Māori and this trend continues and then reverses, when by postgraduate degree less than half as many Māori have achieved that attainment compared to non-Māori.

Labour force

A higher proportion of Māori than non-Māori are in the total labour force. However, a smaller proportion of these are actually employed. The remainder are unemployed, which accounts for 8 percent of the Māori working age population but only 2.5 percent of non-Māori.

More than twice the proportion of Māori (27 percent) are on benefits compared to non-Māori (10 percent).

Māori are over represented in the lower skill, lower paying occupations such as machinery operators and labourers. In particular, over 25 percent of the Māori population in Taranaki are employed as labourers, compared to only 13 percent for non-Māori. In terms of professional occupations, a larger proportion of the Māori economy work as community and personal service workers.

Crime

Socio economic outcomes are reflected in the crime statistics.

Māori make a disproportionate contribution to crime in the Taranaki region, according to apprehension data. In Taranaki, of the 5,800 crimes where apprehensions were made 2,760, or 47 percent, were Māori. This is a stark number when you consider Māori only account for 15 percent of the Taranaki population. The proportions are even higher in certain types of crime such as violence (51 percent) and property damage (50 percent).

In general, Māori are making up an increasing proportion of apprehensions, from around 43 percent in 1998, to around 47 percent in 2007. The greatest increase has been in drugs and antisocial behaviour, where Māori apprehensions have increased from 35 percent in 1998 to 47 percent in 2007.

Violence, property damage and drugs and antisocial behaviour are often a result of alcohol and substance abuse. Consistent with the crime trends, Māori are also over-represented in this area (alcohol and substance abuse) as well. A quarter of Māori females have hazardous drinking patterns compared to less than 10 percent for non-Māori females. For males, 43 percent of Māori males exhibit hazardous drinking patterns compared to 24 percent for non-Māori males.

In Taranaki, close to 30 in every 100 Māori males has used marijuana in the last 12 months compared to 21 in every 100 for non-Māori. For Māori females, the number is around 23 in every 100 compared to only 11 in every 100 for non-Māori females. Māori are more likely to take their own lives than non-Māori.

9.3 Health outcomes

Māori life expectancy is lower than for non-Māori. Māori males can be expected to live to 69, 8.3 years less than non-Māori. Māori females are can expect to live to 73, which is 8.7 years less than non-Māori females.

Māori infant mortality is at 10.1 deaths per 1,000 live births compared to 4.8 deaths per 1,000 live births for non-Māori

In Taranaki, cardiovascular disease and ischaemic heart disease hospitalisation and mortality are higher for Māori than for non-Māori.

Lung cancer is the second biggest cause of death for Māori. This applies equally to males and females. Māori males and females had statistically significant higher rates of lung cancer mortality than non-Māori in Taranaki. The rates for Māori were around three times higher than for their non-Māori counterparts.

Over 50 percent of Māori females are current daily smokers and around 45 percent of Māori males are current daily smokers. These are significantly higher than for the non-Māori population in Taranaki, where for females the figure is less than 20 percent and for males just over 20 percent.

Māori have significantly higher proportions of obese people than non-Māori. Māori in Taranaki are much more likely to be obese than Māori nationally.

Māori females have the highest asthma prevalence at 19.2 per 100 people. This compares to 12.6 per 100 for non-Māori females.

Māori in Taranaki were more likely to have visited a public hospital ER in the last 12 months than non-Māori in Taranaki but also Māori nationally. In Taranaki, a higher proportion of Māori females and males appear to have had an unmet need for a GP visit compared to non-Māori in the region. The figures were more than twice as high for Māori females. Māori females in Taranaki are more than twice as likely to have an unmet need for oral healthcare as non-Māori females.

Māori are also more likely to have children in their teenage years. In 2007, the births per woman under the age of sixteen were 0.02 for Māori compared to 0.007 for all women under sixteen. For those aged between sixteen and eighteen the births per woman were 0.05 for Māori versus 0.018 for all women.

A lower proportion of Māori than non-Māori are immunised at 12 months. Māori had a significantly higher proportion of decayed, missing or filled teeth at age five than non-Māori.

9.4 Māori health provision

Spend

The whole of the health sector is responsible for improvements in Māori health outcomes. A key approach is targeted delivery to Māori by Māori.

The TDHB spent around $9.9 million on Māori specific health services in 08/09. While this is a significant increase on the $7.7 million spent on Māori specific health services in the previous year, expenditure on Māori specific health services is equivalent to 3.4 percent of the

TDHB operational expenditure. This appears low considering the targeted delivery approach and the health and socio-economic disparities discussed in this report.

Workforce participation

He Korowai Oranga pathway of Māori participation aims to involve Māori at all levels of the health and disability sector, in decision-making, planning, development and delivery of health and disability services.

Based on the Māori population and indeed Māori health statistics, Māori are under-represented in employment in the TDHB. Further, this employment tends to be in the unskilled categories of the health sector. While half of Māori are employed in nursing, which is skilled, they only account for seven percent of that category. However, they account for around 15 percent of the non- health related category, which is largely unskilled.

Out of a total staff of close to 1,600 employees, only seven percent of those employed in the TDHB identified themselves as Māori. The majority of these work in the nursing field (51), followed by management and administration (19), and allied services (18).

10 References and Data Sources

10.1 References

Baker, M., Zhang, J., Howden-Chapman, P., Blakely, T., Saville-Smith, K. and Crane, J., 2006, "Housing, Crowding and Health Study: Characteristics of cohort members and their Hospitalisations February 2003 to June 2005", Interim Report, 26 July 2006, Wellington School of Medicine and Health Sciences.

BERL (2007). Māori in the Taranaki Region: An Economic Profile. A report to Venture Taranaki / Tui Ora Ltd partnership.

Department of Prime Minister and Cabinet (2008). Final Report of the House Price Unit: house price increases and housing in New Zealand. House Prices Unit. Department of Prime Minister and Cabinet.

Maani, S, Vaithianathan, and Wolfe. (2006). Inequality and Health: Is Housing Crowding the Link? Motu Working Paper 0609.

Medical Council of New Zealand (2008). Best Health Outcomes for Māori: Practice implications.

Ministry of Social Development (2008). The Social Report 2008. Published August 2008.

Ministry of Health (2002). He Korowai Oranga Māori Health Strategy. Published November 2002.

Ministry of Health (2006). Whakatataka Tuarua Māori Health Action Plan 2006 – 2011. Published December 2006.

Ministry of Health (2006b). Tatau Kahukura: Māori Health Chart Book. Public Health Intelligence Monitoring Report No. 5. Published April 2006.

Ministry of Health (2007). He Pa Harakeke: Māori Health Workforce Profile. Selected regulated health occupations 2007. Published July 2007.

Ministry of Health (2008). Rauringa Raupa: Recruitment and Retention of Māori in the Health and Disability Workforce. A report prepared for the Ministry of Health and the Health Research Council of New Zealand by Taupua Waiora Centre, National Institute for Public Health and Mental Health Research, Faculty of Health and Environmental Sciences, AUT University. Published January 2007

Saville-Smith, K. and Amey, B. (1999). Overcrowded families in New Zealand: Regional patterns. Centre for Research, Evaluation and Social Assessment.

Taranaki District Health Board (2008). Health Needs Assessment 2007

10.2 Data Sources

Ministry of Education. Early Childhood Education Register, 2007.

Ministry of Social Development. Regional Benefits Data.

National Immunisation Register.

NZHIS (2008) New Zealand Health Survey 2006/07.

NZHIS (2005) New Zealand Health Survey 2003/04.

Salmond C, Crampton P, Atkinson J. NZDep2006 Index of Deprivation. Wellington: Department of Public Health, University of Otago Wellington, 2007.

Statistics New Zealand. Census 2006.

Statistics New Zealand. Life Expectancy Tables 2000 to 2002.

Statistics New Zealand. New Zealand Income Survey 2007.

Statistics New Zealand. Sub-national population projections

Taranaki District Health Board. Administrative Data.

11 Appendix: Synthetic Predictions (DHB estimates by ethnicity and gender)

The methods used to produce the modelled DHB estimates have not proved effective in producing the estimates at these lower levels of detail. Neither the survey data nor the administrative data had the statistical power or scope to do this more detailed estimation. Hence, in addition to the grouped DHB estimates available in Portrait of Health and the modelled DHB estimates available on PHI-online, we have created a set of 'synthetic predictions', a crude set of estimated prevalence rates in each DHB by gender and ethnicity (Maori, Pacific, Asian and European/Other). In what is described below the sub-groups refer to these (4x2) 8 ethnic by gender categories.

The *synthetic predictions* are simple products of the estimated rate for the DHB multiplied by the ratio of the sub-group rate to the overall population prevalence rate. The sub group ratios are calculated at the national level. Thus:

$$\hat{R}_{dhb,d} = \hat{R}_{dhb} \frac{\hat{R}_{NZ,d}}{\hat{R}_{NZ}}$$

where $\hat{R}_{dhb}$ is the modelled rate for the DHB as published on PHI-online and,

$\hat{R}_{NZ,d}, \hat{R}_{NZ}$ are direct estimates of the prevalence rates at the national level for the sub group d and for all adults respectively.

The estimates of the mean square error (MSE) and hence the upper and lower confidence limits for the synthetic prediction, is the MSE for the modelled DHB estimate plus a term which takes into account the extra variance involved in estimating the ratio of national prevalence rates.

The synthetic predictions have been created for DHB planning purposes. They represent an estimate of the prevalence of each item for each of the sub-groups and will have the following properties:

They are consistent with the other DHB estimates produced from the NZHS (i.e. the grouped DHB estimates in Portrait of Health and the modelled estimates on PHI-online).

They can help answer questions such as: Given an overall regional prevalence rate, what is the likely prevalence rate for a sub-group living in the DHB (assuming that the relationships between the sub-group and the whole population, as observed in the NZHS, are also reflected in the region).

In statistical modelling terms, they are modelled estimates which take into account the main effects of region, ethnicity and gender but not second order not interaction terms between these main effects.

They will reflect the impacts of particular initiatives in a DHB that have an impact across the whole population of the DHB but not necessarily the impact of initiatives that target a sub-group (unless that sub-group represents a large proportion of the DHB population, in which case the impact of the initiative might well b seen in the modelled DHB estimates)

In summary it is important to note that these estimates have a more limited set of potential uses than the other estimates from NZHS. Mainly they will be useful for forward looking planning purposes, and caution should be exercised when using them for evaluation of particular regional initiatives, especially those that are targeted to a specific ethnic groups.