

# 2008 Wairarapa Maori Health Needs Assessment



**Wairarapa DHB**

Wairarapa District Health Board

Te Pūnaha Raukawa o Wairarapa



# HEALTH NEEDS ASSESSMENT WAIRARAPA MAORI PEOPLE

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# 1 INTRODUCTION

## 1.1 Background

The New Zealand Health and Disability Act 2000 requires District Health Boards (DHBs) to review and update their Health Needs Assessment (HNA) for their district populations at least every three years to inform their strategic plan updates

The Ministry of Health (2000) defines a “health needs assessment” as:

*“The assessment of the population’s capacity to benefit from health care services, prioritised according to effectiveness, including cost-effectiveness, and funded within available resources”.*

This definition describes a population-based approach; it does not refer to individual health care needs or individual disability support services.

Both “health” and “need” are difficult to define. There is no right or wrong definition; rather there are a number of ways of thinking about health needs which are complementary. Views on this vary between individuals, groups and cultures, but ought to include personal and social care, health care, accommodation, finance, education, employment and leisure, transport and access.

The Wairarapa District Health Board’s Health Needs Assessment 2008 provides an overview of the health status of the Wairarapa population and describes the population’s health needs, comparing them with the rest of New Zealand.

This Health Needs Assessment builds on the 2005 Health Status Report. It provides information that contributes to the development of DHB strategic plans and the measurement of outcomes of the policies and programmes implemented to achieve these plans. Consideration of community views, groups and cultures, and a cost-benefit analysis determine health priorities for the Wairarapa district.

## 1.2 Scope

This Health Needs Assessment describes the health and independence status of the Wairarapa DHB population and where possible, information on changes in the health status of the Wairarapa population. It illustrates the progress that the Wairarapa DHB is making in different areas.

The Health Needs Assessment:

- Collates data that contributes to development of service strategies and informs prioritisation and decision making processes.
- Provides a comprehensive data repository of information on key indicators that affect the health of the Wairarapa population.
- A resource for clinicians and providers to plan services.
- Informs the Wairarapa community and provides a basis for consultation.

## 1.3 Rationale

The Wairarapa DHB is tasked with protecting, improving and maintaining the health of the Wairarapa population. The health of our population is often determined by factors outside health services. Understanding the broader determinants of health in the Wairarapa and working intersectorally with other agencies will enable the DHB to influence these factors. For example, addressing the health needs resulting from poor housing in the Wairarapa would mean both treating illness (such as respiratory infections) and working with community agencies to improve housing conditions.

## 1.4 Data Sources

Data provided to the Ministry of Health's National Minimum Dataset (NMDS) by DHBs and data from Statistics NZ has been analysed by Central Region Technical Advisory Services (TAS) to provide the comparative information for the Wairarapa and New Zealand.

Other sources of data included:

|  |   |
|--|---|
| Alcohol Advisory Council of New Zealand (ALAC) | Public Health Intelligence (MOH)  |
| Breast Screen Aotearoa                         | Smarter Homes NZ  |
| Disability Survey 2006 (Stats NZ)              | SPARC (Sport & Recreation New Zealand)  |
| Energy Smart                                   | Statistics New Zealand  |
| ESR (Environmental Science & Research)         | Te Puni Kokiri  |
| Greater Wellington Region Council              | Te Rau Hinengaro – The NZ Mental Health Survey  |
| Local and Regional Councils                    | Violence Free Wairarapa   |
| Ministry for the Environment                   | Wairarapa Addiction Services Inc. NZ Health Survey 2002/03  |
| Ministry of Health                             | Wairarapa Community PHO   |
| Ministry of Social Development                 | Wairarapa Healthy Homes   |
| National Cervical Screening Programme          | Wairarapa Lifestyle Magazine – <a href="http://www.wairarapalifestyle.co.nz">www.wairarapalifestyle.co.nz</a> |
| NZ Kidney Foundation                           | Wellington Independent Practitioners Association (WIPA)   |
| NZ Paediatric Society                          | Wikipedia website   |
| Pharmac  | World Health Organisation   |
| Plunket  | <a href="http://www.wairarapanz.com">www.wairarapanz.com</a>  |

## 1.5 Data Limitations

All statistics have limitations, and caution is required in the interpretation of data. Absolute numbers of events are frequently very small in Wairarapa DHB for some health events. In particular, within the Pacific Island community the addition of one or two extra events may affect percentages by as much as 30-50% in any one year.

When comparing local and national data large variations in calculated rates can occur because of regional differences in coding practices. Local knowledge assists in understanding the stories behind the data, and has been included where possible.

The information presented in this report has been collected from a range of sources. Not all figures are comparable as data date ranges differ. e.g.

- Census: 2006
- Hospitalisations: 2000-2006 inclusive (7 years)
- Mortality: 1994-2004 inclusive (11 years)

Changes may have occurred since the data source dates. Additionally, demographic projections may become inaccurate over time.

Most of the data used in this report relates to use of health services, principally hospitalisations. Use of service utilisation data as a proxy for measuring need has serious limitations. Readers need to bear in mind that this data provides only an indication of need and not an absolute measure.

## 1.6 Glossary

### Age Standardised Rate ratios (ASRR)

Age-standardisation adjusts rates to take into account how many old or young people are in the population being looked at. When rates are age-standardised you know that differences in the rates over time, or between geographical areas, do not simply reflect variations in the age structure of the populations. For example, cancer is a disease that predominantly affects the elderly. So if cancer rates are not age-standardised, a higher rate in one geographical area is likely to reflect the fact that it has a greater proportion of older people.

### Avoidable Hospitalisations (AH)

Avoidable Hospitalisations are admissions to hospital when the primary cause of admission is diagnosed as a preventable injury (IP) or an avoidable condition. **AH = PH + ASH + IP**

- **Preventable Hospitalisations (PH)**

Hospitalisations which result from diseases that are largely preventable by population-based health promotion strategies, such as smoking cessation.

- **Ambulatory Sensitive Hospitalisations (ASH)**

Hospitalisations resulting from conditions which are sensitive to prophylactic or therapeutic interventions delivered in a primary health care setting e.g. early diagnosis, immunisation, screening.

- **Preventable Injuries (IP)**

These are mainly accidents, including poisoning and deliberate self harm, but excluding injuries sustained as a result of assault.

### Avoidable Mortality

The concept of avoidable mortality relates to deaths that are potentially preventable through population-based interventions (e.g. health promotion) and preventative and curative interventions at an individual level.

### Cancer Registrations

Diagnoses of cancer are required to be registered with the New Zealand Cancer Registry which is a population-based register of all primary malignant diseases diagnosed in New Zealand, excluding squamous cell and basal cell skin cancers.

### Census Area Unit (CAU) – see also Deprivation

Census area units are aggregations of mesh-blocks. They are commonly known as a suburb or geographic area within a territorial authority, with a maximum population of approximately 5,000.

### Current smoker

A current smoker is someone who has smoked more than 100 cigarettes in their lifetime and currently smokes at least once a month.

### Deprivation

Deprivation is a state of observable and demonstrable disadvantage relative to the local community or the wider society or nation to which an individual, family or group belongs. Deprivation scores have been divided into either 5 even groups (quintiles), or 10 even groups (deciles) to compare areas with the least deprivation (quintile/decile 1) and areas with the most deprivation (quintile 5 or decile 10).

Calculation of deprivation uses a range of variables from the 2006 Census of Population and Dwellings which represent nine dimensions of social deprivation. The Social Deprivation Index is calculated at mesh-block level, and built up to the relevant geographic scale using weighted average census usually-resident population counts. The nine variables (proportions in small areas) in decreasing weight in the index are: personal income, employment, household income, communication, transport, support, qualifications, living space and home ownership.

*Note: the deprivation index applies to areas rather than individuals who live in those areas.*

### Disability

An umbrella term for impairments, activity limitation and participation restriction, as influenced by environmental factors.

## **District Health Board (DHB)**

District Health Boards are responsible for providing, or funding the provision of, health and disability services in their area. There are 21 District Health Boards in New Zealand.

## **DHB of Domicile**

The DHB responsible for the health care of people living within its geographical area.

## **Ethnicity**

A social construct of group affiliation and identity. Members of an ethnic group have one or more of the following four characteristics:

- \* they share a sense of common origins
- \* they claim a common and distinctive history and destiny
- \* they possess one or more dimensions of collective cultural individuality
- \* they feel a sense of unique collective solidarity.

Ethnicity is self-perceived and people can belong to more than one ethnic group. People can and do change their ethnic affiliation, both over time and in different contexts.

## **Health condition**

A doctor-diagnosed physical or mental illness that has lasted, or is expected to last, for more than 6 months. The symptoms may come and go or may be present all the time.

## **ICD 10**

The International Statistical Classification of Diseases and Related Health Problems (most commonly known by the abbreviation ICD) provides codes to classify diseases and a wide variety of signs, symptoms, abnormal findings, complaints, social circumstances and external causes of injury or disease. Every health condition can be assigned to a unique category and given a code, up to six characters long. The ICD is revised periodically and is currently in its tenth edition (ICD 10).

## **Impairment**

Problems in body function or structure such as significant deviation or loss.

## **Incidence**

The number of new cases within a specified time period divided by the size of the population initially at risk. For example, if a population initially contains 1,000 non-diseased persons and 28 develop a condition over two years of observation, the incidence proportion is 28 cases per 1,000 persons, i.e. 2.8%.

## **Life Expectancy**

Life expectancy is a summary measure of population health, reflecting mortality at all ages from all causes. Life expectancy at birth is an estimation of the age to which children born now can expect to live to should current mortality rates persist for the whole of their life.

## **Prevalence**

The actual burden of disease or disability experienced by the population of interest. This is usually measured by the cases of the disease in the population at a given time, or the total cases in the population, divided by the number of individuals in the population. It is used as an estimate of how common a condition is within a population over a certain period of time. It helps in understanding the probability of certain diagnoses in the population group.

## **Primary Health Organisation**

Primary Health Organisations (PHOs), in New Zealand, are a collection of health providers, which are funded on a capitation basis by the New Zealand Government via its District Health Board. They are usually set up as not-for-profit trusts, and have as their goal the improvement of their population's health.

## **Statistical significance**

In statistics, a result is called statistically significant if it is unlikely to have occurred by chance. "A statistically significant difference" simply means there is statistical evidence that there is a difference; it does not mean the difference is necessarily large, important, or significant in the common meaning of the word.

## **1.7 Key Findings Summary**

### **1.7.1 The Health Status of Maori people in the Wairarapa District**

- Wairarapa Maori females have a slightly longer life expectancy than Maori females in the rest of the country.
- The top three causes of mortality for Wairarapa Maori between 1994 and 2004 were diseases of the circulatory system (35%), cancers (30%), and due to external causes (10%).
- The age standardised mortality rate for Wairarapa Maori is higher than the Non Maori Wairarapa rate. The trend for both ethnic groups has remained similar over the ten year period 1994 to 2004.
- Wairarapa Maori Adults aged between 25-44 years - the leading cause of death for this age group between 1994 and 2004 was as a result of External causes. These were mainly due to car accidents and Intentional self harm (suicide). Males comprised 86% of the deaths from External causes within this age group.
- Wairarapa Maori Adults aged 65+ - the leading causes of death for this age group between 1994 and 2004 were due to Circulatory system disease or Cancer, making up 81% of the total within this age group. Chronic Ischemic heart disease made up 38% of the total deaths due to Circulatory system disease. The cancer most prevalent was neoplasm of the bronchus and lung for this age group, and affected twice as many Wairarapa Maori females than Wairarapa Maori males.
- Avoidable Mortality, as a percentage is 6% higher for Wairarapa Maori men at 53% than it is for Wairarapa Maori women at 47%.

### **1.7.2 Access to services and The utilisation of services**

- The percentage of hospital discharges for Wairarapa Maori increased by 10% between the 2004/05 and 2006/07 financial year periods.
- The number of Elective Admissions to Wairarapa Hospital as a percentage of the total population for Wairarapa Maori increased in the 2006/07 year for those aged between 55 and 70 years of age.
- There has been a significant reduction in the number of Ambulatory Sensitive and Preventable Admissions to Wairarapa Hospital as a percentage of the total ethnic population for Wairarapa Maori in the 60-64 age group in both the 2005/06 and 2006/07 years, compared to 2004/05 financial year period.

### **1.7.3 Risk and protective factors**

#### **Smoking**

- Most adults who smoke begin smoking before the age of 18 years, and there is evidence to show that the younger people begin smoking, the more likely they are to become strongly addicted to nicotine. Females are more likely to become smokers in this age group than males.
- Maori women have the highest smoking percentage in Wairarapa (47.4% smoke).
- The percentage of Maori men who have never smoked is slightly higher than those who smoke regularly.

#### **Nutrition**

- Maori have a lower prevalence of adequate fruit and vegetable intake compared to non Maori.

#### **Obesity**

- Levels of obesity of both males and females are worse in the Wairarapa than across New Zealand as a whole, with Maori being more obese than non Maori.

#### **Physical Activity**

- Local initiatives aiming to improve health and physical fitness in the Wairarapa include implementation of the Wairarapa Physical Activity Plan.

#### **Drug and Alcohol**

- Non-Maori were significantly more likely to have consumed alcohol in the last 12 months compared to Maori. Among past-year drinkers, non-Maori consumed alcohol significantly more frequently than Maori. However, Maori drinkers were significantly more likely to consume a large amount of alcohol on a typical drinking occasion, and to consume a large amount of alcohol at least weekly, compared to non-Maori drinkers.
- Wairarapa Maori have a higher prevalence of current hazardous drinking than their New Zealand counterparts.

#### 1.7.4 Chronic conditions

##### **Circulatory System Disease**

- Of the circulatory system diseases, Angina pectoris was the most frequent reason for hospitalisation in the Wairarapa between 2000 and 2006, while chronic ischaemic heart disease and acute myocardial infarction (heart attack) and were the leading causes of death for Wairarapa Maori.
- Mortality rate trends for Wairarapa Maori due to all types of Circulatory System diseases show decreases between 1994 and 2004 and are trending below their respective New Zealand rates.

##### **Diabetes**

- Diabetes is the most common cause of kidney failure in New Zealand.
- Hospitalisation rates due to all types of diabetes for Maori, both in the Wairarapa and New Zealand, have increased with the rate for Wairarapa at 2006 significantly higher than the rate for New Zealand Maori.

##### **Renal Failure and Kidney Disease**

- Chronic kidney disease and its effects account for one third of New Zealand's health costs and numbers of sufferers are set to increase dramatically.
- Wairarapa hospitalisation rates due to Kidney disease and Renal failure are significantly below the New Zealand rates.
- Wairarapa Maori females had more hospitalisations (55%) due to Kidney disease and Renal failure than Wairarapa Maori males (45%) during the year 2000 to 2006 period. The highest number of hospitalisations occurred in the 40-44 year age group for both genders.
- The percentage of hospitalisations of Wairarapa Maori due to Renal Failure and Kidney Disease are similar to the Maori national percentages, although hospitalisations due to Calculus of kidney and ureter (kidney stones) were 9% higher in the Wairarapa. Research has found that risk factors for kidney stones include type II diabetes and obesity.
- During the 10 year period between 1994 and 2004 there were 4 deaths of Wairarapa Maori due to Kidney Disease and Renal Failure This accounted for 9% of the total Wairarapa population deaths due to this cause.

##### **Respiratory Disease**

- The percentage of Respiratory disease hospitalisations for Wairarapa Maori is similar to that of New Zealand Maori between the year 2000 and 2006. Wairarapa Maori have a slightly higher hospitalisation percentage for Acute bronchiolitis.
- Wairarapa Maori hospitalisation rates for both Acute bronchiolitis and Pneumonia are decreasing.
- Maori children (both genders) up to the age of 10 years of age have more hospitalisations due to Respiratory disease, accounting for 57% of the total. This decreases significantly from then and peaks again in the 65-69 age band.
- Between 1994 and 2004 Respiratory disease mortality rates for Wairarapa Maori show no change. The cause that resulted in the highest numbers of deaths for Wairarapa Maori was Other chronic obstructive pulmonary disease.

#### 1.7.5 Cancer

- Cancer was the second leading cause of mortality among Wairarapa Maori, accounting for 30% of deaths (84) between 1994 and 2004. This is 4% higher than for New Zealand Maori overall.
- Wairarapa Maori cancer registration rates have increased, while the rate for New Zealand Maori has remained similar over the ten year period between 1994 and 2004.

- Among all malignant cancer registrations for Maori in the Wairarapa between 1994 and 2004, the most common was lung cancer, followed closely by breast cancer. Wairarapa Maori had a slightly higher registration for these two cancers than New Zealand Maori.
- Cancer hospitalisations rates have increased slightly for Wairarapa Maori and are above the New Zealand rate for Maori, but not significantly.
- It is evident that each ethnicity has different treatment requirements, eg: breast and lung cancer hospitalisations are higher for Maori, whereas neoplasms of the skin are higher for those of Other ethnicities.
- Breast cancer registrations are forecast to increase further over the next decade, as a result of the Breast Screen Aotearoa Programme. Maori women have higher breast cancer registration rates, compared to women of either Pacific or Other Ethnicities.
- Among all malignant cancer deaths of Wairarapa Maori between 1994 and 2004, the most common was due to lung cancer, followed by stomach cancer.
- Lung cancer has the highest mortality, followed by cancer of the colorectum and anus. Maori were affected more by lung cancer, whereas those of Other ethnicities were affected more by cancer of the colorectum and anus. This is similar to New Zealand overall.
- Mortality rates for Wairarapa Maori due to Colorectal cancer decreased significantly between 1994 and 2004.
- The top three cancers causing avoidable mortality for Wairarapa Maori are Lung cancer, stomach cancer and breast cancer.

#### **1.7.6 Mental Health**

- The age-standardised self-harm hospitalisation rates, comparing Maori with Non-Maori shows the rate for Wairarapa Maori is significantly higher than the New Zealand Maori rate, and was 3rd highest compared to other DHBs in 2006. The rate for Wairarapa Non-Maori is very similar to the New Zealand rate.
- Hospitalisation rates for Wairarapa Maori due to Mental Health Conditions (all types) was above that of the New Zealand Maori rate in the year 2000 and has significantly decreased during the year 2000 to 2006 period.
- Schizophrenia is the main reason for mental health hospitalisations, both for Wairarapa Maori and New Zealand Maori, with the national percentage being 9% higher than Wairarapa. Schizophrenia affects significantly more Wairarapa Maori males than females.
- Hospitalisations due to Mental and behavioural disorders due to the use of alcohol were the second most common cause (13%) of mental health hospitalisations of Wairarapa Maori between the year 2000 and 2006.
- Hospitalisations due to either Depressive episodes or Mental and behavioural disorders due to use of alcohol are higher for Wairarapa Maori, while hospitalisations due to Bipolar affective disorder are higher for New Zealand Maori.
- Self-harm hospitalisation rates for Wairarapa Maori are significantly higher than the New Zealand Maori rate.

#### **1.7.7 Child, Youth and Maternal Health**

- At the time of the 2006 census the total resident Wairarapa Maori Child and Youth population aged 0-24 years made up 54.1% of the total Wairarapa Maori population. The projections are that this population group will decrease by 5.6% by the year 2026.
- The most common cause of hospitalisations was due to factors influencing health (1,052 hospitalisations). Of this, there were 720 hospitalisations (68%) classed as ICD-10 code Z38, live-born infants according to place of birth. This refers to a newborn baby requiring admission to hospital immediately after birth or during the post natal period from the mother's bedside, whether born at hospital, home or elsewhere.

- Although the most common cause of hospitalisations was due to factors influencing health, the most common cause of hospitalisations for Wairarapa Maori females only in the 15-24 year age group was due to pregnancy complications.
- Marked ethnic differences in Oral Health status were evident with a lower proportion of Maori children being caries free at 5 years, and Maori children having higher mean DMFT scores at 12 years in both fluoridated and non-fluoridated areas.
- Increases in hospital admissions during 1996 – 2006 for serious bacterial infections were consistent with New Zealand trends. However, admission rates were lower than the New Zealand average. Rates remained consistently higher for Maori children and young people.
- In the Wairarapa during 1996-2006, hospital admissions for both lower respiratory tract infections and asthma were higher amongst Maori children.
- During 1996 – 2006 teenage birth rates for both Maori and European women were similar to their respective New Zealand ethnic specific averages.
- During 2006, 9.8% of children and young people lived in crowded households compared to 16.5% nationally. However 19% of Maori children and young people lived in crowded households compared to 5.6% European. Crowding rates for Wairarapa children and young people were lower than the New Zealand Maori average.
- There were marked ethnic differences in educational attainment at school leaving during 1995 – 2006 with higher proportions of Maori than European leaving school with little or no formal attainment.
- No routine surveillance of overweight and obesity in New Zealand children and young people occurs at present.
- During 2006, 60.3% of Maori children were living in a household with a smoker, as compared to 37.5% of European children.
- Immunisation rates for Maori children were higher than the New Zealand Maori average.

### **1.7.8 Older Maori Persons Health (65 Years of age and over)**

- The Older Wairarapa Maori population aged 65 years and over is projected to more than double during the 2006 and 2026 period.
- Wairarapa Maori females have a longer life expectancy than Wairarapa Maori males. Wairarapa Maori females live on average to the age of 77 years, while Wairarapa men live to the age of 68 years.
- While 5% of the Wairarapa Maori population is 65 years of age or older this group accounted for 10% of the entire Wairarapa population hospitalisations.
- The main reason for hospitalisations of Older Wairarapa Maori people was Respiratory System disease.
- Cancer was the leading cause of mortality for Older Wairarapa Maori people between 1994 and 2004.
- Circulatory system disease was the leading cause of avoidable mortality for older Wairarapa Maori people between 1994 and 2004. The two main causes being heart attack (Acute myocardial infarction) and chronic ischaemic heart disease.
- The second most common cause of death of avoidable deaths for Older Wairarapa Maori, affecting slightly more than twice as many females than males was due to Lung cancer.
- The use of residential care by Maori remains very minimal. It is likely that Older Wairarapa Maori people that require care would be cared for by their Whanau.
- No Wairarapa Maori people were hospitalised due to Dementia during this period.

### **1.7.9 Disability**

- 5% of Maori children had special education needs and this was the most common type of disability for Maori children.
- Almost all Maori with a disability lived in households (99%) and less than 1% lived in residential facilities.

- Of Maori adults, 19% had a disability. The most common causes of disability for Maori adults were disease or illness.
- For those Maori adults with a disability, 38% had a single disability and 62% had multiple disabilities.

#### **1.7.10 Injuries and Accidents**

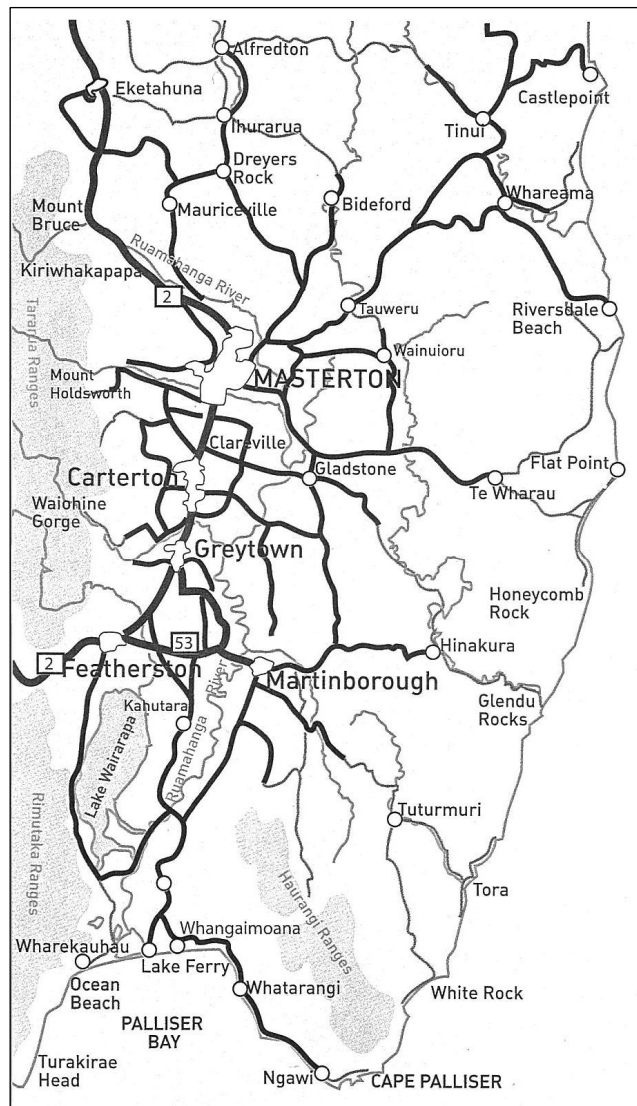
- Road traffic injuries (138 or 47%) and Suicide (70 or 24%) were the most common reasons for accident / injury related hospitalisations of Wairarapa Maori people between the year 2000 and 2006, accounting for 71% of this total.
- Wairarapa Maori males account for (68%) of the hospitalisations due to Road traffic injuries.
- The percentage of accident / injury hospitalisations for Wairarapa Maori males between the ages of 15-24 was 18%, compared to 10% for Wairarapa Maori females in the same age group.
- Between 1994 and 2004, 92% of accidental deaths of Wairarapa Maori were due to either transport accidents (8) or Suicide (4).

## 2 THE DEMOGRAPHIC PROFILE OF MAORI PEOPLE IN THE WAIRARAPA DISTRICT

This chapter reviews the Wairarapa District Maori demographic trends. It looks at the current population size and future projections, and present, future age and ethnic compositions.

The Wairarapa district is located in the southeast of the North Island and includes three Territorial Local Authorities (TLA's) Masterton, Carterton and South Wairarapa. It extends from the Rimutaka Hill in the west to Ocean Beach in the south and Mount Bruce in the north, a total of 5,936 square kilometres. The area forms part of the Greater Wellington Regional Council, participates in the Wellington Regional Strategy, but is separated geographically from the rest of the Wellington region by the Rimutaka Ranges.

At the time of the 2006 census the total resident Wairarapa Maori population was 5,496 people.



Masterton is located in the heart of the Wairarapa region of New Zealand. It is about an hour and a half's drive from both Wellington and Palmerston North.

Masterton comprises one large urban town and a diverse rural district. Rural districts include the coastal resorts of Castlepoint and Riversdale, the strong farming communities of Tinui, Wainuioru and Mauriceville and large tracts of forestry on the eastern hill country. The 2006 Census Total Maori Population for Masterton was 3,726 people.

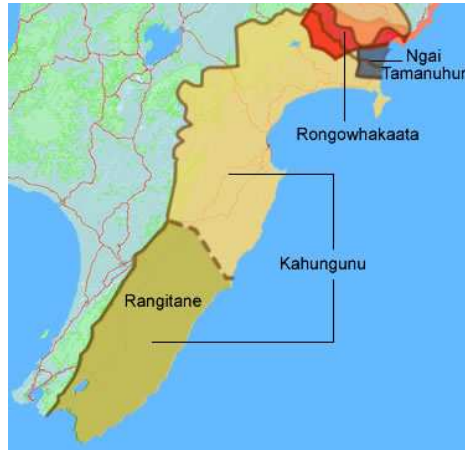
The Carterton Total Maori population from the 2006 Census was 681 people. Carterton is located south of Masterton and covers an area of 1,145 square kilometres. Carterton is bounded by the Waiohine River to the south and the Waingawa River to the north and stretches from the Tararua Ranges to the west and to the Pacific Ocean to the east. Originally known as Three Mile Bush, Carterton was established in 1857 to house workers building the road between Greytown and Masterton.

South Wairarapa is situated at the southern most corner of the North Island and has an area of approximately 2484 square kilometres. In the south, the boundary follows the coastline from the western end of Palliser Bay in Cook Strait to Honeycomb Rock, east of Martinborough. The western boundary follows the main divide of the Rimutaka and Tararua Ranges to Mount Hector, from which the boundary runs southeast across the Wairarapa Plains to the coast.

South Wairarapa includes the towns of Featherston, Greytown and Martinborough which are the main population centres.

Principal activities in South Wairarapa are fruit and vegetable (Greytown), pastoral agriculture, wine and olives. This area is also developing into a popular retirement, lifestyle and commuter base for people working in Wellington city. The 2006 Census Total Maori Population for South Wairarapa was 1,089 people.

Rangitane and Ngati Kahungunu are the principal Maori Iwi in the Wairarapa.



### Rangitāne (North Island)



#### Rohe (Tribal Area)

This rohe of Rangitāne (North Island) extends into the regions or districts of the following local authorities.

#### Regional Councils

- Horizons Regional Council (Manawatu-Wanganui)
- Greater Wellington Regional Council

#### Territorial Authorities

- Manawatū District Council
- Palmerston North City Council
- Tararua District Council
- Horowhenua District Council
- Masterton District Council
- Carterton District Council
- South Wairarapa District Council

### Ngāti Kahungunu



#### Rohe (Tribal Area)

The rohe extends from the Wharerata Ranges in the Wairoa District extending to Cape Palliser in South Wairarapa. The coastal boundaries are Paritu in the north to Turakirae in the south.

#### Regional Councils

This rohe of Ngāti Kahungunu extends into the regions or districts of the following local authorities.

- Hawke's Bay Regional Council
- Horizons Regional Council (Manawatu-Wanganui)
- Greater Wellington Regional Council

#### Territorial Authorities

- Wairoa District Council
- Hastings District Council
- Napier City Council
- Central Hawke's Bay District Council
- Tararua District Council
- Masterton District Council
- Carterton District Council
- South Wairarapa District Council

## 2.1 Demographic Factors

Even when the specific health status of a given population cannot be measured directly, we can infer some information from its broader characteristics. By understanding the distribution of social and economic factors within populations it is possible to predict resulting levels of health and illness.

Four characteristics have been shown to be excellent indicators of population health status:

- Age: Age is the strongest indicator of need for health services.
- Gender: Gender is the next most important indicator. Women have higher morbidity than men across their life-span, while men die at significantly younger ages.
- Ethnicity: Ethnicity has repeatedly been shown to be a strong indicator of health status. Maori and Pacific people have poorer health statistics than Non-Maori people.
- Index of Deprivation: Socioeconomic status, incorporating variables such as income, education and unemployment, is recognised as a major indicator of health.

## 2.2 Population Change

At the time of the 2006 census the total resident Wairarapa Maori population was 5,496 people. This was an overall increase of 1.7% from the 2001 census. Between the 2001 and 2006 Census, the Wairarapa Maori population proportion has remained similar to New Zealand. However, in 2006 the proportion of Maori living in Masterton was 2.5% higher than the Maori proportion nationally.

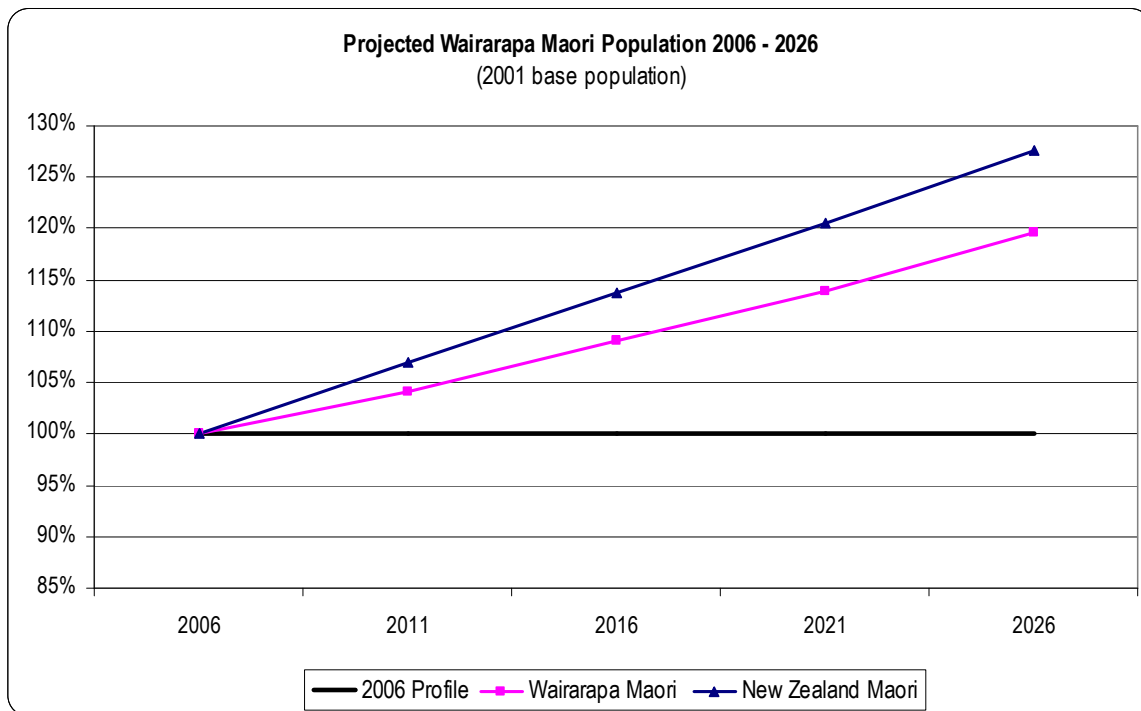
### Wairarapa Maori Population by Territorial Authority 2001 Census to 2006 Census

| Locations              | Maori 2001   |              | Maori 2006   |              | Change 2001 - 2006 |             |
|------------------------|--------------|--------------|--------------|--------------|--------------------|-------------|
|                        | Number       | %            | Number       | %            | Number             | %           |
| South Wairarapa        | 1,092        | 12.5%        | 1,089        | 12.3%        | -3                 | -0.3%       |
| Carterton              | 699          | 10.2%        | 681          | 9.6%         | -18                | -2.6%       |
| Masterton              | 3,612        | 16.0%        | 3,726        | 16.5%        | 114                | 3.1%        |
| <b>Total Wairarapa</b> | <b>5,403</b> | <b>14.1%</b> | <b>5,496</b> | <b>14.2%</b> | <b>93</b>          | <b>1.7%</b> |
| New Zealand            | 526,281      | 14.08%       | 565,326      | 14.0%        | 39,045             | 6.9%        |

## 2.3 Demographic Population Projections

The following graph compares the Wairarapa Maori population change to the New Zealand Maori total. The graph illustrates both Wairarapa Maori and New Zealand Maori population projections against the Wairarapa 2006 population profile if the population remained static until 2026.

The Wairarapa Maori population is projected to increase by 20% between 2006 and 2026, compared with New Zealand Maori population which is projected to increase by 28% in the same period.



### Projected Maori Population 2006 - 2026

| Location          | 2006    | 2011    | 2016    | 2021    | 2026    |
|-------------------|---------|---------|---------|---------|---------|
| Wairarapa Maori   | 6,100   | 6,350   | 6,650   | 6,950   | 7,300   |
| New Zealand Maori | 630,300 | 674,500 | 716,600 | 759,600 | 804,200 |

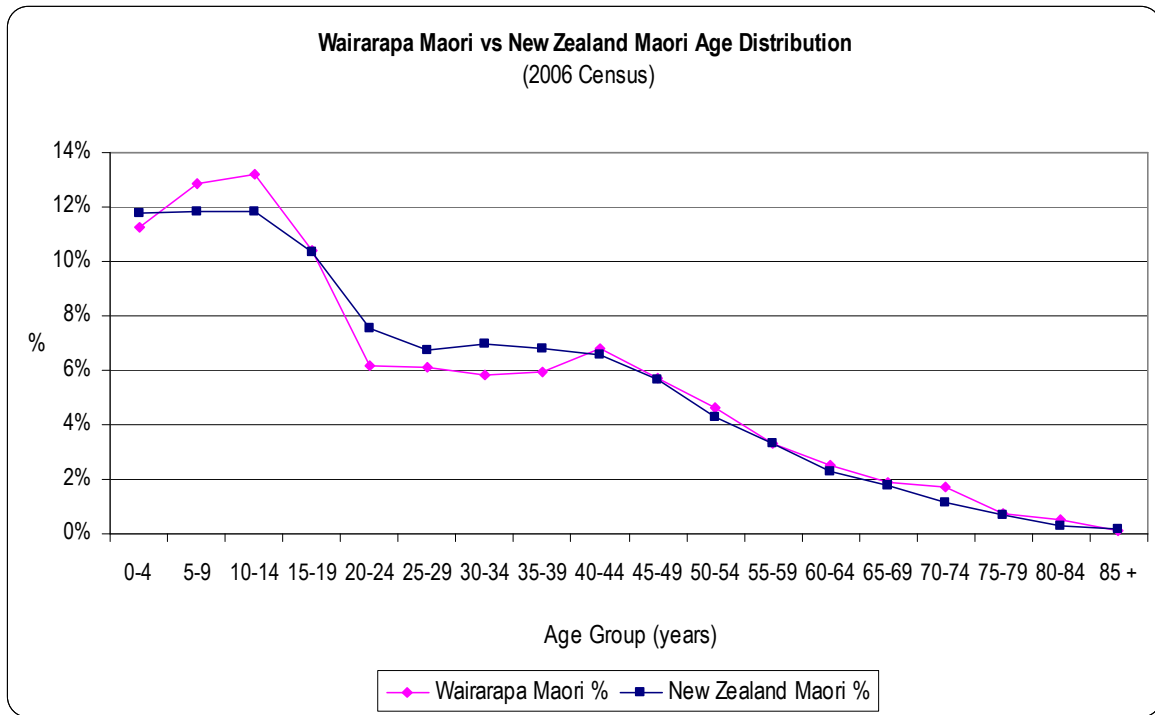
#### Projection Notes:

(1) Boundaries at 1 July 2004.

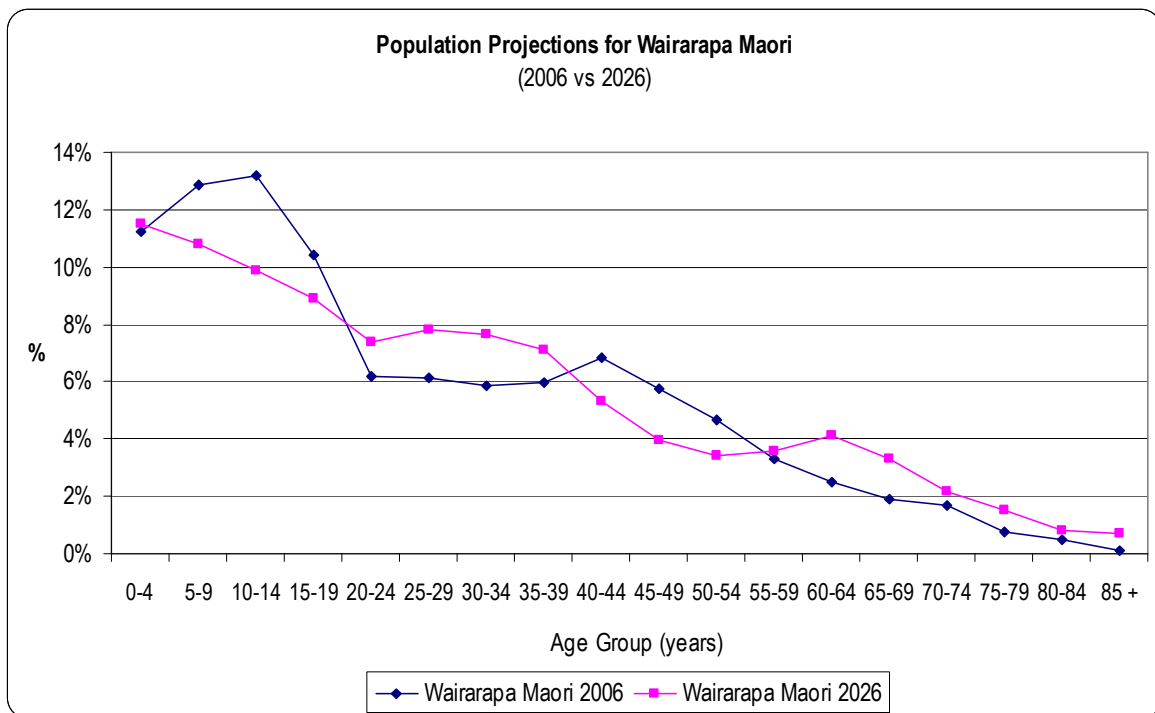
(2) These projections have as a base the estimated resident population of each area at 30 June 2001 and incorporate medium fertility, mortality and migration assumptions for each area.

## 2.4 Age Group Distribution

The overall age distribution for Wairarapa Maori shows a peak in the 10-14 year age group. The pattern for Wairarapa Maori is very similar to that of New Zealand Maori. The Wairarapa has high proportions of Maori children and youth, but significantly lower proportions of young people for all three major ethnic groups.



The graph below shows the Wairarapa Maori population age distribution comparing 2006 census with the 2026 projections. The Wairarapa Maori population is expected to increase by 20% between 2006 and 2026 with the largest growth being for the 20-39 year age group and for those over 60 years of age. Both these groups are projected to increase by 6%.



## Wairarapa Maori Population for Age Groups – 2006 Census

| Locations                    | Number of people Aged |              |              |              |             |
|------------------------------|-----------------------|--------------|--------------|--------------|-------------|
|                              | 0-14                  | 15-24        | 25-44        | 45-64        | 65+         |
| South Wairarapa              | 399                   | 153          | 264          | 207          | 60          |
| Carterton                    | 267                   | 93           | 177          | 114          | 36          |
| Masterton                    | 1,395                 | 666          | 918          | 570          | 177         |
| <b>Total Wairarapa Maori</b> | <b>2,061</b>          | <b>912</b>   | <b>1,359</b> | <b>891</b>   | <b>273</b>  |
| Percentages                  |                       |              |              |              |             |
| <b>Wairarapa Maori</b>       | <b>37.5%</b>          | <b>16.6%</b> | <b>24.7%</b> | <b>16.2%</b> | <b>5.0%</b> |
| New Zealand Maori            | 35.36%                | 17.92%       | 27.14%       | 15.49%       | 4.09%       |

Source: 2006 Census

## Wairarapa Maori Population Projection 2026 for Age Groups

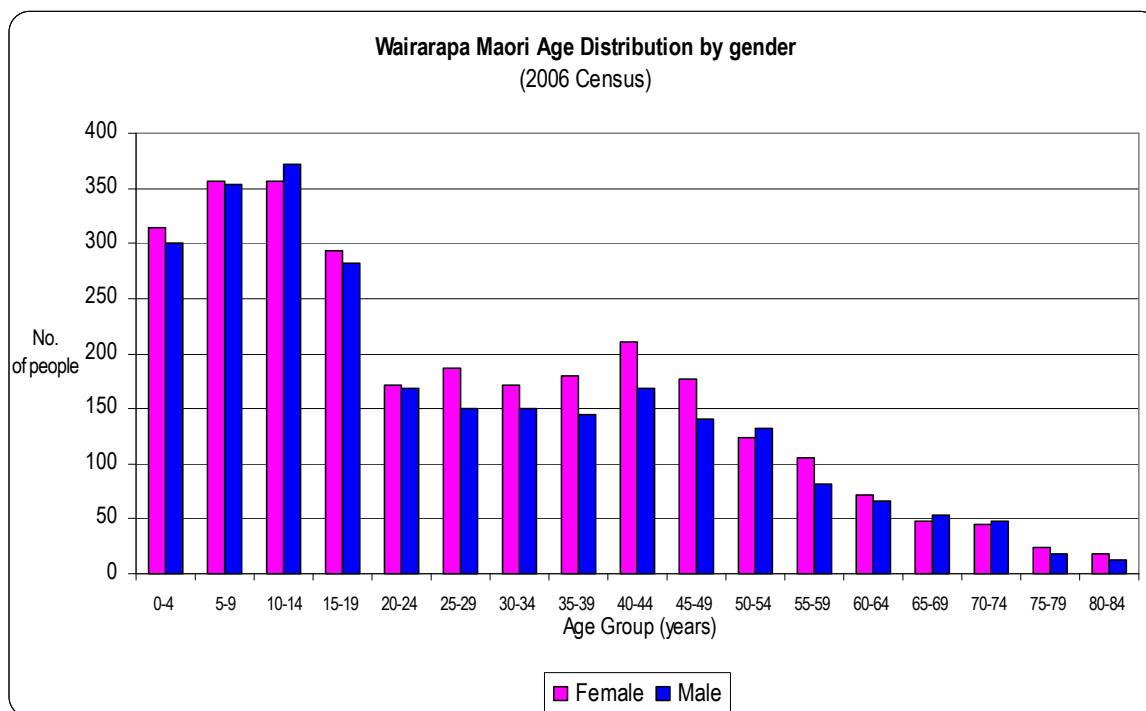
| Locations                               | 2026 Percentages Aged |       |       |       |      |
|---|-----------------------|-------|-------|-------|------|
|   | 0-14                  | 15-24 | 25-44 | 45-64 | 65+  |
| <b>Wairarapa Maori</b>                  | 32.2%                 | 16.3% | 27.9% | 15.1% | 8.5% |
| Percentage change 2006 -2026 projection |                       |       |       |       |      |
| <b>Wairarapa Maori</b>                  | -5.3%                 | -0.3% | 3.2%  | -1.1% | 3.5% |

Source: Statistics New Zealand

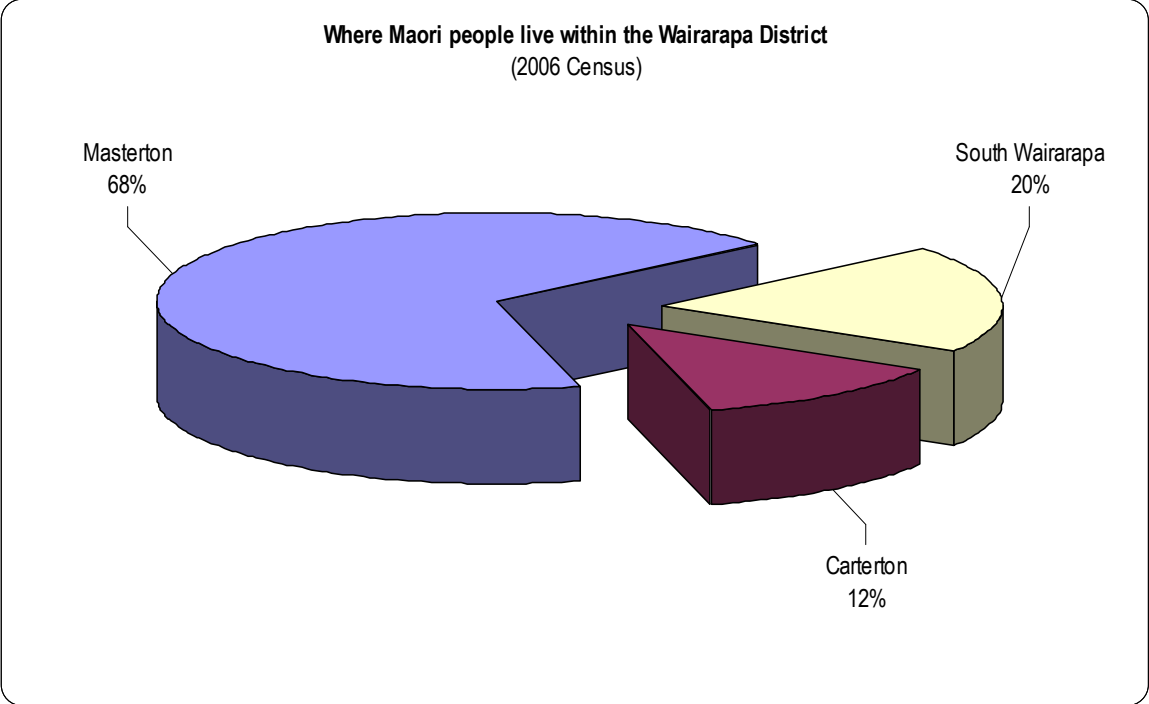
## 2.5 Gender Group Populations

The 2006 Census data shows no significant differences for Wairarapa Maori males and females compared to the total Wairarapa population. Of the Wairarapa Maori population 52% are females and 48% males.

The following graph shows noticeably greater numbers of females between the 25-49 year age group.



2.6 Geographical Populations



### 3 THE HEALTH STATUS OF MAORI PEOPLE IN THE WAIRARAPA DISTRICT

#### Key Findings for the Wairarapa

- Wairarapa Maori females have a slightly longer life expectancy than Maori females in the rest of the country.
- The top three causes of mortality for Wairarapa Maori between 1994 and 2004 were diseases of the circulatory system (35%), cancers (30%), and due to external causes (10%).
- The age standardised mortality rate for Wairarapa Maori is higher than the Non Maori Wairarapa rate. The trend for both ethnic groups has remained similar over the ten year period 1994 to 2004.
- Wairarapa Maori Adults aged between 25-44 years - the leading cause of death for this age group between 1994 and 2004 was as a result of External causes. These were mainly due to car accidents and Intentional self harm (suicide). Males comprised 86% of the deaths from External causes within this age group.
- Wairarapa Maori Adults aged 65+ - the leading causes of death for this age group between 1994 and 2004 were due to Circulatory system disease or Cancer, making up 81% of the total within this age group. Chronic Ischemic heart disease made up 38% of the total deaths due to Circulatory system disease. The cancer most prevalent was neoplasm of the bronchus and lung for this age group, and affected twice as many Wairarapa Maori females than Wairarapa Maori males.
- Avoidable Mortality, as a percentage is 6% higher for Wairarapa Maori men at 53% than it is for Wairarapa Maori women at 47%.

#### 3.1 Life Expectancy for the Wairarapa District Population

##### Life Expectancy

Life expectancy is a summary measure of population health, reflecting mortality at all ages from all causes. Life expectancy at birth is an estimation of the age to which children born now can expect to live to should current mortality rates persist for the whole of their life.

##### Current levels and trends

Females have a longer life expectancy at birth than males and non Maori have a greater life expectancy at birth than Maori. Since 1980 the female advantage over males has decreased as male life expectancy has improved more than that of females.

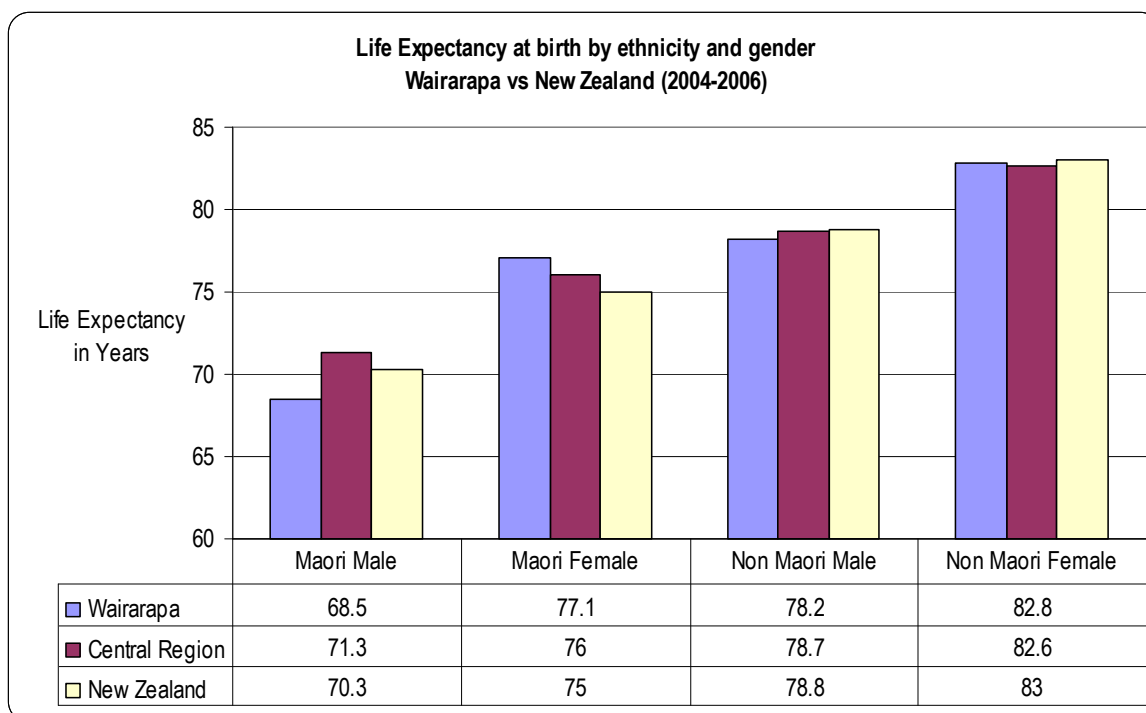
There is a correlation between deprivation and life expectancy. With the exception of Maori females, people in Wairarapa have a slightly shorter life expectancy than the New Zealand average. Overall, Wairarapa men live on average to the age of 77.1 years and Wairarapa women to the age of 82.6 years.

##### Life Expectancy at birth by ethnicity - 2004-2006

| Location       | Maori Male | Maori Female | Non Maori Male | Non Maori female |
|----------------|------------|--------------|----------------|------------------|
| Wairarapa      | 68.5       | 77.1         | 78.2           | 82.8             |
| Central Region | 71.3       | 76           | 78.7           | 82.6             |
| New Zealand    | 70.3       | 75           | 78.8           | 83               |

Source: Public Health Intelligence

Life expectancy in both New Zealand and Wairarapa is expected to continue to increase for the period until 2026. However, Wairarapa life expectancy is predicted to remain slightly below the national average throughout this period.



*Source: Public Health Intelligence*

Public Health Intelligence concluded there are no significant differences in life expectancy between Wairarapa and New Zealand or Central region for these demographic groups for the period being looked at.

### 3.2 Mortality

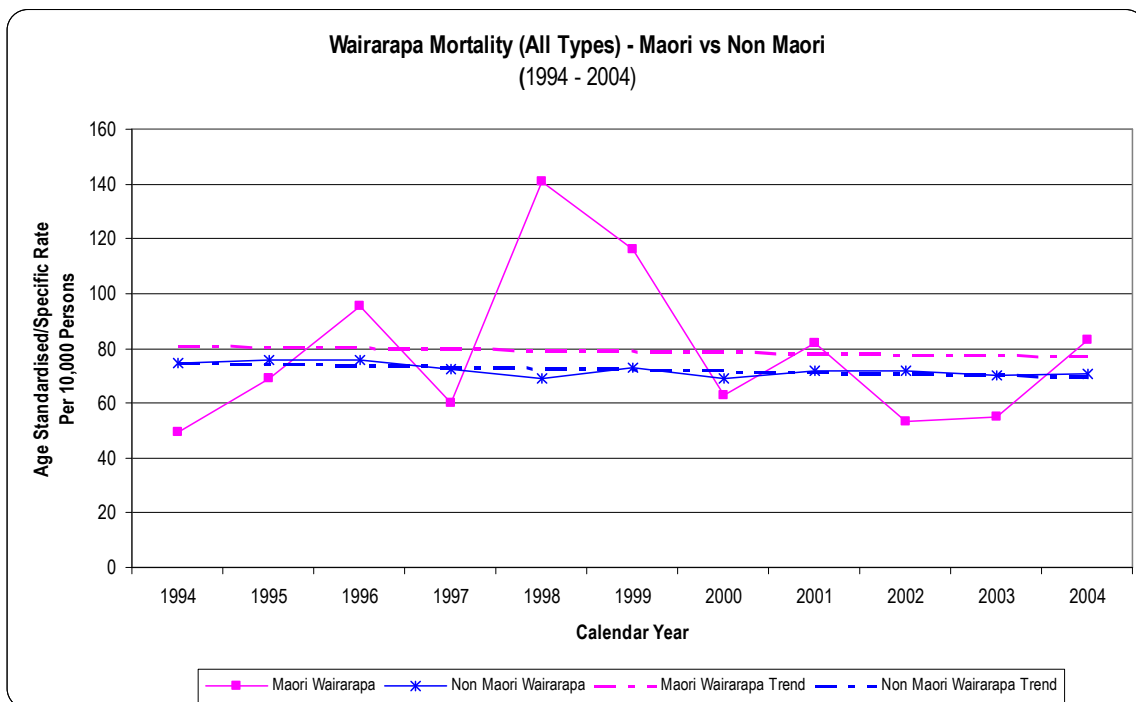
Between 1994 and 2004, there were a total of 284 deaths of Wairarapa Maori people.

The top three causes of mortality of Wairarapa Maori between 1994 and 2004 were diseases of the circulatory system – also known as Cardiovascular disease (35%), Cancers (30%), and deaths due to External causes (10%). Deaths as a result of External causes are considered to be either accidental or intentional, e.g. Accidents (both Vehicle and Non Vehicle), Falls, Drowning, Poisoning, Intentional Self Harm, Assault (homicide).

The following table shows the top ten causes of death, comparing Wairarapa Maori to New Zealand Maori between 1994 and 2004. There is no significant difference between the Wairarapa and New Zealand percentages.

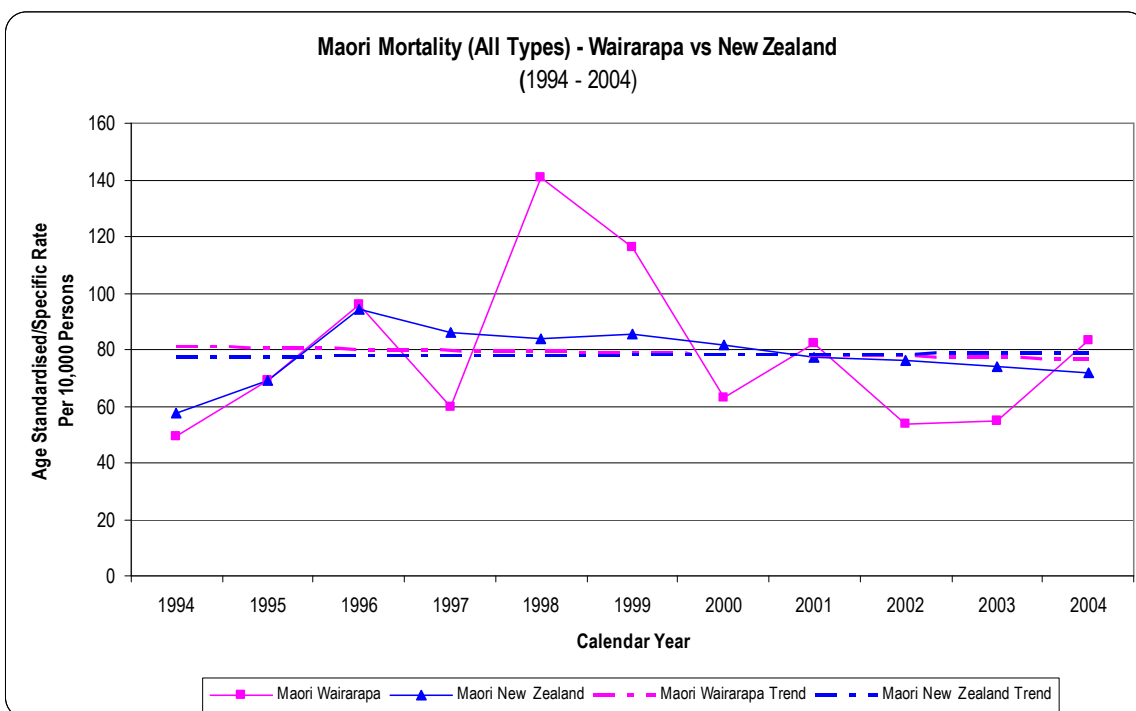
| International Classification of Disease (ICD10) Chapter | Maori       |             |
|---|-------------|-------------|
|   | Wairarapa   | New Zealand |
| Circulatory system                                      | 35%         | 34%         |
| Cancer  | 30%         | 26%         |
| External causes   | 10%         | 12%         |
| Respiratory system                                      | 8%          | 8%          |
| Endocrine, metabolic & immunity                         | 7%          | 8%          |
| Perinatal conditions                                    | 2%          | 2%          |
| Genitourinary system                                    | 2%          | 1%          |
| Congenital anomalies                                    | 1%          | 1%          |
| Ill-defined conditions                                  | 1%          | 2%          |
| Digestive system  | 1%          | 2%          |
| Other Causes  | 3%          | 4%          |
| <b>Total</b>  | <b>100%</b> | <b>100%</b> |

The age standardised mortality rate trend for Maori is higher than the Non Maori Wairarapa rate. The trend for both ethnic groups has remained similar over the ten year period 1994 to 2004. There were 284 deaths of Maori, and 3,489 deaths of Non-Maori between 1994 – 2004.



The age standardised mortality rate trends for both Wairarapa and New Zealand Maori has remained similar over the ten year period 1994 to 2004. The peak in 1998 was due to an increase in the number of deaths from lung cancer at that time.

Overall, there were 284 deaths of Wairarapa Maori between 1994 – 2004.



### 3.3 Mortality by Age Grouping

#### Wairarapa Maori Children Aged 0-14 Years

A total of 24 deaths of Wairarapa Maori children aged 0-14 years occurred between 1994 and 2004. The leading cause of death was due to External causes which was 14% higher for Wairarapa Maori compared to New Zealand Maori. These deaths were mainly due to accidental suffocation and strangulation in bed (22%) and Assault (homicide) by sharp object (22%).

#### Wairarapa Maori Children Aged 0-14 Years

##### Top five causes

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori |             | New Zealand Maori |
|---|-----------------|-------------|-------------------|
|   | No. of Deaths   | %           | %                 |
| External causes   | 9               | 38%         | 24%               |
| Perinatal conditions                                    | 5               | 21%         | 20%               |
| Congenital anomalies                                    | 3               | 13%         | 13%               |
| Ill-defined conditions                                  | 3               | 13%         | 24%               |
| Respiratory system                                      | 2               | 8%          | 5%                |
| Other Causes  | 2               | 7%          | 14%               |
| <b>Total</b>  | <b>24</b>       | <b>100%</b> | <b>100%</b>       |

#### Wairarapa Maori Youth Aged 15-24 Years

Between 1994 and 2004 there were a total of 7 deaths of Wairarapa Maori Youth aged between 15-24 years of age. The majority were due to External causes which were mainly due to car accidents.

#### Wairarapa Maori Adults Aged 25-44 Years

There were a total of 25 deaths of Wairarapa Maori adults aged 25-44 years between 1994 and 2004. The leading cause of death was as a result of External causes, mainly due to car accidents and Intentional self harm (suicide). Males comprised 86% of the deaths from External causes within this age group.

Cancer was the second leading cause of death, with each person suffering from a different form of Cancer. The majority of these deaths were females.

##### Top five causes

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori |             | New Zealand Maori |
|---|-----------------|-------------|-------------------|
|   | No. of Deaths   | %           | %                 |
| External causes   | 7               | 28%         | 39%               |
| Cancer - Malignant                                      | 5               | 20%         | 21%               |
| Circulatory system                                      | 4               | 16%         | 21%               |
| Genitourinary system                                    | 3               | 12%         | 1%                |
| Respiratory system                                      | 2               | 8%          | 4%                |
| Other Causes  | 4               | 16%         | 14%               |
| <b>Total</b>  | <b>25</b>       | <b>100%</b> | <b>100%</b>       |

#### Wairarapa Maori Adults Aged 45-64 Years

There were a total of 92 deaths of Wairarapa Maori adults aged 45-64 years between 1994 and 2004. The leading causes of death were as a result of Circulatory system disease or Cancer, making up 81% of the total within this age group.

The cancer most prevalent was neoplasm of the bronchus and lung, and affected twice as many Wairarapa Maori females than Wairarapa Maori males within the 45-64 age group.

Chronic Ischemic heart disease made up 38% of the total deaths due to Circulatory system disease for Wairarapa Maori within the 45-64 age group and affected twice as many Wairarapa Maori males than Wairarapa Maori females.

#### Top five causes

| International Classification of Disease (ICD10) Chapter | Wairarapa     |             | New Zealand |
|---|---------------|-------------|-------------|
|   | No. of Deaths | %           | %           |
| Circulatory system                                      | 40            | 43%         | 38%         |
| Cancer - Malignant                                      | 35            | 38%         | 34%         |
| Endocrine, metabolic & immunity                         | 10            | 11%         | 11%         |
| Respiratory system                                      | 5             | 6%          | 6%          |
| External causes   | 1             | 1%          | 5%          |
| Other Causes  | 1             | 1%          | 6%          |
| <b>Total</b>  | <b>92</b>     | <b>100%</b> | <b>100%</b> |

#### Wairarapa Maori Older People Aged 65 + Years

Between 1994 and 2004 there were a total of 136 deaths of Wairarapa Maori older people. The leading causes of death were due to Circulatory system disease (41%), Cancer (32%), and Respiratory system disease (10%). The volumes were slightly higher for females for all three causes. The following three tables show details of the causes of death for Wairarapa Maori older people over the age of 65 years.

#### Wairarapa Maori Older People Aged 65-74 Years – 74 Total Deaths

##### Top five causes

| International Classification of Disease (ICD10) Chapter | Wairarapa     |             | New Zealand |
|---|---------------|-------------|-------------|
|   | No. of Deaths | %           | %           |
| Cancer - Malignant                                      | 30            | 41%         | 31%         |
| Circulatory system                                      | 28            | 38%         | 39%         |
| Endocrine, metabolic & immunity                         | 10            | 14%         | 10%         |
| Respiratory system                                      | 3             | 4%          | 10%         |
| Digestive system  | 2             | 3%          | 2%          |
| Other Causes  | 1             | 1%          | 8%          |
| <b>Total</b>  | <b>74</b>     | <b>100%</b> | <b>100%</b> |

#### Wairarapa Maori Older People Aged 75-84 Years – 45 Total Deaths

##### Top five causes

| International Classification of Disease (ICD10) Chapter | Wairarapa     |             | New Zealand |
|---|---------------|-------------|-------------|
|   | No. of Deaths | %           | %           |
| Circulatory system                                      | 21            | 47%         | 46%         |
| Respiratory system                                      | 10            | 22%         | 13%         |
| Cancer - Malignant                                      | 9             | 20%         | 23%         |
| External causes   | 1             | 2%          | 1%          |
| Endocrine, metabolic & immunity                         | 1             | 2%          | 7%          |
| Other Causes  | 3             | 7%          | 10%         |
| <b>Total</b>  | <b>45</b>     | <b>100%</b> | <b>100%</b> |

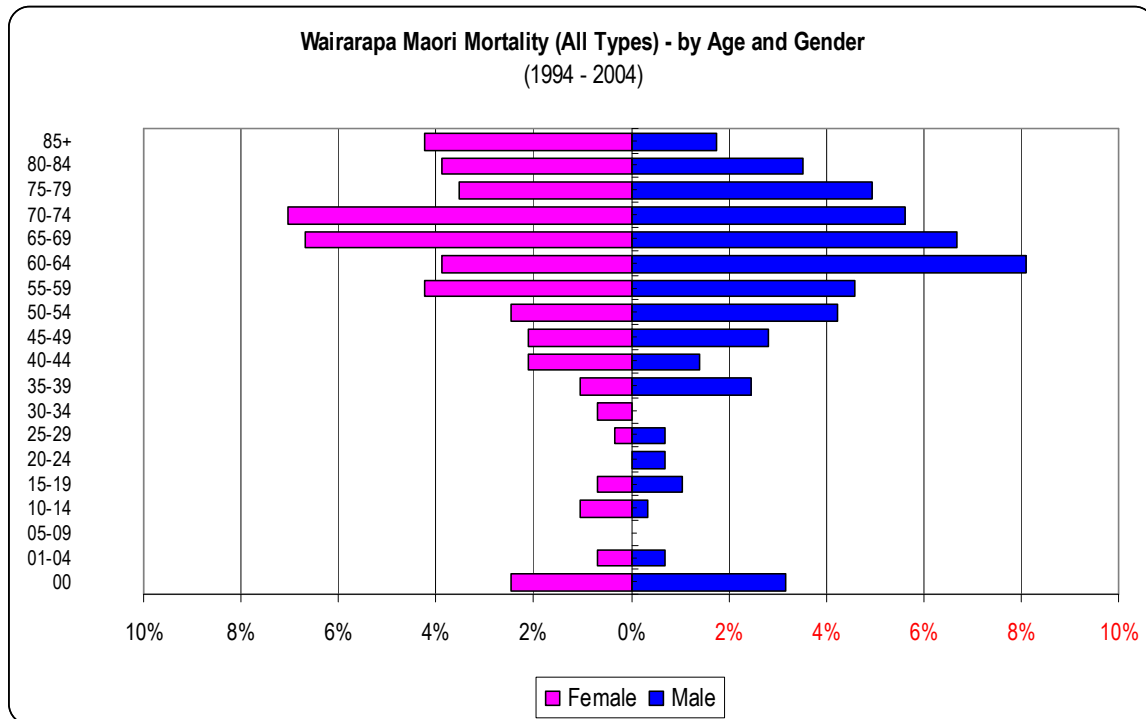
#### Wairarapa Maori Older People Aged 85 Years and over – 17 Total Deaths

##### Top five causes

| International Classification of Disease (ICD10) Chapter | Wairarapa     |             | New Zealand |
|---|---------------|-------------|-------------|
|   | No. of Deaths | %           | %           |
| Circulatory system                                      | 7             | 41%         | 52%         |
| Cancer - Malignant                                      | 4             | 24%         | 16%         |
| External causes   | 2             | 12%         | 2%          |
| Respiratory system                                      | 1             | 6%          | 13%         |
| Genitourinary system                                    | 1             | 6%          | 3%          |
| Other Causes  | 2             | 12%         | 14%         |
| <b>Total</b>  | <b>17</b>     | <b>100%</b> | <b>100%</b> |

### 3.4 Mortality by Gender Grouping

The following graph shows that between 1994 and 2004 Wairarapa Maori males die younger than Wairarapa Maori females.



|                                 | International Classification of Disease (ICD10) Chapter | Wairarapa            |               |             |
|---------------------------------|---|----------------------|---------------|-------------|
|                                 |   | No. of Deaths        | Female        | Male        |
| <b>Children Aged 0-14 years</b> | External causes   | 9                    | 6             | 3           |
|                                 | Perinatal conditions                                    | 5                    | 3             | 2           |
|                                 | Congenital anomalies                                    | 3                    | 1             | 2           |
|                                 | Ill-defined conditions                                  | 3                    | 1             | 2           |
|                                 | Respiratory system                                      | 2                    | 0             | 2           |
|                                 |   | <b>No. of Deaths</b> | <b>Female</b> | <b>Male</b> |
| <b>Youth Aged 15-24 Years</b>   | External causes   | 6                    | 2             | 4           |
|                                 | Cancer - Malignant                                      | 1                    | 0             | 1           |
|                                 | -   | -                    | -             | -           |
|                                 | -   | -                    | -             | -           |
|                                 | -   | -                    | -             | -           |
|                                 |   | <b>No. of Deaths</b> | <b>Female</b> | <b>Male</b> |
| <b>Adults Aged 25-44 Years</b>  | External causes   | 7                    | 1             | 6           |
|                                 | Cancer - Malignant                                      | 5                    | 4             | 1           |
|                                 | Circulatory system                                      | 4                    | 1             | 3           |
|                                 | Genitourinary system                                    | 3                    | 3             | 0           |
|                                 | Respiratory system                                      | 2                    | 1             | 1           |
|                                 |   | <b>No. of Deaths</b> | <b>Female</b> | <b>Male</b> |
| <b>Adults Aged 45-64 Years</b>  | Circulatory system                                      | 40                   | 10            | 30          |
|                                 | Cancer - Malignant                                      | 35                   | 17            | 18          |
|                                 | Endocrine, metabolic & immunity                         | 10                   | 7             | 3           |
|                                 | Respiratory system                                      | 5                    | 2             | 3           |
|                                 | External causes   | 1                    | 0             | 1           |

|                                      |                                 | No. of Deaths | Female | Male |
|--------------------------------------|---------------------------------|---------------|--------|------|
| <b>Older People Aged 65-74 Years</b> | Cancer - Malignant              | 30            | 19     | 11   |
|                                      | Circulatory system              | 28            | 14     | 14   |
|                                      | Endocrine, metabolic & immunity | 10            | 3      | 7    |
|                                      | Respiratory system              | 3             | 3      | 0    |
|                                      | Digestive system                | 2             | 0      | 2    |
|                                      |                                 | No. of Deaths | Female | Male |
| <b>Older People Aged 75-84 Years</b> | Circulatory system              | 21            | 11     | 10   |
|                                      | Respiratory system              | 10            | 6      | 4    |
|                                      | Cancer - Malignant              | 9             | 2      | 7    |
|                                      | External causes                 | 1             | 0      | 1    |
|                                      | Endocrine, metabolic & immunity | 1             | 0      | 1    |
|                                      |                                 | No. of Deaths | Female | Male |
| <b>Older People Aged 85+ years</b>   | Circulatory system              | 7             | 5      | 2    |
|                                      | Cancer - Malignant              | 4             | 2      | 2    |
|                                      | External causes                 | 2             | 2      | 0    |
|                                      | Respiratory system              | 1             | 1      | 0    |
|                                      | Genitourinary system            | 1             | 1      | 0    |

### 3.5 Avoidable Mortality

The concept of avoidable mortality includes deaths that are potentially preventable through population-based interventions (e.g. health promotion) and preventive and curative interventions at an individual level. Between 1994 and 2004, 65% of the deaths of Wairarapa Maori people were considered to be avoidable. This was the same for both males and females.

Avoidable mortality data indicates potential areas where gains can be made through health promotion, disease prevention and treatment.

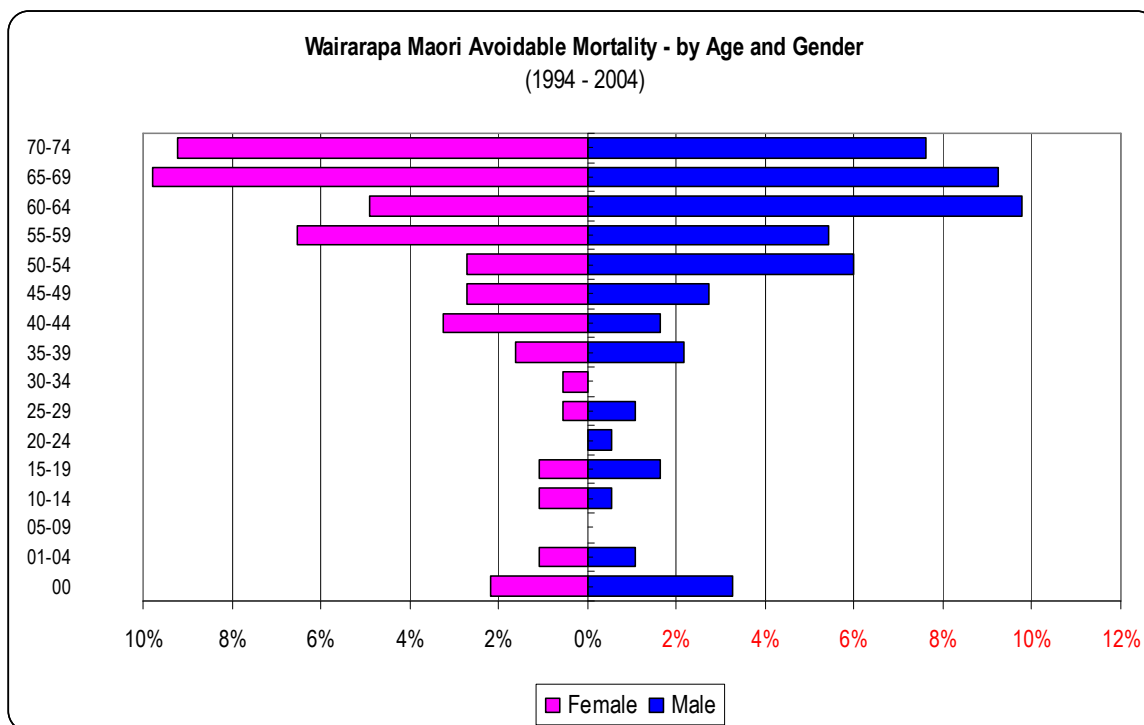
The top 10 causes of avoidable mortality of Wairarapa Maori between 1994 and 2004 are shown in the table below.

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori |             |
|---|-----------------|-------------|
|   | No. of Deaths   | %           |
| Ischaemic heart disease                                 | 43              | 23%         |
| Lung Cancer   | 26              | 14%         |
| Diabetes  | 19              | 10%         |
| Cerebrovascular diseases (Stroke)                       | 9               | 5%          |
| Road traffic injuries                                   | 9               | 5%          |
| Stomach Cancer  | 7               | 4%          |
| COPD (Respiratory)                                      | 7               | 4%          |
| Rheumatic and other valvular heart disease              | 5               | 3%          |
| Nephritis and nephrosis                                 | 5               | 3%          |
| Violence  | 5               | 3%          |
| Other Causes  | 49              | 26%         |
| <b>Totals</b>   | <b>184</b>      | <b>100%</b> |

| Total Mortality vs Avoidable – Wairarapa Maori        | Total      | Female     | Male       |
|---|------------|------------|------------|
| Total Wairarapa Maori Deaths                          | 284        | 134        | 150        |
| Avoidable Wairarapa Maori Deaths                      | 184        | 87         | 97         |
| <b>Percentage of Avoidable Wairarapa Maori Deaths</b> | <b>65%</b> | <b>65%</b> | <b>65%</b> |

### 3.6 Avoidable Mortality by Gender Grouping

Avoidable Mortality, as a percentage is 6% higher for Wairarapa Maori men at 53% than it is for Wairarapa Maori women at 47%.



The following table shows a breakdown of the causes of Avoidable Mortality for Wairarapa Maori, by gender, between 1994 and 2004.

| International Classification of Disease (ICD10) Chapter | Avoidable Deaths |           |           |
|---|------------------|-----------|-----------|
|   | No. of Deaths    | Female    | Male      |
| Ischaemic heart disease                                 | 43               | 15        | 28        |
| Lung Cancer   | 26               | 18        | 8         |
| Diabetes  | 19               | 9         | 10        |
| Cerebrovascular diseases (Stroke)                       | 9                | 4         | 5         |
| Road traffic injuries                                   | 9                | 3         | 6         |
| Stomach Cancer  | 7                | 2         | 5         |
| COPD (Respiratory)                                      | 7                | 4         | 3         |
| Rheumatic and other valvular heart disease              | 5                | 1         | 4         |
| Nephritis and nephrosis                                 | 5                | 3         | 2         |
| Violence  | 5                | 4         | 1         |
| Other Causes  | 49               | 24        | 25        |
| <b>Totals</b>   | <b>184</b>       | <b>87</b> | <b>97</b> |

## 4 ACCESS TO SERVICES AND THE UTILISATION OF SERVICES

### Key Findings for the Wairarapa

- The percentage of hospital discharges for Wairarapa Maori increased by 10% between the 2004/05 and 2006/07 financial year periods.
- The number of Elective Admissions to Wairarapa Hospital as a percentage of the total population for Wairarapa Maori increased in the 2006/07 year for those aged between 55 and 70 years of age.
- There has been a significant reduction in the number of Ambulatory Sensitive and Preventable Admissions to Wairarapa Hospital as a percentage of the total ethnic population for Wairarapa Maori in the 60-64 age group in both the 2005/06 and 2006/07 years, compared to 2004/05 financial year period.

### 4.1 Wairarapa Hospital Discharges

A Hospital Discharge is described by the New Zealand Health Information Service (NZHIS) as the process of documentation that changes the status of an admitted healthcare user.

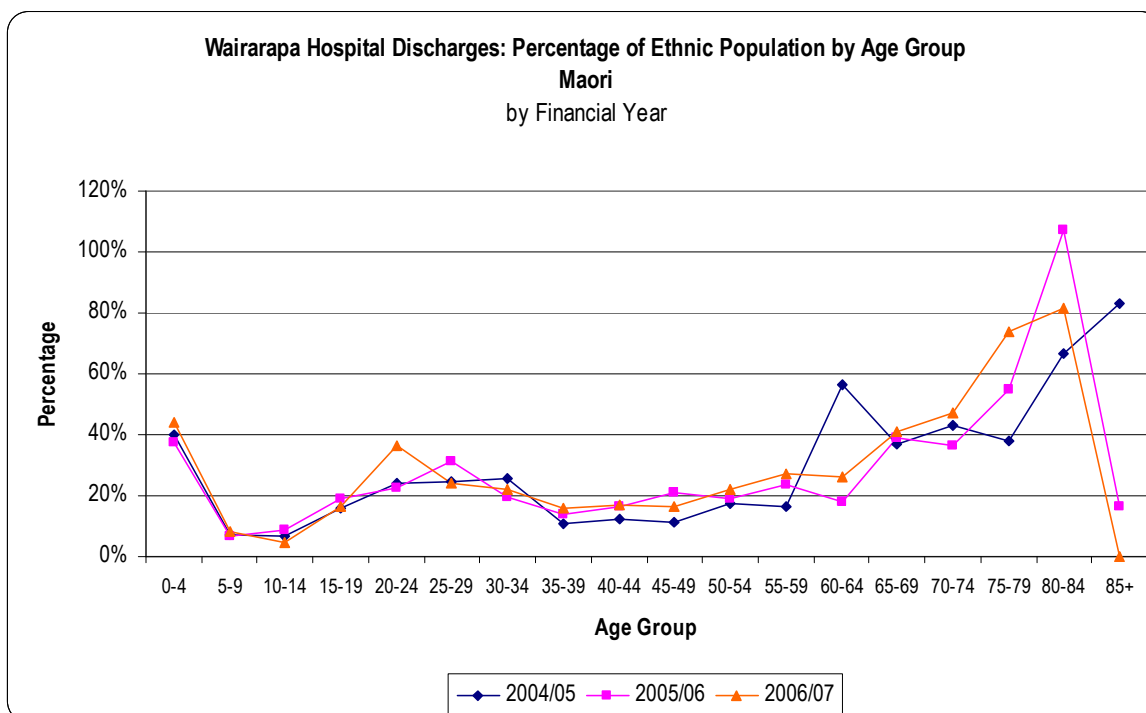
The following table shows the Wairarapa Maori volume breakdown between the 2004/05 and 2006/07 financial year periods.

| Ethnicity | 2004/05 | 2005/06 | 2006/07 | Total | Percentage Increase<br>2004/05 – 2006/07 |
|-----------|---------|---------|---------|-------|--|
| Maori     | 1071    | 1112    | 1182    | 3365  | 10%                                      |

The following table shows the Wairarapa Maori percentage breakdown, by gender during this period. Although the volumes have increased, the percentage breakdown remains fairly similar.

| Financial Year | Maori  |      |
|----------------|--------|------|
|                | Female | Male |
| 2004/05        | 10%    | 7%   |
| 2005/06        | 10%    | 7%   |
| 2006/07        | 9%     | 7%   |

The following graph shows the number of discharges as a percentage of the total ethnic population from Wairarapa Hospital for Maori, by age group, between the 2004/05 and 2006/07 financial years. The pattern shows no noticeable change during this period.



## 4.2 Acute Admissions to Wairarapa Hospital

An acute hospital admission is an unplanned admission on the day of presentation at the admitting healthcare facility. The admission may have been from the Emergency or Outpatient Departments of the healthcare facility. If the patient is admitted from the Accident and Emergency (A&E) department, then the time of admission should include the time spent in A&E.

It is important to track acute admissions over time to show the demand on hospital services. It is also an indication of whether initiatives taking place in the community are working to reduce potential chronic or long term health conditions. This would also show any potential capacity for Elective procedures to take place.

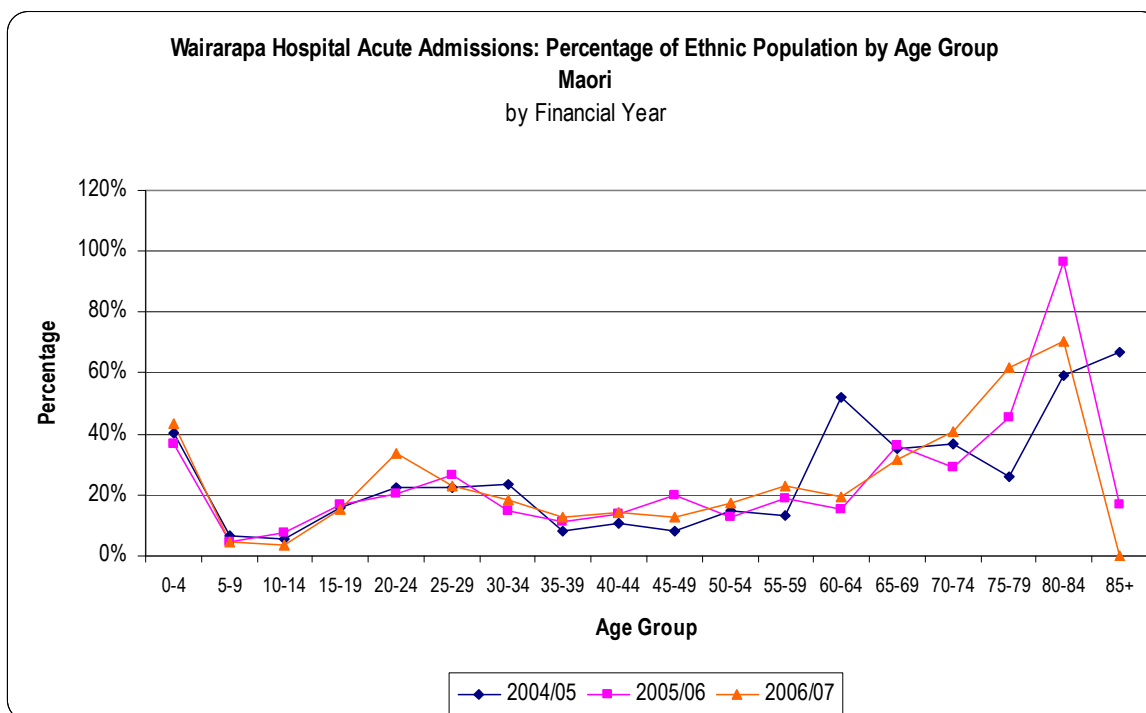
The following table shows the Wairarapa Maori volume breakdown between the 2004/05 and 2006/07 financial year periods.

|       | 2004/05 | 2005/06 | 2006/07 | Total |
|-------|---------|---------|---------|-------|
| Maori | 981     | 972     | 1,027   | 2,980 |

The following table shows the Wairarapa Maori percentage breakdown, by gender during this period. Although the volumes have increased, the percentage breakdown remains fairly similar.

| Financial Year | Maori  |      |
|----------------|--------|------|
|                | Female | Male |
| 2004/05        | 10.3%  | 7.9% |
| 2005/06        | 10.4%  | 7.3% |
| 2006/07        | 10.3%  | 7.7% |

The following graph shows the number of Acute Admissions to Wairarapa Hospital as a percentage of the total population for Maori, by age group, between the 2004/05 and 2006/07 financial years. The pattern shows no noticeable change during this period.



### 4.3 Elective Admissions to Wairarapa Hospital

Elective services are important for improving peoples' independence and ability to participate in the activities of daily living. An Elective hospital admission is a planned admission on a date more than seven days after a specialist decision to admit or a patient who was placed on a waiting list without a specific date being given. Each year the DHB sets an agreed increase in the number of elective services.

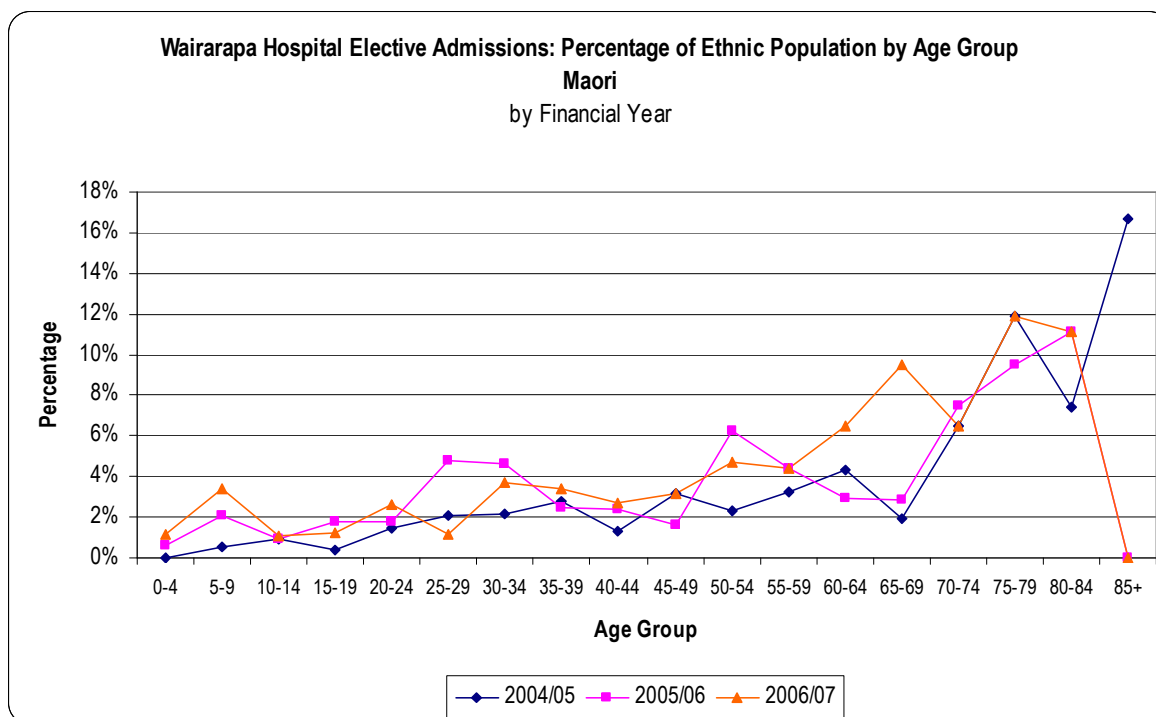
The following table shows the Wairarapa Maori volume breakdown between the 2004/05 and 2006/07 financial year periods.

|       | 2004/05 | 2005/06 | 2006/07 | Total |
|-------|---------|---------|---------|-------|
| Maori | 90      | 140     | 155     | 385   |

The following table shows the Wairarapa Maori percentage breakdown, by gender during this period.

| Financial Year | Maori  |      |
|----------------|--------|------|
|                | Female | Male |
| 2004/05        | 6.3%   | 2.8% |
| 2005/06        | 8.0%   | 4.6% |
| 2006/07        | 5.4%   | 4.7% |

The following graph shows the number of Elective Admissions to Wairarapa Hospital as a percentage of the total population for Maori, by age group, between the 2004/05 and 2006/07 financial years. The pattern shows an increase in the 2006/07 year for those aged between 55 and 70 years of age.



#### 4.4 Avoidable Hospitalisations – Wairarapa Hospital

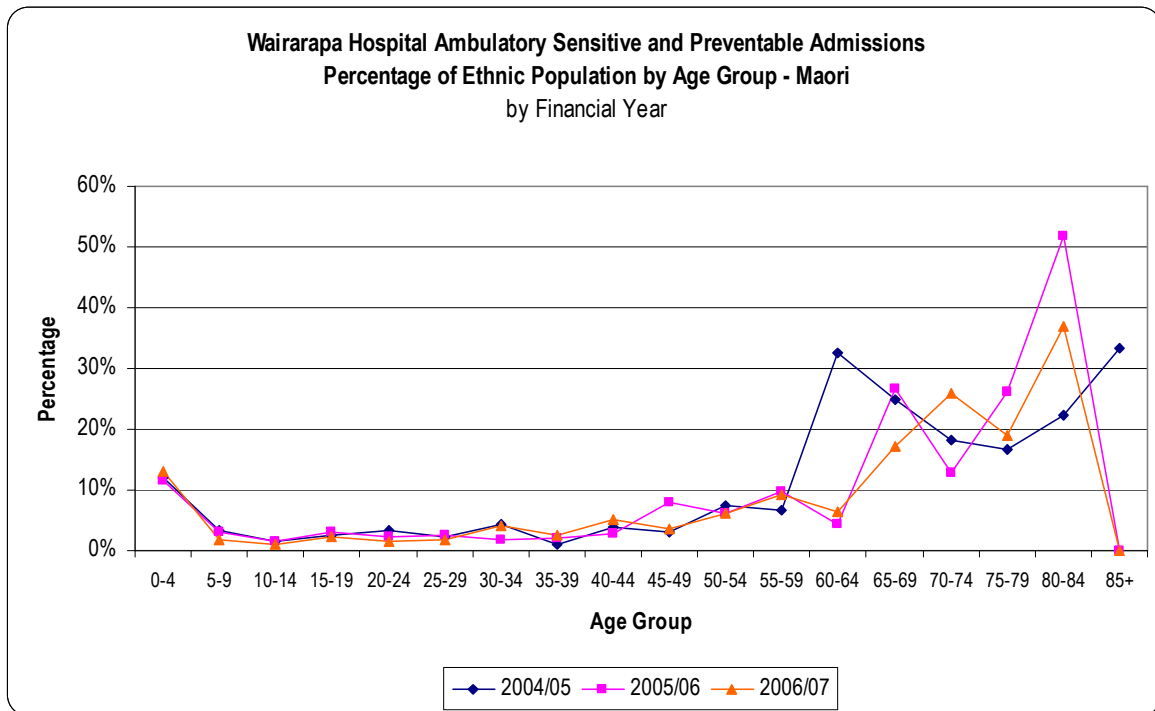
The following table shows the Wairarapa Maori volume breakdown of avoidable hospitalisations at Wairarapa Hospital between the 2004/05 and 2006/07 financial year periods. Annually there was a slight decrease in these hospitalisations.

|       | 2004/05 | 2005/06 | 2006/07 | Total |
|-------|---------|---------|---------|-------|
| Maori | 319     | 292     | 279     | 890   |

The following table shows the Wairarapa Maori percentage breakdown, by gender for each category during this period.

| Hospitalisation Category           | Financial Year | Maori  |      |
|------------------------------------|----------------|--------|------|
|                                    |                | Female | Male |
| Ambulatory Sensitive & Preventable | 2004/05        | 7%     | 7%   |
|                                    | 2005/06        | 8%     | 7%   |
|                                    | 2006/07        | 7%     | 7%   |
| Ambulatory Sensitive               | 2004/05        | 9%     | 14%  |
|                                    | 2005/06        | 10%    | 11%  |
|                                    | 2006/07        | 9%     | 9%   |
| Preventable                        | 2004/05        | 2%     | 6%   |
|                                    | 2005/06        | 3%     | 4%   |
|                                    | 2006/07        | 4%     | 6%   |

The following graph shows the number of Ambulatory Sensitive and Preventable Admissions to Wairarapa Hospital as a percentage of the total ethnic population for Maori, by age group, between the 2004/05 and 2006/07 financial years. There has been a significant reduction for those in the 60-64 age groups in the 2005/06 and 2006/07 years, compared to 2004/05.



## 5 RISK AND PROTECTIVE FACTORS

### Key Findings for the Wairarapa

#### Smoking

- Most adults who smoke begin smoking before the age of 18 years, and there is evidence to show that the younger people begin smoking, the more likely they are to become strongly addicted to nicotine. Females are more likely to become smokers in this age group than males.
- Maori women have the highest smoking percentage in Wairarapa (47.4% smoke).
- The percentage of Maori men who have never smoked is slightly higher than those who smoke regularly.

#### Nutrition

- Maori have a lower prevalence of adequate fruit and vegetable intake compared to non Maori.

#### Obesity

- Levels of obesity of both males and females are worse in the Wairarapa than across New Zealand as a whole, with Maori being more obese than non Maori.

#### Physical Activity

- Local initiatives aiming to improve health and physical fitness in the Wairarapa include implementation of the Wairarapa Physical Activity Plan.

#### Drug and Alcohol

- Non-Maori were significantly more likely to have consumed alcohol in the last 12 months compared to Maori. Among past-year drinkers, non-Maori consumed alcohol significantly more frequently than Maori. However, Maori drinkers were significantly more likely to consume a large amount of alcohol on a typical drinking occasion, and to consume a large amount of alcohol at least weekly, compared to non-Maori drinkers.
- Wairarapa Maori have a higher prevalence of current hazardous drinking than their New Zealand counterparts.

### 5.1 Smoking

Tobacco smoking is a well-recognised risk factor for many cancers and for respiratory and cardiovascular diseases. It is estimated that tobacco causes around 5000 deaths in New Zealand every year (both through active smoking and through exposure to second-hand smoke), over half of which occur in middle age. In addition, exposure to environmental tobacco smoke (particularly maternal smoking) has been identified as a major risk factor for Sudden Infant Death Syndrome (SIDS) and respiratory problems in children. Internationally, smoking has been identified as the major cause of preventable death in OECD countries.

The prevalence of smoking has decreased in New Zealanders since the 1970s, yet approximately one in every four New Zealanders remains a current smoker. New Zealand currently has a world class tobacco monitoring system with the development of the New Zealand Tobacco Use Survey (NZTUS), which was in field for the first time in 2006. The NZTUS is a tool that monitors tobacco use in New Zealand and provides reliable estimates that are representative of the national population.

### 5.1.1 Smoking by Ethnic Group

The following tables show a breakdown of Wairarapa Maori smoker types taken from the 2006 census. Wairarapa Maori women have the highest smoking percentage in the Wairarapa, followed by Maori men.

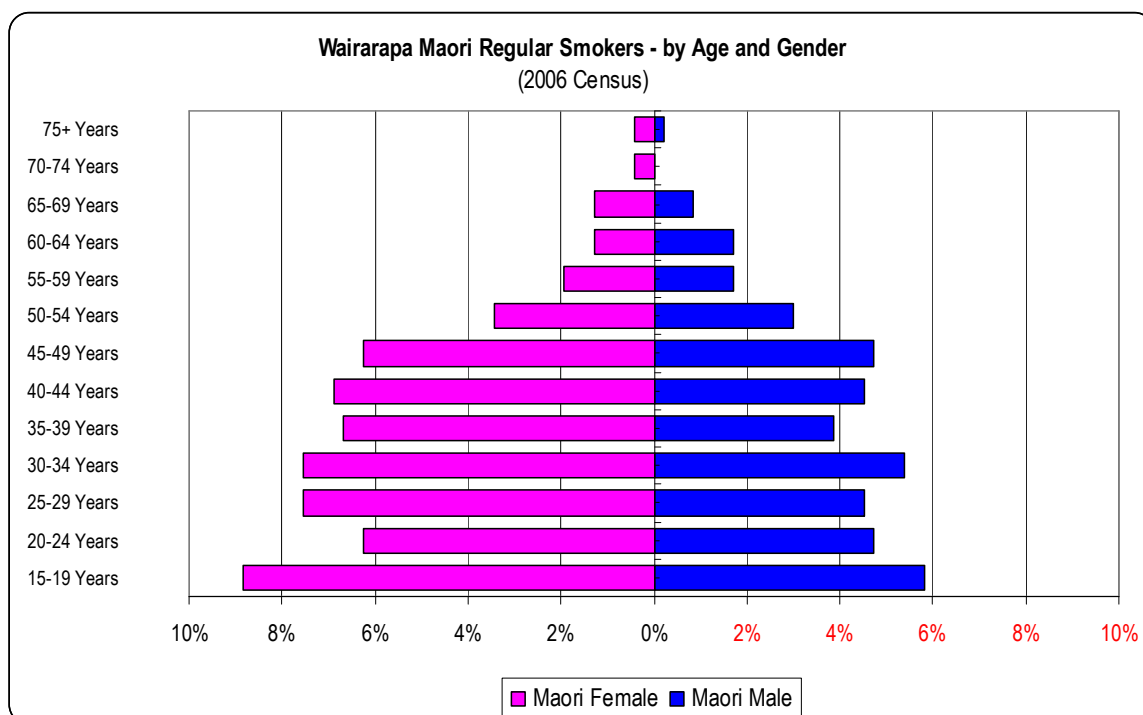
Smoking has a serious negative impact on Maori health. Reducing Maori smoking prevalence is a key focus of the National Drug Policy.

| Smoker Type    | Maori  |       |
|----------------|--------|-------|
|                | Female | Male  |
| Regular Smoker | 47.4%  | 38.4% |
| Ex Smoker      | 21.5%  | 22.3% |
| Never Smoked   | 31.1%  | 39.2% |

### 5.1.2 Smoking by Age Group and Gender

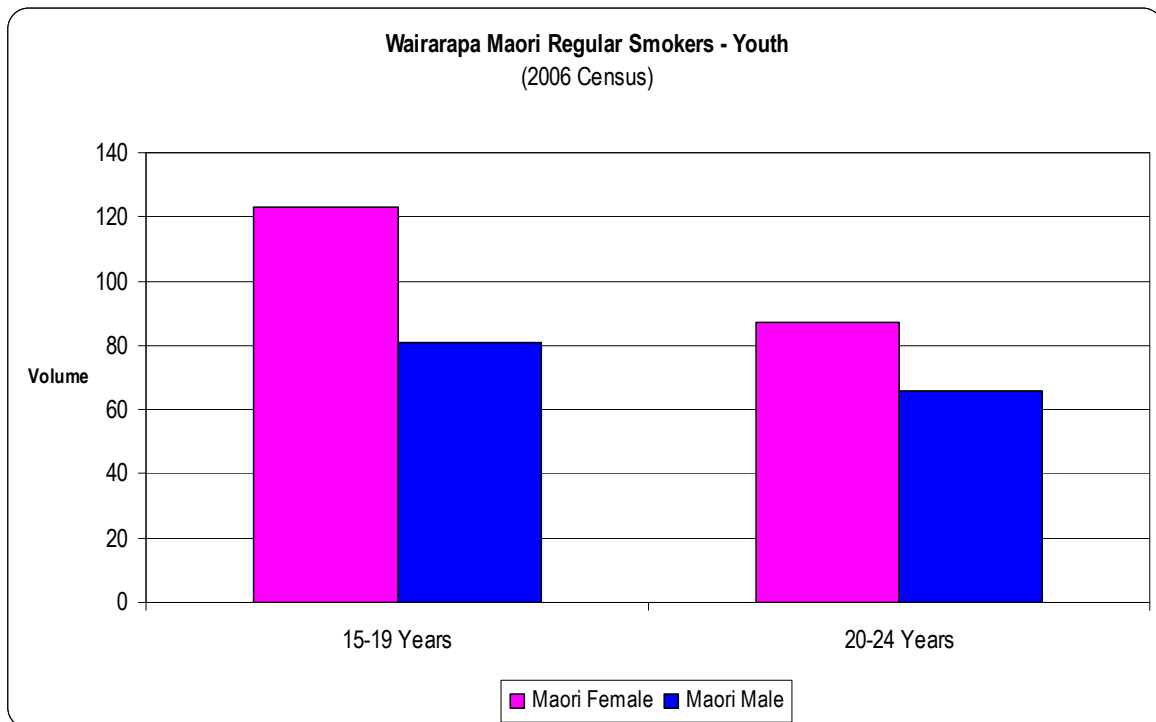
The following table shows a breakdown of Wairarapa Maori smoker types by age group and gender, taken from the 2006 census.

| Age          | Maori Male |                        |                | Maori Female |                        |                |
|--------------|------------|------------------------|----------------|--------------|------------------------|----------------|
|              | Ex-Smoker  | Never Smoked Regularly | Regular Smoker | Ex-Smoker    | Never Smoked Regularly | Regular Smoker |
| 15-19 Years  | 15         | 165                    | 81             | 21           | 132                    | 123            |
| 20-24 Years  | 18         | 63                     | 66             | 30           | 48                     | 87             |
| 25-29 Years  | 27         | 54                     | 63             | 30           | 39                     | 105            |
| 30-34 Years  | 24         | 39                     | 75             | 33           | 39                     | 105            |
| 35-39 Years  | 30         | 54                     | 54             | 36           | 33                     | 93             |
| 40-44 Years  | 45         | 48                     | 63             | 54           | 45                     | 96             |
| 45-49 Years  | 27         | 36                     | 66             | 42           | 45                     | 87             |
| 50-54 Years  | 48         | 36                     | 42             | 24           | 39                     | 48             |
| 55-59 Years  | 24         | 24                     | 24             | 39           | 30                     | 27             |
| 60-64 Years  | 24         | 21                     | 24             | 18           | 24                     | 18             |
| 65-69 Years  | 18         | 21                     | 12             | 15           | 15                     | 18             |
| 70-74 Years  | 27         | 18                     | 0              | 12           | 18                     | 6              |
| 75+ Years    | 15         | 6                      | 3              | 9            | 24                     | 6              |
| <b>Total</b> | <b>342</b> | <b>585</b>             | <b>573</b>     | <b>363</b>   | <b>531</b>             | <b>819</b>     |



## Prevalence of Smoking in Wairarapa Maori Youths

Most adults who smoke begin smoking before the age of 18 years, and there is evidence to show that the younger people begin smoking, the more likely they are to become strongly addicted to nicotine. Females are more likely to become smokers in this age group than males.



## 5.2 Nutrition

Nutrition is a science that examines the relationship between diet and health. Dietitians are health professionals who specialise in this area of study, and are trained to provide safe, evidence-based dietary advice and interventions.

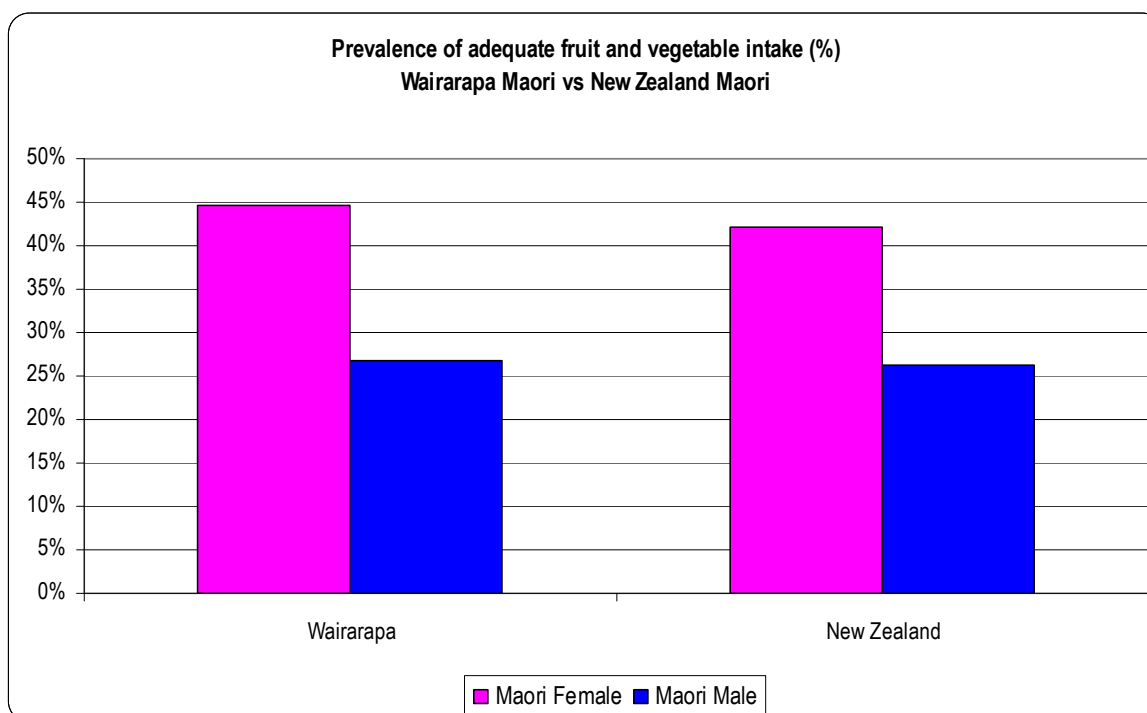
Deficiencies, excesses and imbalances in diet can produce negative impacts on health, which may lead to diseases such as heart disease, diabetes and some cancers, as well as psychological and behavioural problems. The consumption of fruit and vegetables can protect against these conditions. It is recommended in New Zealand that adults eat at least three servings of vegetables and two servings of fruit each day.

The New Zealand Health Survey 2002/03 asked two separate questions on servings of fruit and vegetables consumed per day:

- *On average, how many servings of fruit (fresh, frozen, canned or stewed) do you eat per day?*
- *On average, how many servings of vegetables (fresh, frozen, canned or stewed) do you eat per day?*

### 5.2.1 Nutrition by Gender

Maori have a lower prevalence of adequate fruit and vegetable intake compared to Non-Maori, both locally and nationally. The following graph shows the age standardised prevalence rates of fruit and vegetable intake, comparing Wairarapa Maori with New Zealand Maori, by gender, who consumed at least two servings of fruit and at least three servings of vegetables per day.



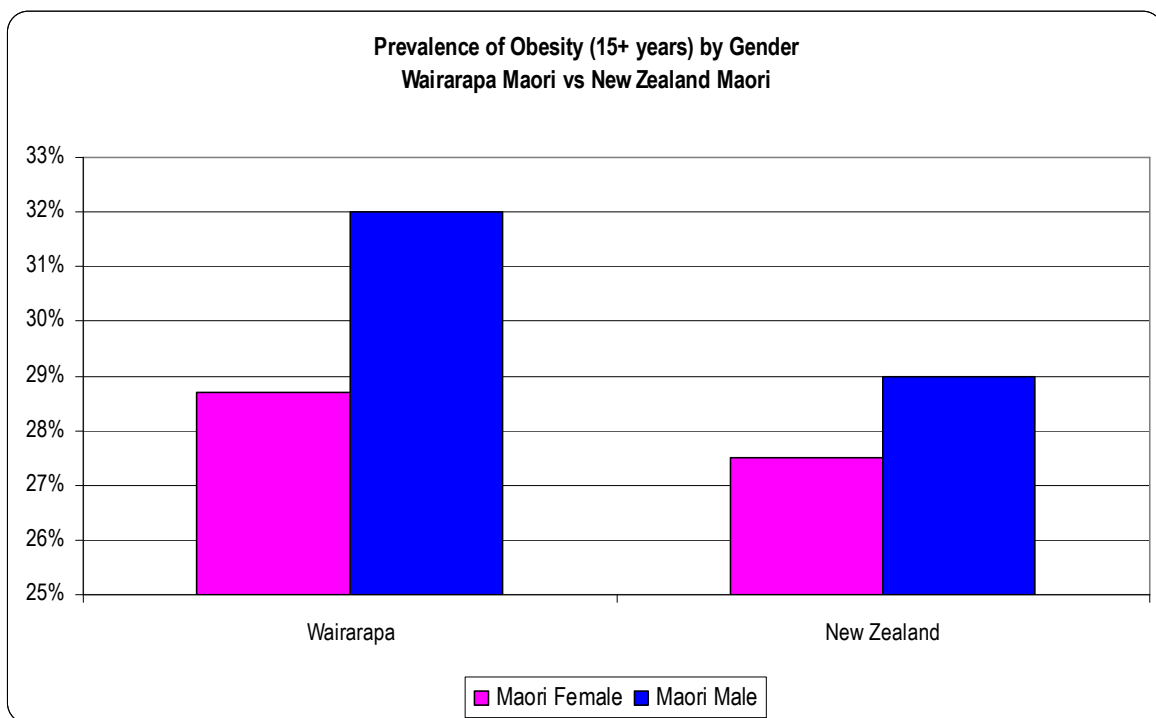
Source: New Zealand Health Survey 2002/03

### 5.3 Obesity

Obesity is now increasingly common among New Zealand adults according to the Ministry of Health report called "Tracking the Obesity Epidemic: New Zealand 1977-2003". The report contains data from four national nutrition and health surveys, and it tracks changes in the body mass index (BMI) of New Zealanders aged 15-74 years from 1977 to 2003 by gender, age and ethnicity (Maori / Non-Maori). The report shows that obesity levels have risen from about 10 percent of the adult population in 1977 to 21 percent in 2003. The "epidemic" grew relatively slowly in the 1970s and 1980s, and then accelerated rapidly in the late 1980s to mid-1990s. It continued to grow from 1997 to 2003 in most population groups, although it did appear to slow in some women and Maori, however the prevalence of obesity remains higher in Maori than in the total population.

#### 5.3.1 Obesity by Gender

The New Zealand Health Survey 2002/03 identified that Obesity is more prevalent among Maori and Pacific Peoples. Regardless of ethnicity the prevalence of obesity is higher in the Wairarapa than Nationally. The following graph shows the age standardised rate breakdown comparing the Wairarapa Maori with New Zealand Maori.



Source: New Zealand Health Survey 2002/03

## 5.4 Level of Physical Activity

In 2003, SPARC and the New Zealand Cancer Society undertook a study of over 8,000 New Zealanders to find out about motivators and barriers to physical activity, nutrition, community facilities, obesity and sources of health information.

The study found that key barriers include:

- lack of time and/or energy
- lack of encouragement or support from others
- health problems

The study found that key motivators include:

- awareness and belief that physical activity is good for your health
- desire to keep in shape
- encouragement from others or wanting to role model physically active behaviours

Data from this survey was re-examined in 2006 to provide information about a "Busy and Stressed" segment of the population but more recent national data are not available.

To determine the current physical activity levels of the Wairarapa population, Active Wairarapa and HEHA conducted a survey in August 2007. Questions and criteria were based on the SPARC 2003 national survey. A total of 411 people throughout the Wairarapa region responded to the survey. They were asked 3 questions relating to the intensity of the physical activity and categories were added to give a total/week result by multiplying the amount of activity per day by the number of day per week in which the activity took place.

Overall Wairarapa was found to have nearly 87% of its population physically active with more than 80% being physically active for at least 180 minutes (3 hours) per week. The population regarded as being physically inactive (zero activity recorded) was 5.8%.

In a breakdown of different categories the following summaries are apparent

- Age Middle age (35-60) most active, over 60 and under 35 similar
- Gender Males more active than females
- Ethnicity Very similar between NZ European and Maori
- District South Wairarapa the most active followed by Carterton and Masterton
- Income The higher the income the more physically active, although only 6.6% (sample size 27) of the population earning more than \$70 000 were surveyed.

## 5.5 Alcohol and Drug Use

Alcohol is the most commonly used recreational drug in New Zealand. Its abuse and misuse causes mortality and morbidity, as well as considerable harm to society. Excessive alcohol consumption can produce detrimental effects. Long term problems include irreparable damage to the brain, liver, intestines and pancreas.

Alcohol is also a significant risk factor for the following:

- some types of cancer
- high blood pressure
- haemorrhagic stroke, and
- cardiac conditions such as cardiomyopathy, which literally means "heart muscle disease", is the deterioration of the function of the actual heart muscle

Alcohol also contributes to death and injury on the roads, drowning, suicide, assaults and domestic violence, other non-traffic-related mortality and morbidity and some mental health disorders and sexual health problems.

High levels of alcohol use are also associated with alcohol dependence and abuse, and alcohol during pregnancy can lead to birth defects in infants, including foetal alcohol syndrome.

In older people, moderate alcohol consumption can protect against ischaemic heart disease, ischaemic stroke, vascular dementia and type 2 diabetes.

### Alcohol Use in New Zealand

The Ministry of Health's Public Health Intelligence Unit published the report "Alcohol Use in New Zealand: Analysis of the 2004 Health Behaviours Survey – Alcohol Use" in March 2007 and presents the results from a survey about alcohol use in the New Zealand population, carried out in 2004.

This report provides information on alcohol consumption and drinking patterns, as well as problems relating to one's own or someone else's drinking. The report also presents results about youth drinking, and supply of alcohol to youth. Differences in alcohol use between males and females, Maori and non-Maori and across age groups are reported.

### Overview of results - Alcohol Survey 2004

Non-Maori were significantly more likely to have consumed alcohol in the last 12 months compared to Maori. Among past-year drinkers, non-Maori consumed alcohol significantly more frequently than Maori. However, Maori drinkers were significantly more likely to consume a large amount of alcohol on a typical drinking occasion, and to consume a large amount of alcohol at least weekly, compared to non-Maori drinkers.

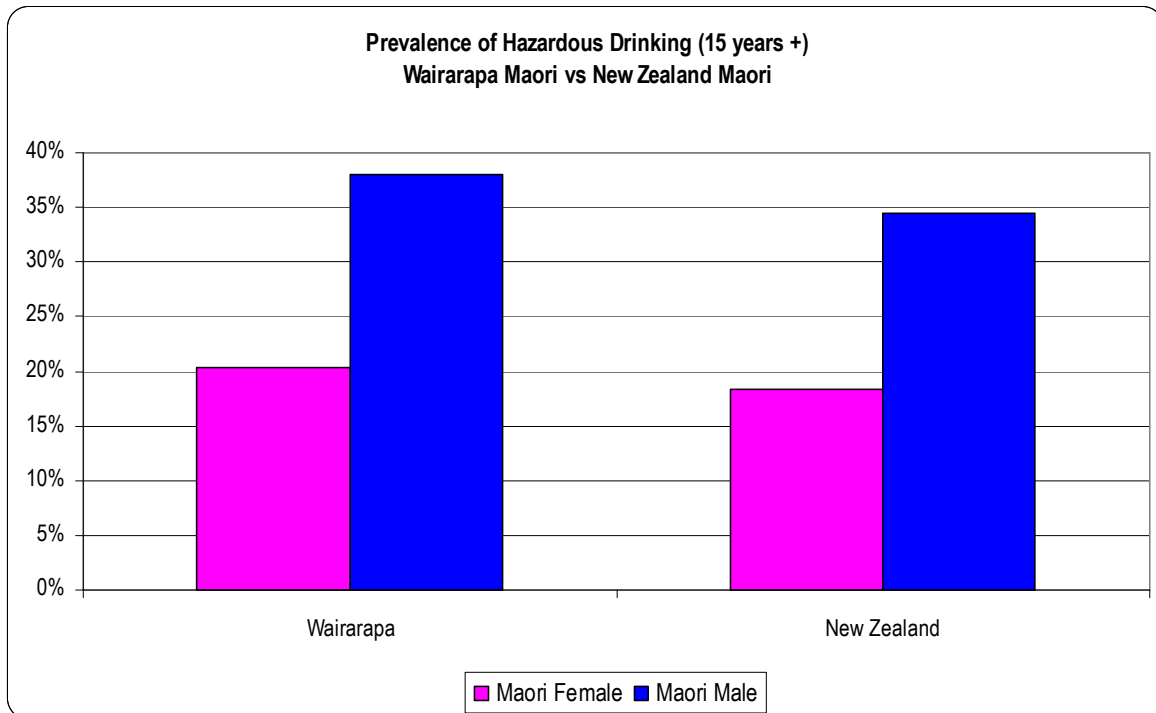
Alcohol consumption caused a wide range of self-reported problems and harms for drinkers. The respondents' alcohol consumption had caused them harms such as affecting their work or study, and resulting in them doing things they regretted later, such as having unprotected sex.

However, the survey found that it was not only the drinkers who were affected by drinking. People had also experienced problems as a result of someone else's drinking, including physical assault, sexual harassment, and impacts on their family life, social life and financial position.

### 5.5.1 Wairarapa Hazardous Drinking Levels and Trends

The AUDIT [Alcohol Use Disorders Identification Test] questionnaire was used by the New Zealand Health Survey - 2002/03 as an indication of the prevalence of hazardous drinking among 15 years and over.

The New Zealand Health Survey 2002/03 identified that the Wairarapa population has a higher prevalence of current hazardous drinking than their New Zealand counterparts. The following graph shows the age standardised prevalence rates of hazardous drinking (AUDIT score >8) for people aged 15 years and over, comparing the Wairarapa Maori with New Zealand Maori, as sourced from the New Zealand Health Survey 2002/03.



## 6 CHRONIC CONDITIONS

### Key Findings for the Wairarapa

#### Circulatory System Disease

- Of the circulatory system diseases, Angina pectoris was the most frequent reason for hospitalisation in the Wairarapa between 2000 and 2006, while chronic ischaemic heart disease and acute myocardial infarction (heart attack) and were the leading causes of death for Wairarapa Maori.
- Mortality rate trends for Wairarapa Maori due to all types of Circulatory System diseases show decreases between 1994 and 2004 and are trending below their respective New Zealand rates.

#### Diabetes

- Diabetes is the most common cause of kidney failure in New Zealand.
- Hospitalisation rates due to all types of diabetes for Maori, both in the Wairarapa and New Zealand, have increased with the rate for Wairarapa at 2006 significantly higher than the rate for New Zealand Maori.

#### Renal Failure and Kidney Disease

- Chronic kidney disease and its effects account for one third of New Zealand's health costs and numbers of sufferers are set to increase dramatically.
- Wairarapa hospitalisation rates due to Kidney disease and Renal failure are significantly below the New Zealand rates.
- Wairarapa Maori females had more hospitalisations (55%) due to Kidney disease and Renal failure than Wairarapa Maori males (45%) during the year 2000 to 2006 period. The highest number of hospitalisations occurred in the 40-44 year age group for both genders.
- The percentage of hospitalisations of Wairarapa Maori due to Renal Failure and Kidney Disease are similar to the Maori national percentages, although hospitalisations due to Calculus of kidney and ureter (kidney stones) were 9% higher in the Wairarapa. Research has found that risk factors for kidney stones include type II diabetes and obesity.
- During the 10 year period between 1994 and 2004 there were 4 deaths of Wairarapa Maori due to Kidney Disease and Renal Failure This accounted for 9% of the total Wairarapa population deaths due to this cause.

#### Respiratory Disease

- The percentage of Respiratory disease hospitalisations for Wairarapa Maori is similar to that of New Zealand Maori between the year 2000 and 2006. Wairarapa Maori have a slightly higher hospitalisation percentage for Acute bronchiolitis.
- Wairarapa Maori hospitalisation rates for both Acute bronchiolitis and Pneumonia are decreasing.
- Maori children (both genders) up to the age of 10 years of age have more hospitalisations due to Respiratory disease, accounting for 57% of the total. This decreases significantly from then and peaks again in the 65-69 age band.
- Between 1994 and 2004 Respiratory disease mortality rates for Wairarapa Maori show no change. The cause that resulted in the highest numbers of deaths for Wairarapa Maori was Other chronic obstructive pulmonary disease.

## 6.1 Circulatory System Diseases

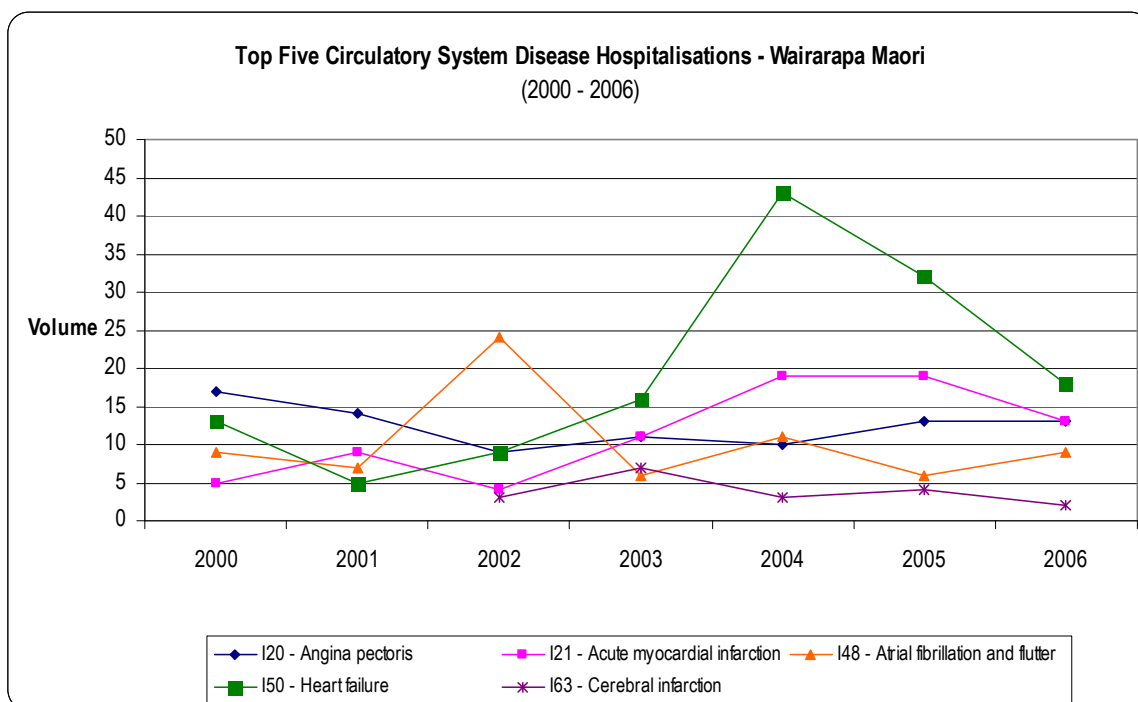
### 6.1.1 Circulatory System Disease Hospitalisations

The following table shows the percentage of Circulatory System disease hospitalisations comparing Wairarapa Maori and New Zealand Maori between the year 2000 and 2006. The percentage of hospitalisations due to Heart Failure was significantly higher for Wairarapa Maori than New Zealand Maori

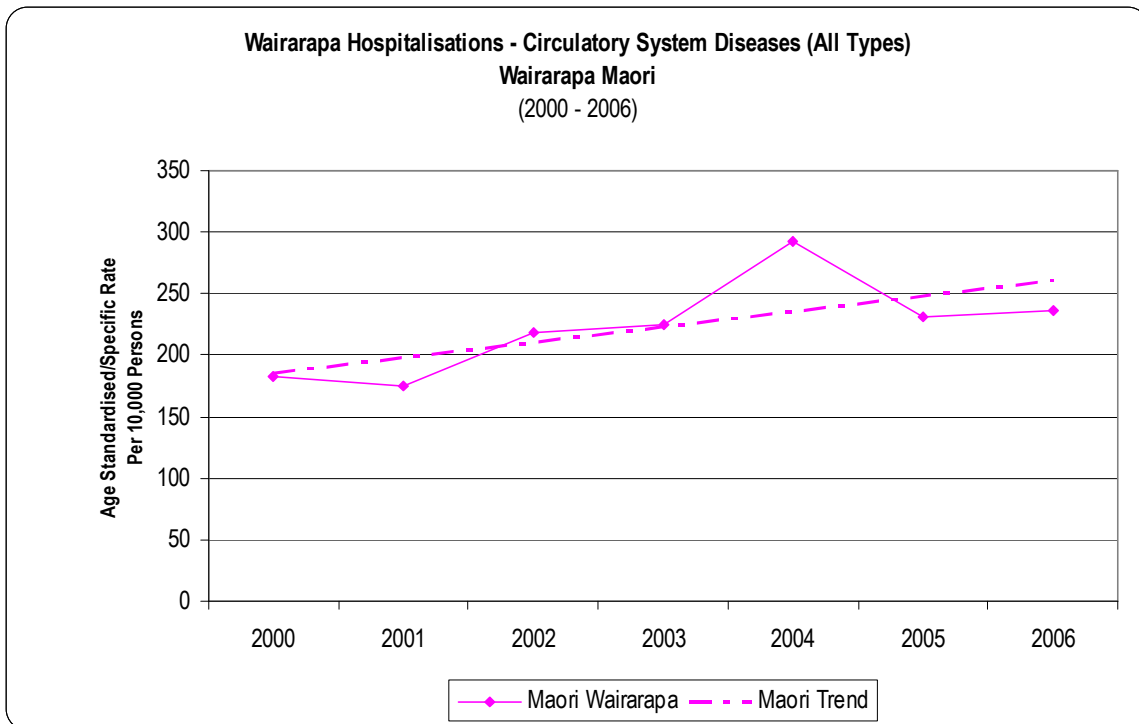
#### Top Five Hospitalisations

| International Classification of Disease (ICD10) Chapter | Maori            |             |               |
|---|------------------|-------------|---------------|
|   | Wairarapa Number | Wairarapa % | New Zealand % |
| I20 - Angina pectoris                                   | 87               | 14%         | 15%           |
| I21 - Acute myocardial infarction                       | 80               | 13%         | 13%           |
| I50 - Heart failure                                     | 136              | 22%         | 16%           |
| I48 - Atrial fibrillation and flutter                   | 72               | 11%         | 10%           |
| I63 - Cerebral infarction                               | 19               | 3%          | 4%            |
| Other Circulatory System Diseases                       | 234              | 37%         | 42%           |
| <b>Total</b>  | <b>628</b>       | <b>100%</b> | <b>100%</b>   |

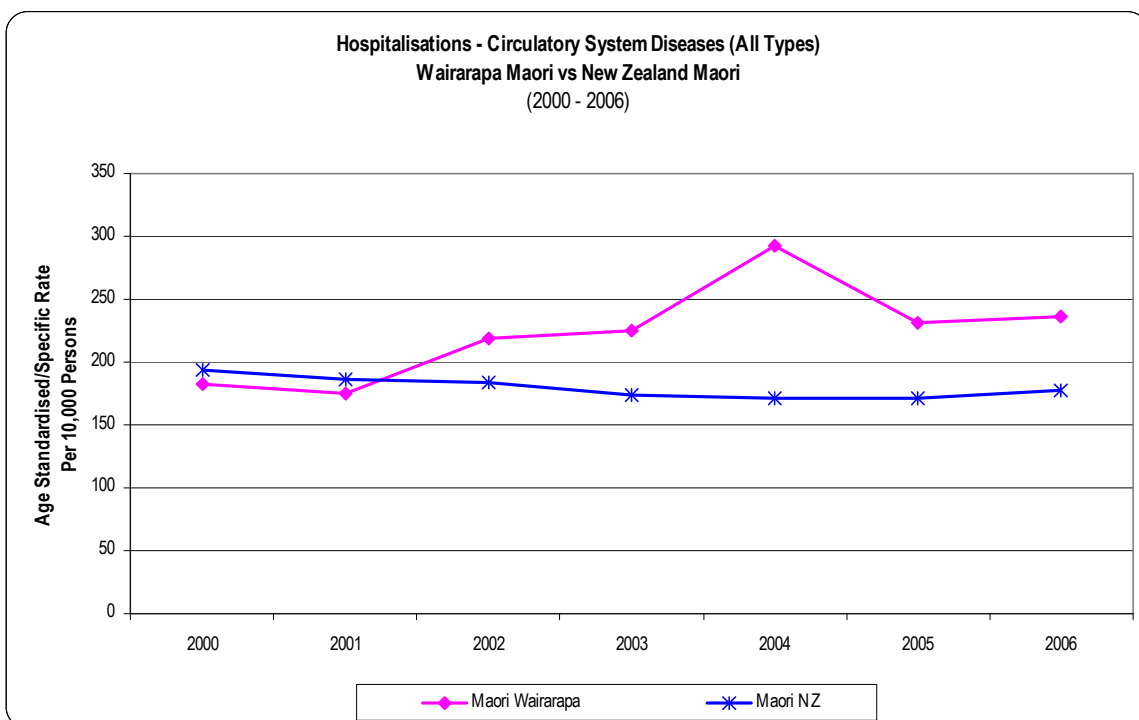
The following graph shows the top five Circulatory System Disease hospitalisations of Wairarapa Maori by volume between the year 2000 and 2006. The trends for Angina, Atrial fibrillation and flutter and Cerebral infarction show decreases, while the rest have shown increases during this period. The most significant trend is an increase of Heart Failure.



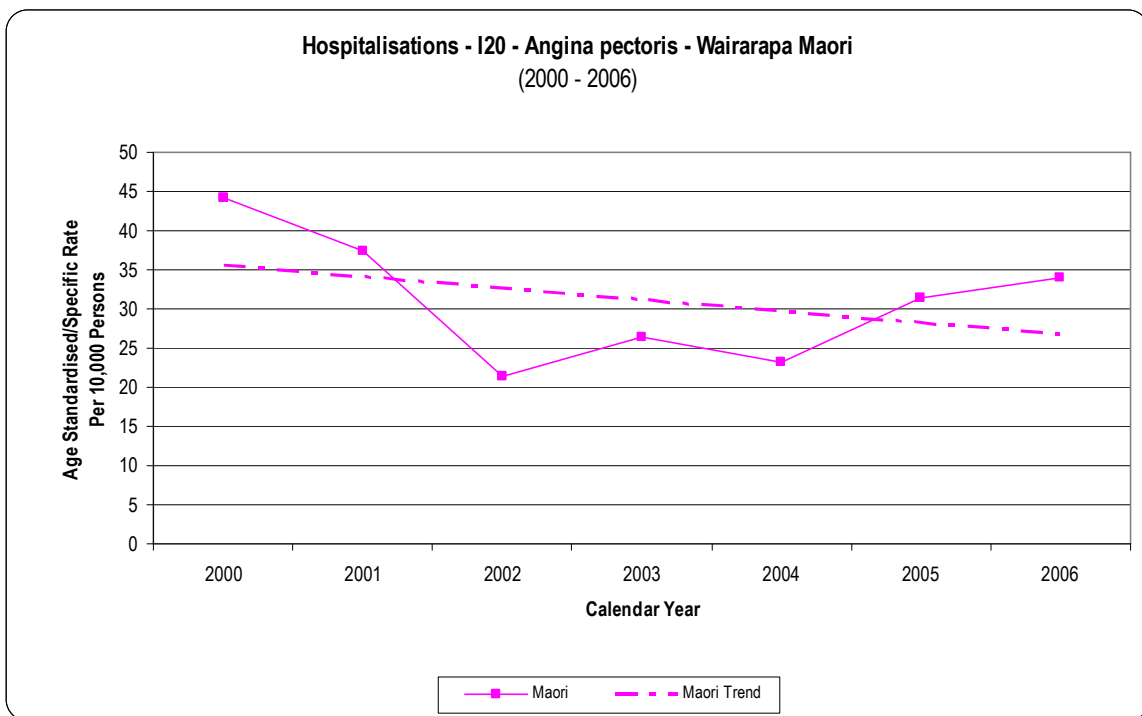
Between 2000 and 2006, there were 628 hospitalisations of Wairarapa Maori in relation to Circulatory System disease in the Wairarapa. The following graph shows age standardised hospitalisation rates for Wairarapa Maori due to Circulatory System disease for between the year 2000 and 2006. The trend during this period shows an increase for Wairarapa Maori.



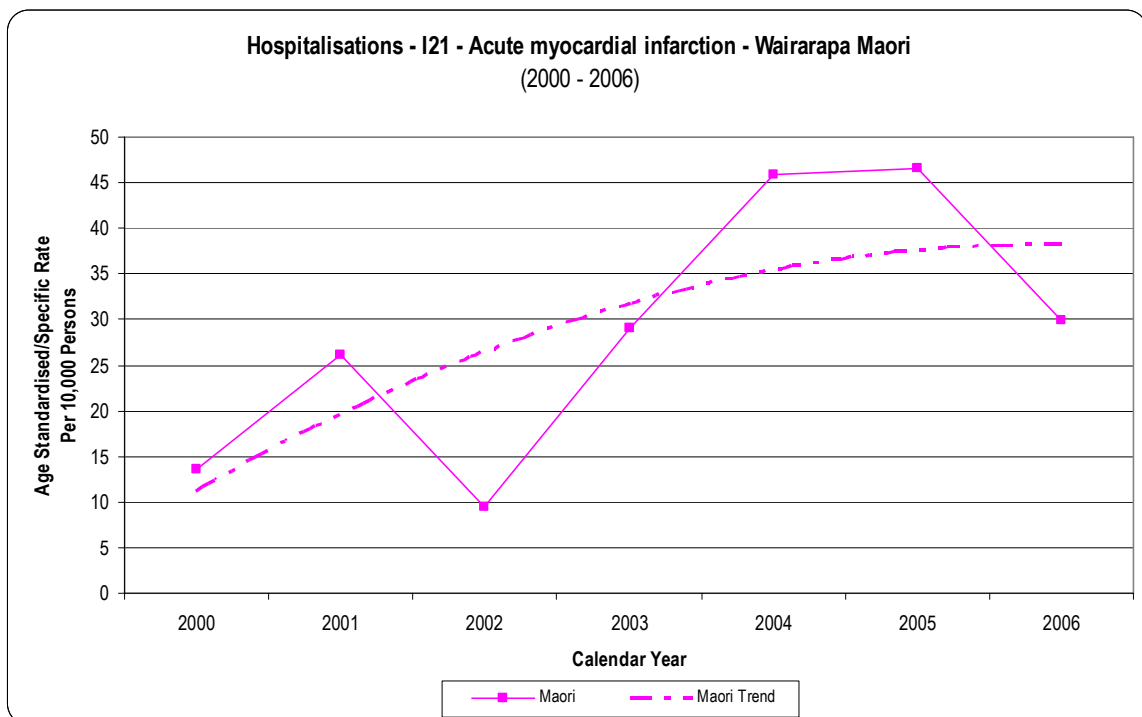
The following graph shows the age standardised hospitalisation rates of Wairarapa Maori versus New Zealand Maori due to all types of Circulatory System disease between the year 2000 and 2006. The trend during this period shows an increase for Wairarapa Maori from 2002 compared to a slight decrease for New Zealand Maori overall.



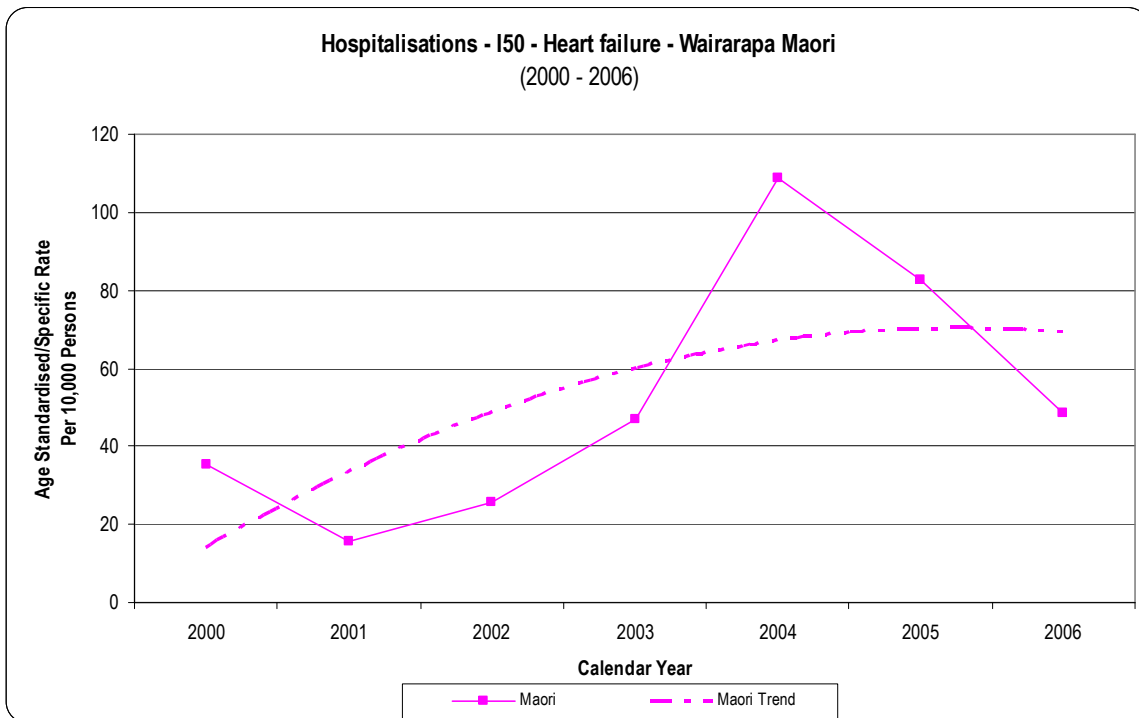
The following graph shows the age standardised hospitalisation rates of due to Angina for Wairarapa Maori, between the year 2000 and 2006. The trend in rates for Maori shows decreases during this period.



The following graph shows the age standardised hospitalisation rates due to Acute myocardial infarction (heart attack) for Wairarapa Maori, between the year 2000 and 2006. The trend in rates shows an increase for Wairarapa during this period, with a levelling off towards 2006.

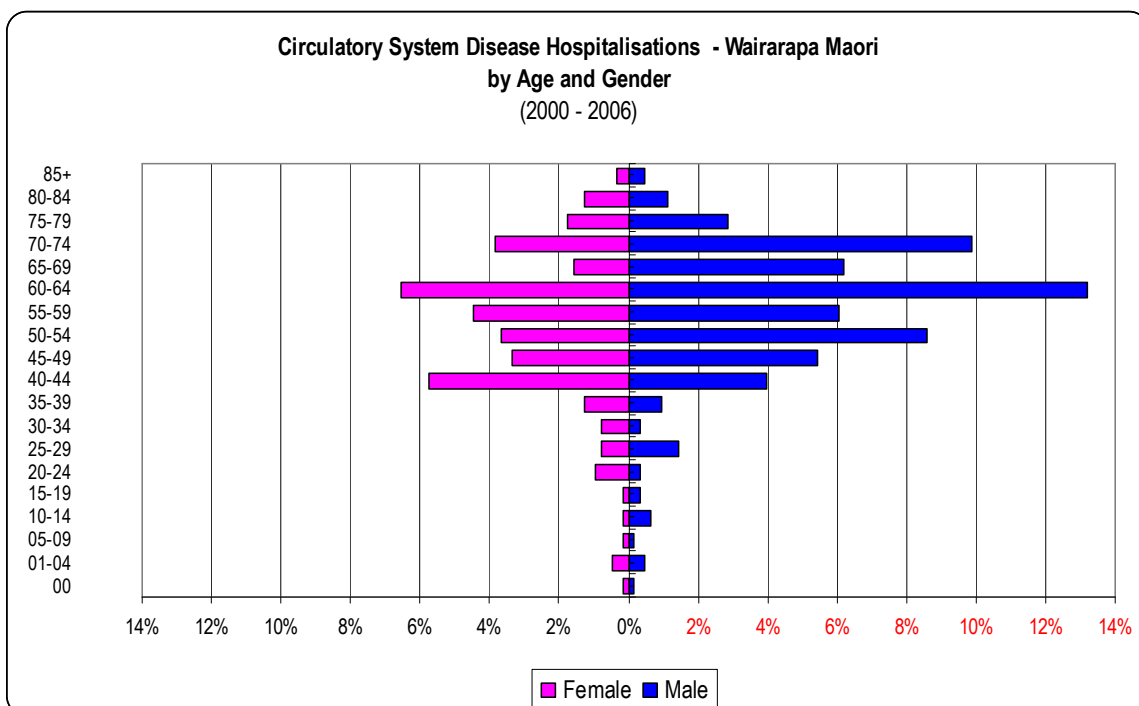


The following graph shows the age standardised hospitalisation rates due to Heart failure for Wairarapa Maori between the year 2000 and 2006. The trend in rates shows an increase for Wairarapa during this period, with a levelling off towards 2006.



### 6.1.2 Circulatory System Disease Hospitalisations – by Age Group and Gender

The following graphs clearly show that Maori males have more hospitalisations due to Circulatory System Disease than Maori females, particularly between the ages of 45 to 79. Overall, Maori males accounted for 63% of the Maori hospitalisations due to Circulatory System diseases.



### Maori Children Aged 0-14 Years

During the period year 2000 to 2006 there were 15 hospitalisations for Maori children due to circulatory system disease. The main cause for these hospitalisations was due to "Non-specific lymphadenitis" (ICD I-88) which is inflammation of a lymph node or lymph nodes, and combined there were 7 hospitalisations, 3 female and 4 male. The second most common reason for hospitalisations affecting 3 females within this age group was due to Rheumatic fever without mention of heart involvement (ICD I-00). Rheumatic fever is an inflammatory disease which may develop after infection such as strep throat or scarlet fever, and can involve the heart, joints, skin, and brain. Children aged 5 to 15 years are the most susceptible to this condition.

Other reasons for circulatory system disease hospitalisations within this age group for Maori were:

| International Classification of Disease (ICD10) Chapter |
|---|
| I01 - Rheumatic fever with heart involvement            |
| I30 - Acute pericarditis                                |
| I31 - Other diseases of pericardium                     |
| I38 - Endocarditis, valve unspecified                   |
| I47 - Paroxysmal tachycardia                            |

### Maori Youth Aged 15-24 Years

For this age group there were 11 hospitalisations for Maori due to circulatory system disease during the period year 2000 to 2006. There were 4 hospitalisations for males and 7 for females.

The reasons for circulatory system disease hospitalisations within this age group for Maori were:

| International Classification of Disease (ICD10) Chapter |
|---|
| I26 - Pulmonary embolism                                |
| I31 - Other diseases of pericardium                     |
| I33 - Acute and subacute endocarditis                   |
| I45 - Other conduction disorders                        |
| I63 - Cerebral infarction                               |
| I72 - Other aneurysm                                    |
| I77 - Other disorders of arteries and arterioles        |
| I80 - Phlebitis and thrombophlebitis                    |
| I83 - Varicose veins of lower extremities               |

### Maori Adults Aged 25-44 Years

During the period year 2000 to 2006 there were 96 hospitalisations for Maori due to circulatory system disease, 54 female and 42 male. Atrial fibrillation and flutter (ICD I-48), a cardiac arrhythmia (abnormal heart rhythm) that involves the two upper chambers (atria) of the heart, was the main cause affecting mostly females. The second most common cause was Varicose veins of lower extremities (ICD I-83) affecting mainly men.

#### Top five circulatory system disease hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |           |           |
|---|-------------------------|-----------|-----------|
|   | No. of Hospitalisations | Female    | Male      |
| I48 - Atrial fibrillation and flutter                   | 17                      | 14        | 3         |
| I83 - Varicose veins of lower extremities               | 14                      | 5         | 9         |
| I20 - Angina pectoris                                   | 8                       | 3         | 5         |
| I21 - Acute myocardial infarction                       | 6                       | 0         | 6         |
| I33 - Acute and subacute endocarditis                   | 6                       | 5         | 1         |
| Other Circulatory System Diseases                       | 45                      | 27        | 18        |
| <b>Total</b>  | <b>96</b>               | <b>54</b> | <b>42</b> |

## Maori Adults Aged 45-64 Years

For this age group there were 322 hospitalisations for Maori due to circulatory system disease during the period year 2000 to 2006. There were 209 hospitalisations for males and 113 for females.

The top two causes for hospitalisation were due to Heart Failure (ICD I-50) and Angina pectoris (ICD I-20), combined accounting for 27% of Maori male hospitalisations and 12% Maori female.

Angina pectoris is commonly known as angina, and is chest pain due to ischemia (a lack of blood and hence oxygen supply) of the heart muscle, generally due to obstruction or spasm of the coronary arteries (the heart's blood vessels).

### Top five circulatory system disease hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |            |            |
|---|-------------------------|------------|------------|
|   | No. of Hospitalisations | Female     | Male       |
| I50 - Heart failure                                     | 69                      | 16         | 53         |
| I20 - Angina pectoris                                   | 58                      | 21         | 37         |
| I21 - Acute myocardial infarction                       | 52                      | 10         | 42         |
| I48 - Atrial fibrillation and flutter                   | 24                      | 14         | 10         |
| I83 - Varicose veins of lower extremities               | 17                      | 10         | 7          |
| Other Circulatory System Diseases                       | 102                     | 42         | 60         |
| <b>Total</b>  | <b>322</b>              | <b>113</b> | <b>209</b> |

## Older Maori people Aged 65 + Years

Between the year 2000 and 2006 there were a 184 hospitalisations for Maori in the Wairarapa due to circulatory system diseases in this age group. Overall, 30% of these were for females and 70% for males.

The top five causes accounted for 77% of the hospitalisations, males and females combined. These were:

- I50 - Heart failure
- I48 - Atrial fibrillation and flutter
- I21 - Acute myocardial infarction
- I20 - Angina pectoris
- I49 - Other cardiac arrhythmias

The tables below show a breakdown for Maori people aged 65 years and over.

### Older Maori people Aged 65 - 74

#### Top five circulatory system disease hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |           |            |
|---|-------------------------|-----------|------------|
|   | No. of Hospitalisations | Female    | Male       |
| I50 - Heart failure                                     | 43                      | 9         | 34         |
| I48 - Atrial fibrillation and flutter                   | 26                      | 5         | 21         |
| I21 - Acute myocardial infarction                       | 15                      | 4         | 11         |
| I20 - Angina pectoris                                   | 13                      | 3         | 10         |
| I63 - Cerebral infarction                               | 5                       | 2         | 3          |
| Other Circulatory System Diseases                       | 33                      | 11        | 22         |
| <b>Total</b>  | <b>135</b>              | <b>34</b> | <b>101</b> |

## Older Maori people Aged 75 - 84

### Top five circulatory system disease hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |           |           |
|---|-------------------------|-----------|-----------|
|   | No. of Hospitalisations | Female    | Male      |
| I50 - Heart failure                                     | 17                      | 6         | 11        |
| I20 - Angina pectoris                                   | 6                       | 5         | 1         |
| I21 - Acute myocardial infarction                       | 6                       | 3         | 3         |
| I48 - Atrial fibrillation and flutter                   | 5                       | 2         | 3         |
| I49 - Other cardiac arrhythmias                         | 2                       | 0         | 2         |
| Other Circulatory System Diseases                       | 8                       | 3         | 5         |
| <b>Total</b>  | <b>44</b>               | <b>19</b> | <b>25</b> |

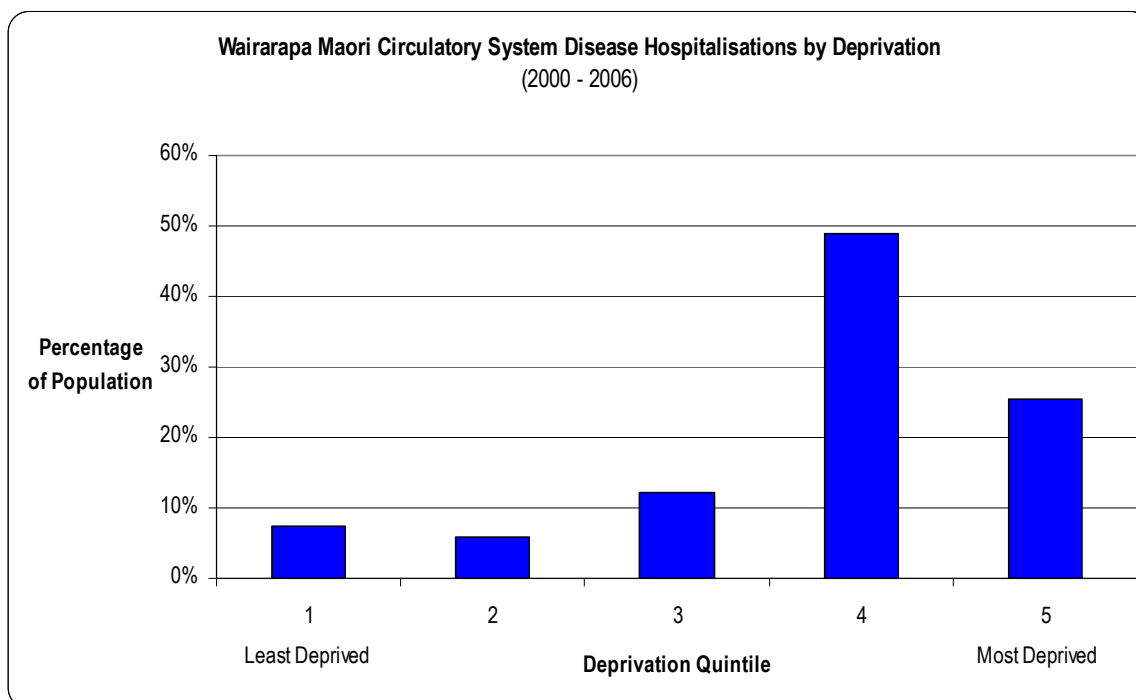
## Older Maori people Aged 85 +

During the period year 2000 to 2006 there were 5 hospitalisations for Wairarapa Maori aged 85 years and over, 2 females and 3 males. These hospitalisations were due to:

- I20 - Angina pectoris
- I21 - Acute myocardial infarction
- I50 - Heart failure

### 6.1.3 Circulatory System Disease Hospitalisations by Deprivation

The following graph shows the breakdown of Wairarapa Maori hospitalisations due to circulatory system diseases by deprivation between the year 2000 and 2006. Hospitalisations due to circulatory system diseases were the highest in Quintile 4 at 49%.



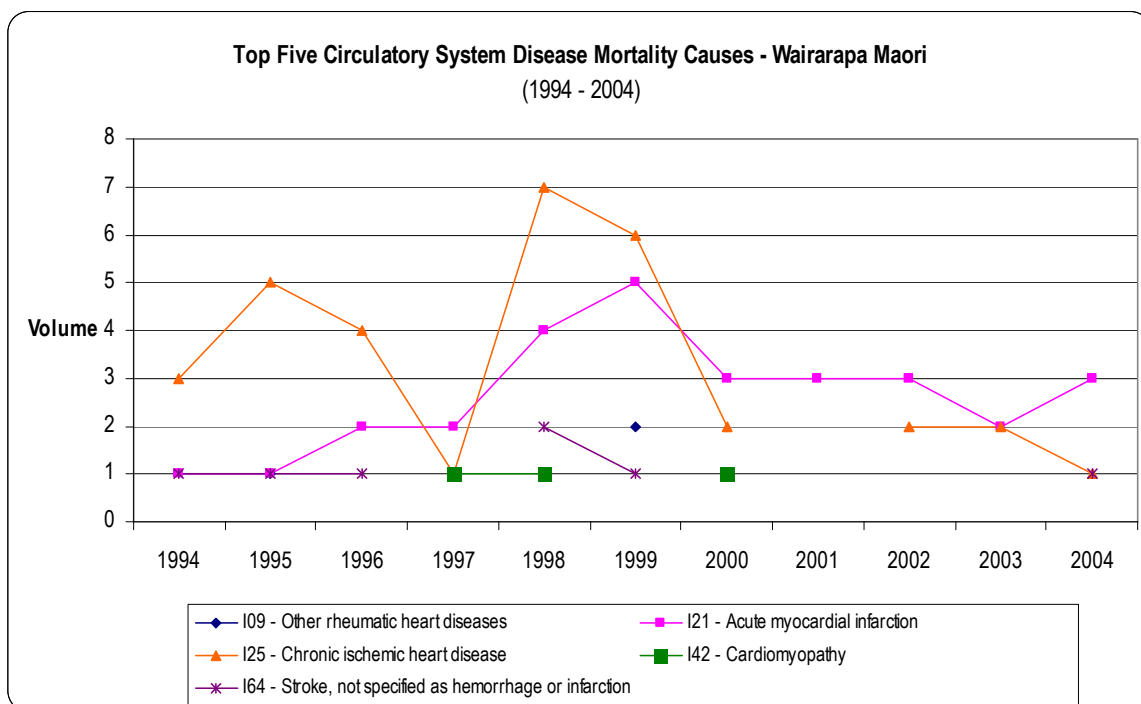
## 6.1.4 Circulatory System Disease Mortality

The following table shows the percentage of Circulatory System disease mortality comparing Wairarapa Maori and New Zealand Maori between 1994 and 2004. The percentage of mortality due to Chronic ischaemic heart disease was significantly higher for Wairarapa Maori than New Zealand Maori during this period. Ischemia means a "reduced blood supply".

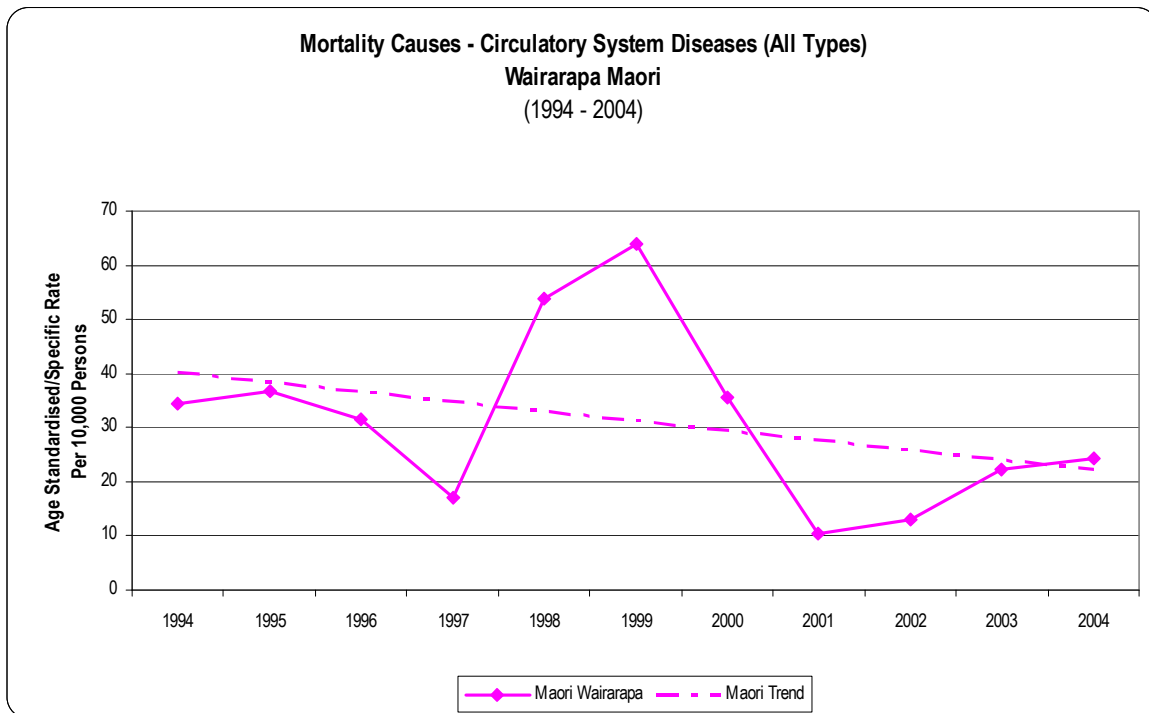
### Top Five Hospitalisations

| International Classification of Disease (ICD10) Chapter | Maori            |             |               |
|---|------------------|-------------|---------------|
|   | Wairarapa Number | Wairarapa % | New Zealand % |
| I25 - Chronic ischemic heart disease                    | 33               | 33%         | 27%           |
| I21 - Acute myocardial infarction                       | 29               | 29%         | 29%           |
| I64 - Stroke, not specified as hemorrhage or infarction | 7                | 7%          | 5%            |
| I09 - Other rheumatic heart diseases                    | 3                | 3%          | 1%            |
| I42 - Cardiomyopathy                                    | 3                | 3%          | 6%            |
| Other Circulatory System Diseases                       | 25               | 25%         | 32%           |
| <b>Total</b>  | <b>100</b>       | <b>100%</b> | <b>100%</b>   |

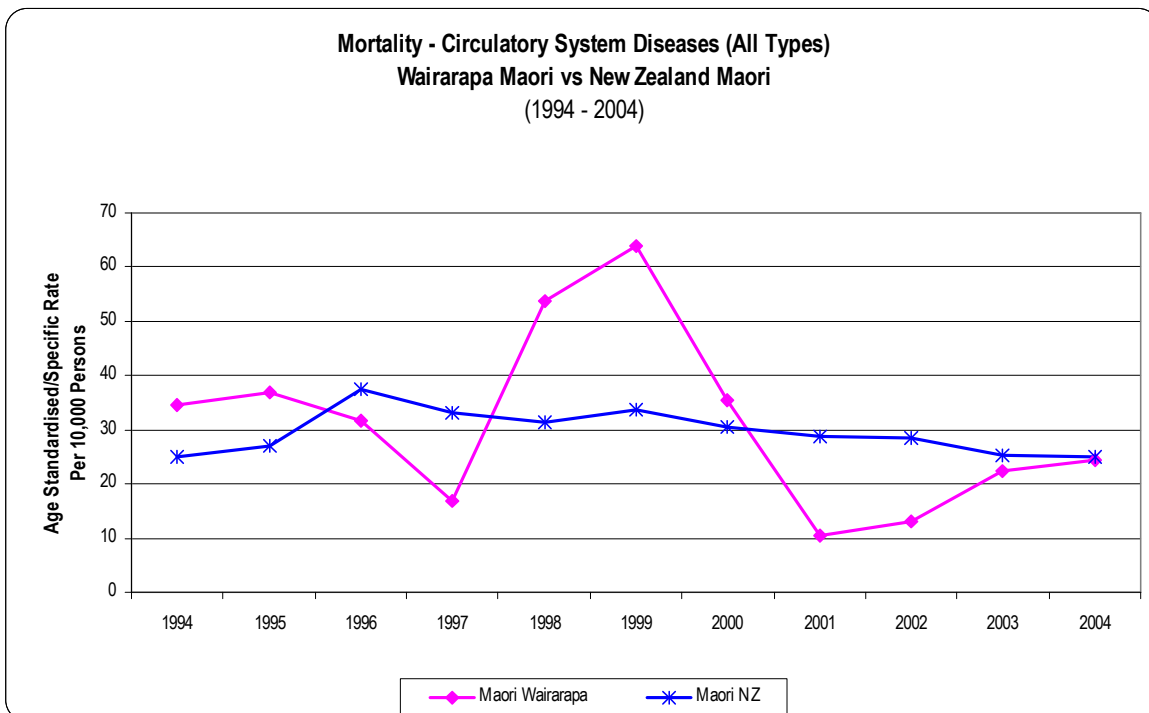
The following graph shows the top five causes of Wairarapa Maori mortality due to Circulatory System Disease by volume between 1994 and 2004. The trend for Chronic ischemic heart disease is showing a decrease whereas the trend for Acute Myocardial infarction (heart attack) shows a slight increase.



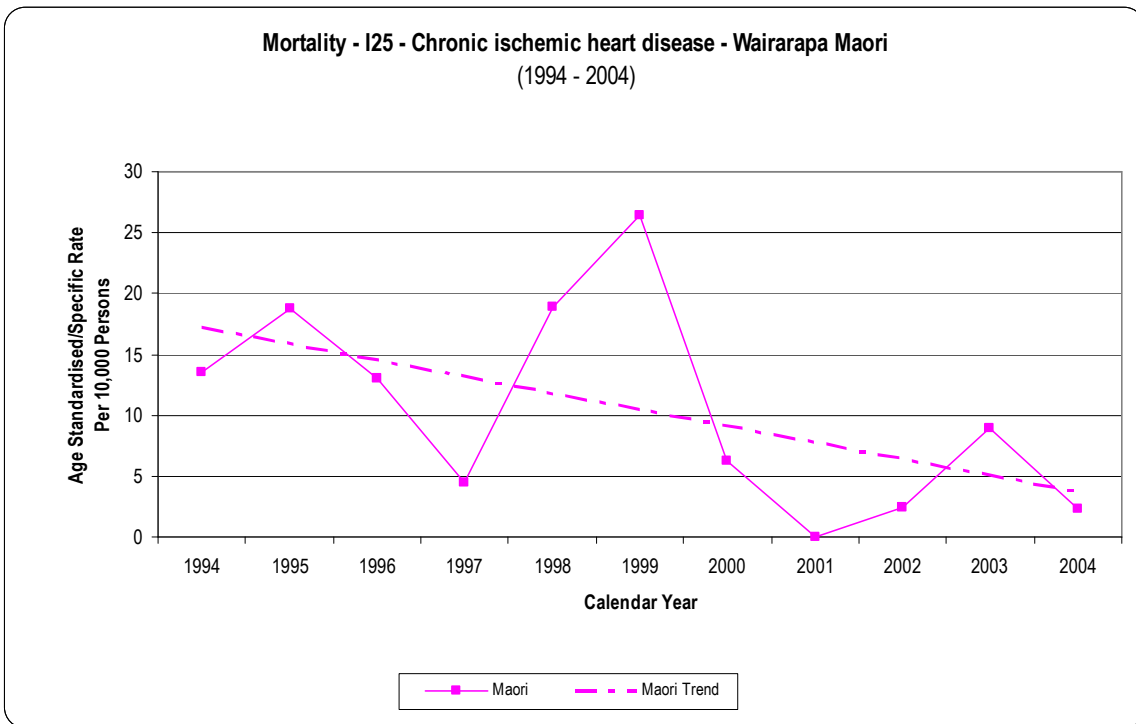
Between 1994 and 2004 there were 100 Wairarapa Maori deaths due to Circulatory System diseases. The following graph shows the age standardised mortality rates due to Circulatory System diseases (all types) for Wairarapa Maori. Trends show the rates have fallen during the ten year period between 1994 and 2004.



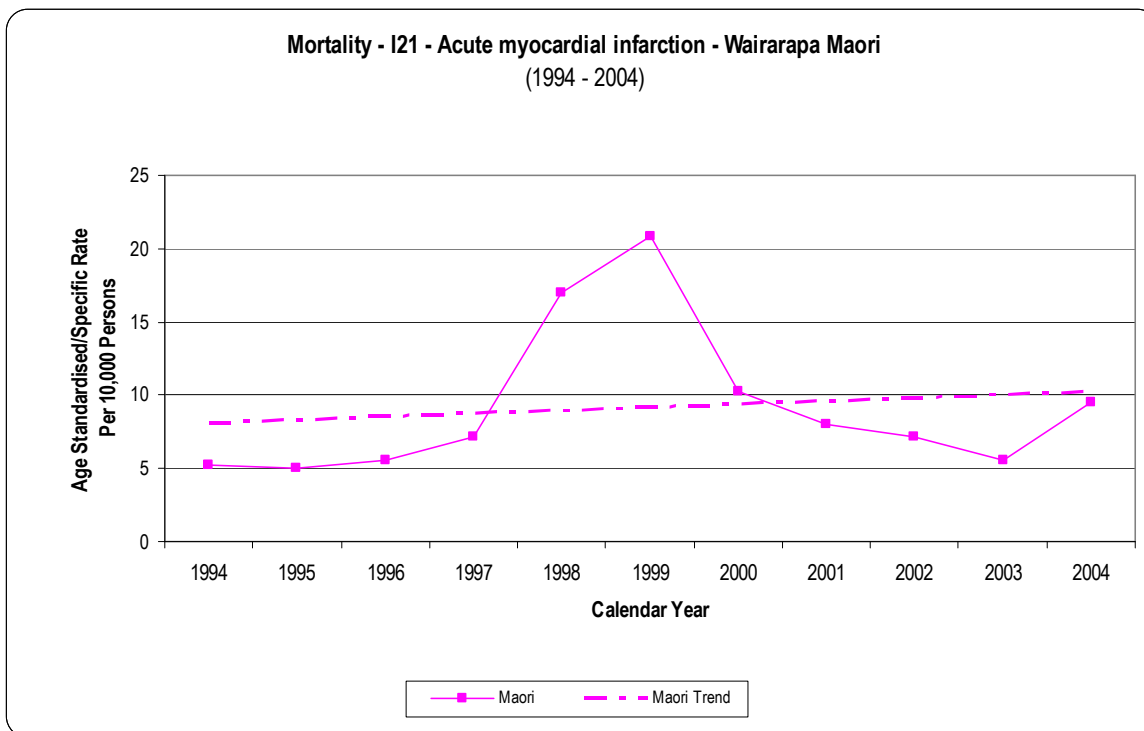
The following graph shows the age standardised mortality rates for Wairarapa Maori versus New Zealand Maori due to all types of Circulatory System disease between 1994 and 2004. The trends for both Wairarapa and New Zealand Maori show decreases during this period.



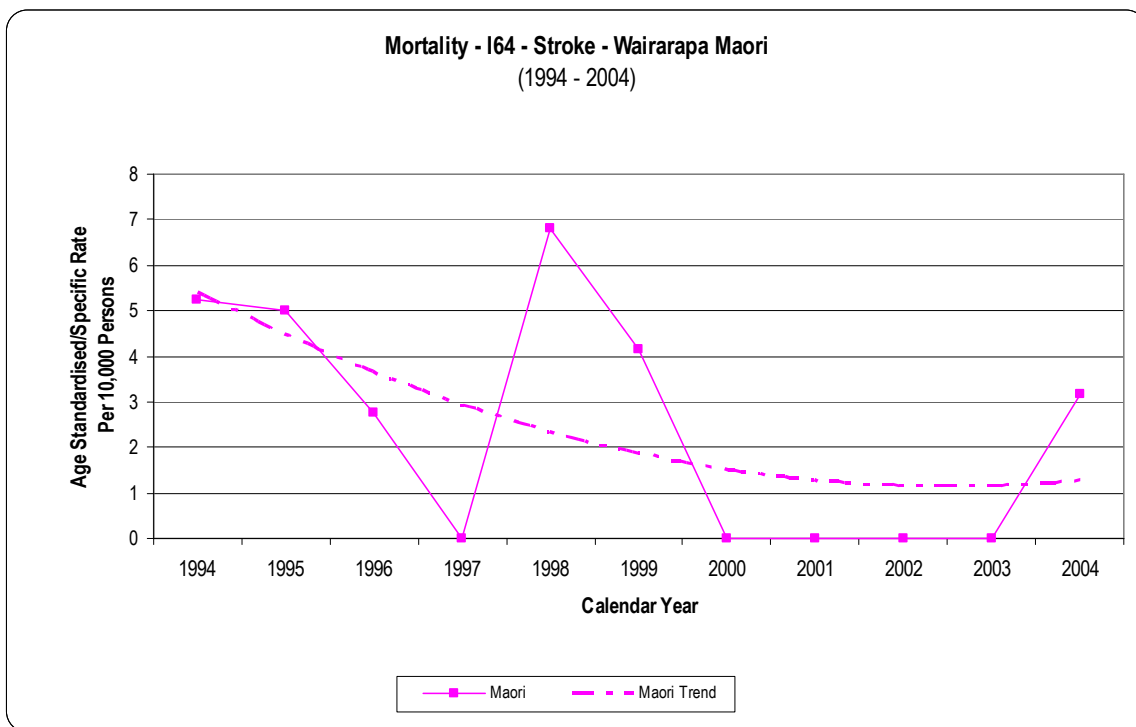
The following graph shows the age standardised mortality rates due to Chronic Ischemic Heart disease for Wairarapa Maori, between 1994 and 2004. The trends show mortality rates for Maori due to Chronic ischemic heart disease decreasing.



The following graph shows the age standardised mortality rates due to Acute Myocardial Infarction (heart attack) for Wairarapa Maori, between 1994 and 2004. Trends show a slight increase during this ten year period.

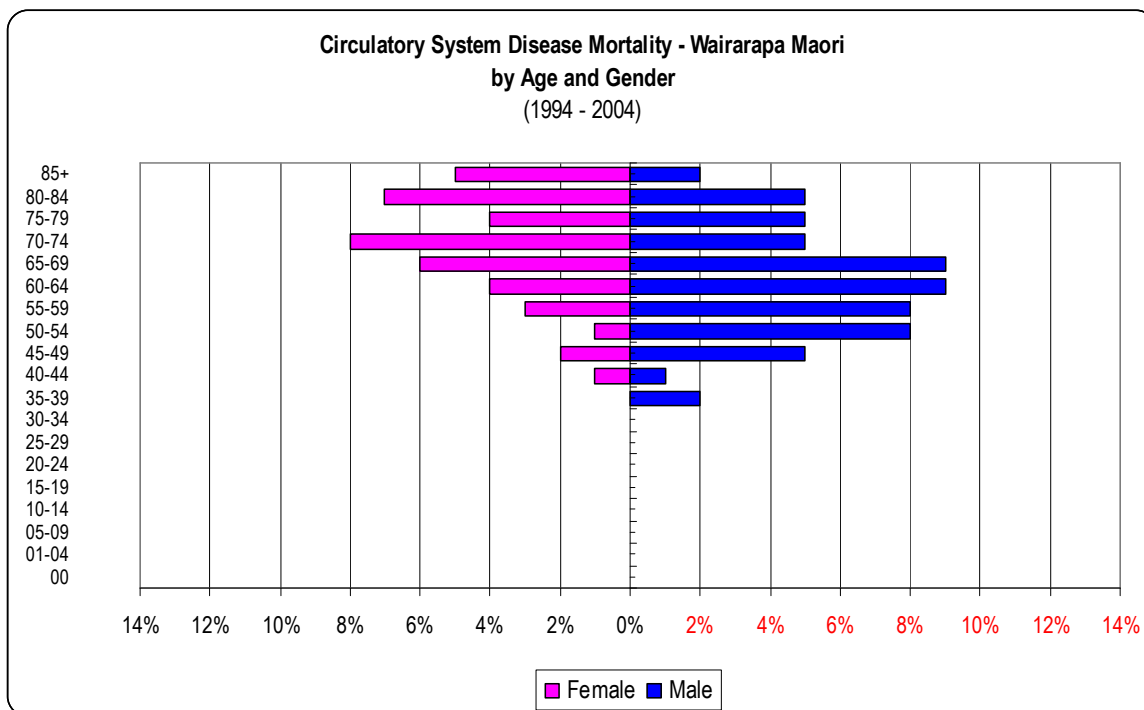


The following graph shows the age standardised mortality rates due to Stroke for Wairarapa Maori, between 1994 and 2004. The trend shows rates decreasing from 1994 up to 2002, where it begins to level out.



### 6.1.5 Circulatory System Disease Mortality - by Age Group and Gender

The following graph clearly shows that Wairarapa Maori men are more likely to die earlier as a result of Circulatory System diseases than Wairarapa Maori women. From the age of 80 the percentage of Wairarapa Maori dying from Circulatory System Diseases is more than double that of Wairarapa Maori men, reflecting the shorter life expectancy of Maori men.



### Wairarapa Maori Aged 0-64 Years

During the period 1994 to 2004 there were 44 deaths in this age group due to circulatory system disease in the Wairarapa. The main cause was Chronic ischemic heart disease.

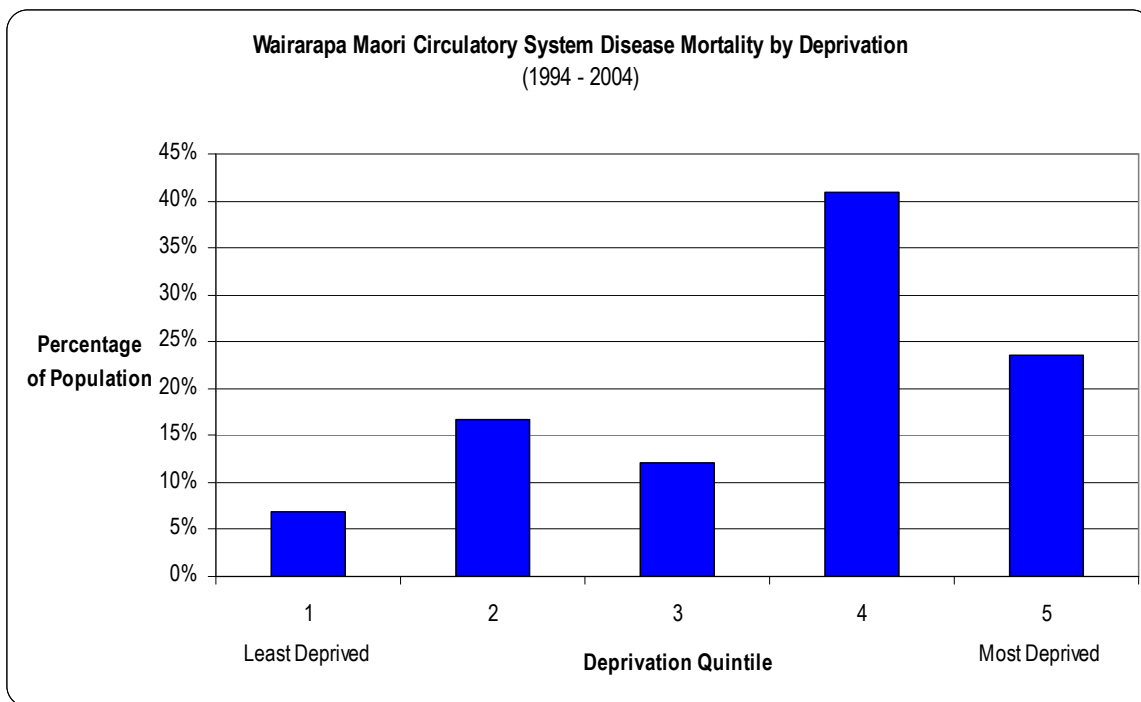
### Wairarapa Maori Aged 65 + Years

For this age group there were 56 deaths due to circulatory system disease during the period 1994 to 2004, 30 females and 26 males. The two main causes of death were:

- Acute myocardial infarction (heart attack)
- Chronic ischemic heart disease (Ischemia meaning "reduced blood supply")

## 6.1.6 Circulatory System Disease Mortality by Deprivation

The following graph shows the breakdown of Wairarapa Maori mortality due to circulatory system diseases to the deprivation level between the years 1994 and 2004. The highest number of deaths was in Quintile 4 at 41%.



## 6.2 Diabetes

### 6.2.1 Diabetes Hospitalisations

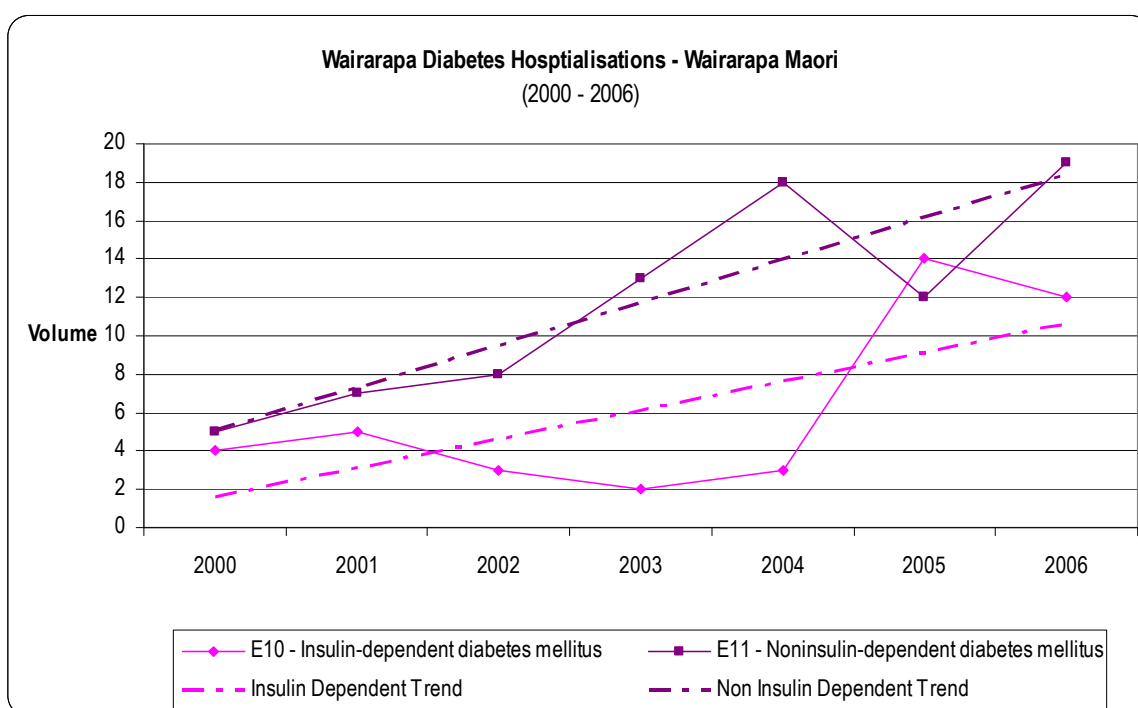
Between 2000 and 2006, there were 125 hospitalisations of Wairarapa Maori in relation to Diabetes in the Wairarapa.

The following table shows the percentage of diabetes hospitalisations comparing Wairarapa Maori and New Zealand Maori between the year 2000 and 2006. The percentage of hospitalisations in the Wairarapa for Insulin dependent diabetes were higher than nationally, while Non Insulin diabetes hospitalisations were the reverse of this.

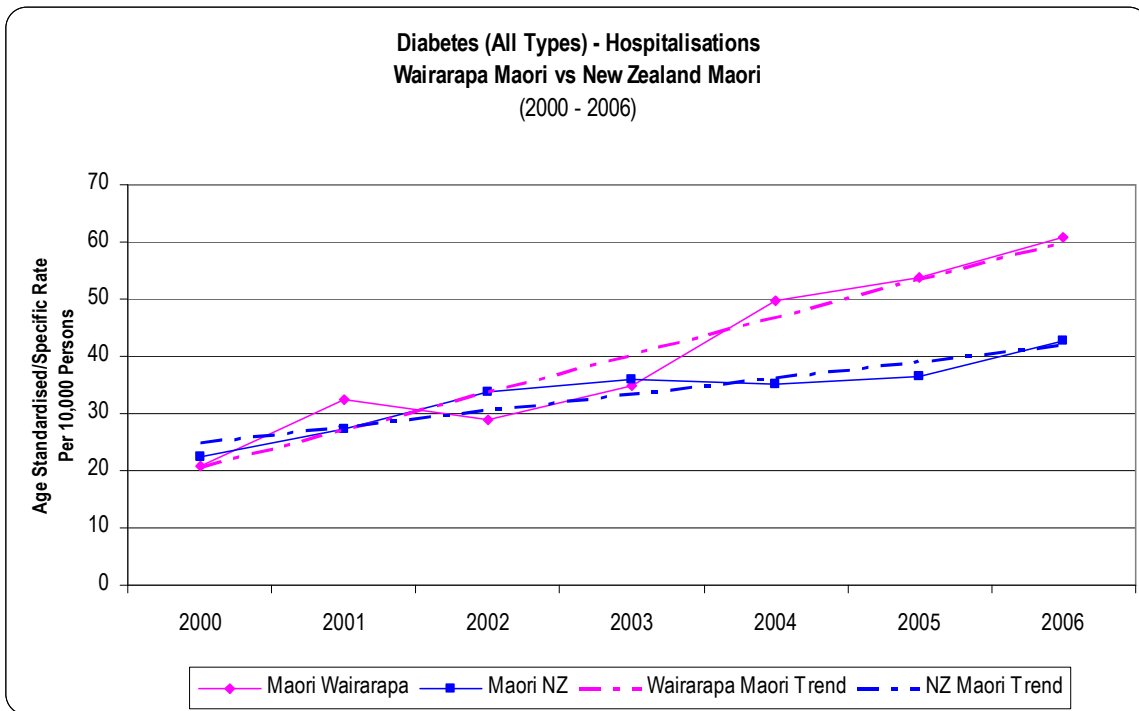
#### Diabetes Hospitalisations

| International Classification of Disease (ICD10) Chapter | Maori            |             |               |
|---|------------------|-------------|---------------|
|   | Wairarapa Number | Wairarapa % | New Zealand % |
| E10 - Insulin dependent diabetes mellitus               | 43               | 34%         | 21%           |
| E11 - Non Insulin dependent diabetes mellitus           | 82               | 66%         | 78%           |
| E12-14 - Other Diabetes                                 | 0                | 0%          | 1%            |
| <b>Total</b>  | <b>125</b>       | <b>100%</b> | <b>100%</b>   |

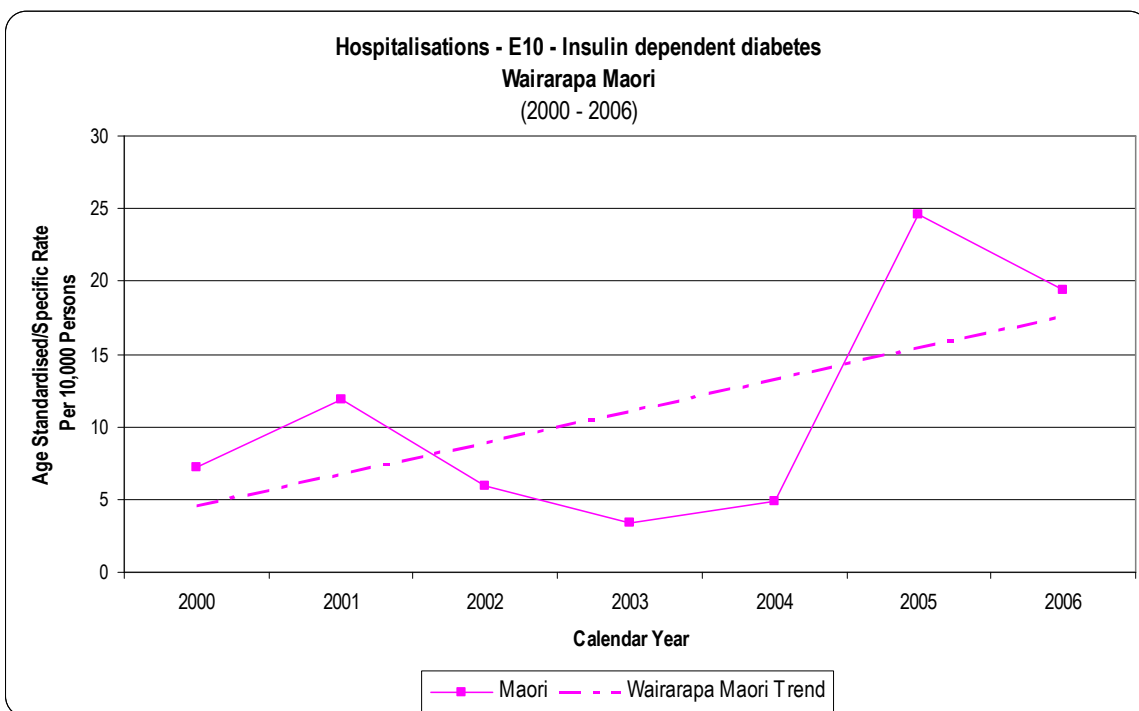
The following graph shows the Wairarapa Maori hospitalisations due to Diabetes by type and volume between the year 2000 and 2006. Taking into account the peaks and troughs in the graph, the trends for both Insulin and Non Insulin dependent diabetes show a similar increase during this period.



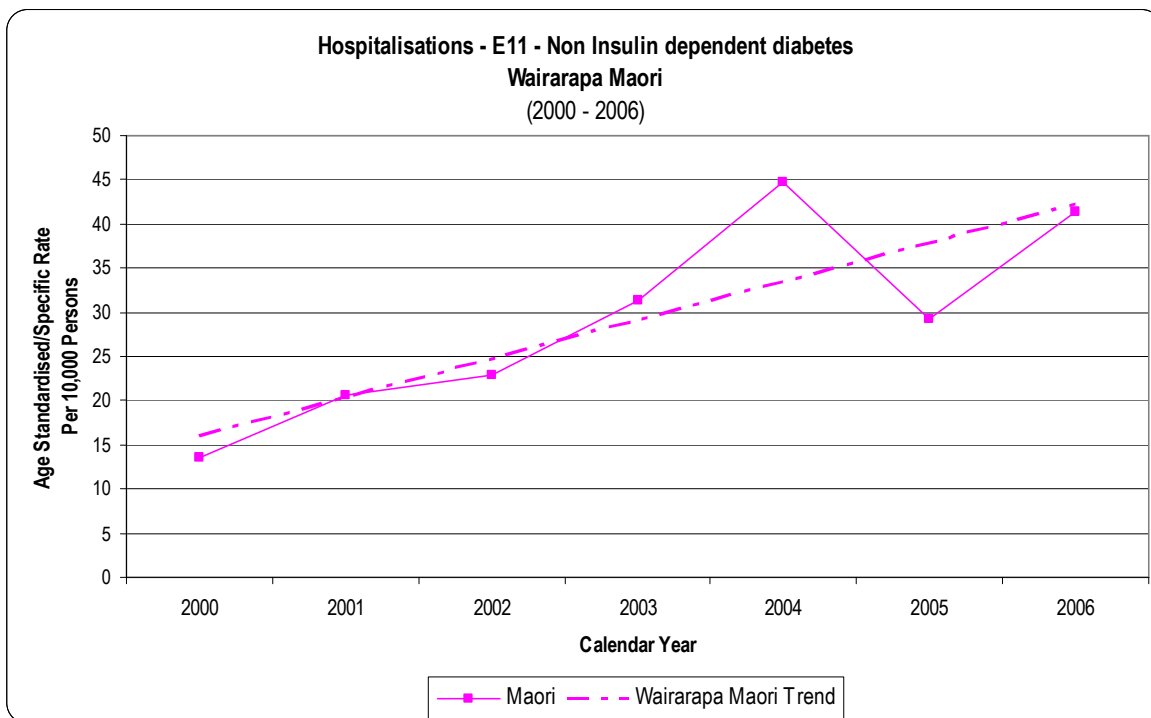
The following graph shows the age standardised hospitalisation rate for Wairarapa Maori due to Diabetes (all types), compared with New Zealand Maori, between the year 2000 and 2006. In the year 2000 hospitalisation rates were fairly similar for both Wairarapa and New Zealand Maori. Since then hospitalisation rates have increased for both, with the increase for Wairarapa Maori being significant.



The following graph shows the age standardised rates of Wairarapa Maori hospitalisations due to Insulin dependent diabetes by ethnicity, between the year 2000 and 2006. The trend in rates show an increase for Wairarapa Maori during this period.

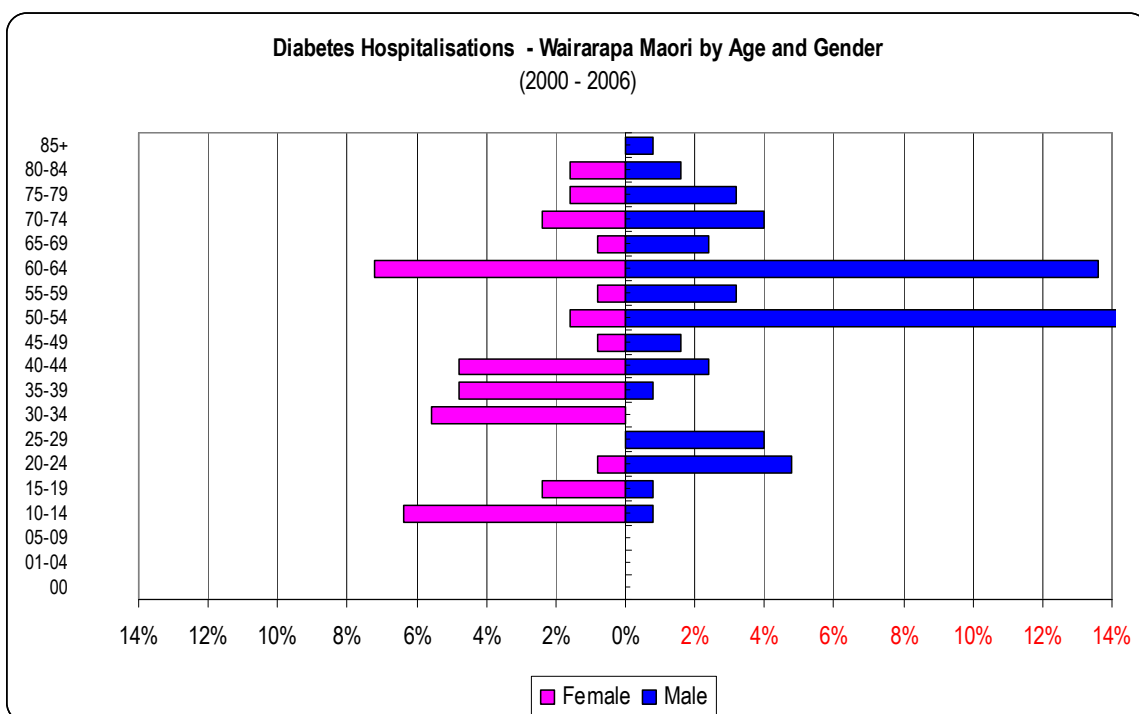


The following graph shows the age standardised hospitalisation rates of Wairarapa Maori due to Non insulin dependent diabetes, between the year 2000 and 2006. As for Insulin dependent diabetes, the trend in rates for Non Insulin dependent diabetes also shows an increase for Wairarapa Maori during this period.



### 6.2.2 Diabetes Hospitalisations – by Age Group and Gender

The following graph shows that Wairarapa Maori males have a higher percentage of hospitalisations in the 50-54 and 60-64 year age groups, accounting for 28% of Maori diabetes hospitalisations overall. The split between Wairarapa Maori males and females diabetes hospitalisations is 42% for females, and 58% for males.



### Maori Children Aged 0-14 Years

During the period year 2000 to 2006 there were 9 hospitalisations of Wairarapa Maori children due to Insulin dependent diabetes. All of these were in the 10-14 age band, and almost all of these were Maori female children.

### Maori Youth Aged 15-24 Years

For this age group there were 11 hospitalisations of Wairarapa Maori due to Insulin dependent diabetes during the period year 2000 to 2006. There were 7 hospitalisations for males and 4 for females.

### Maori Adults Aged 25-44 Years

During the period year 2000 to 2006 there were 28 hospitalisations in this age group due to diabetes. Wairarapa Maori females were hospitalised more than Wairarapa Maori males, particularly due to Non Insulin dependent diabetes.

#### Diabetes hospitalisations

| International Classification of Disease (ICD10) Chapter | Maori                   |            |            |
|---|-------------------------|------------|------------|
|   | No. of Hospitalisations | % Female   | % Male     |
| E10 - Insulin dependent diabetes mellitus               | 16                      | 29%        | 29%        |
| E11 - Non Insulin dependent diabetes mellitus           | 12                      | 39%        | 3%         |
| E12-14 - Other Diabetes                                 | 0                       | 0%         | 0%         |
| <b>Total</b>  | <b>28</b>               | <b>68%</b> | <b>32%</b> |

### Maori Adults Aged 45-64 Years

Of the 54 hospitalisations in this age group, there were significantly more hospitalisations of Wairarapa Maori males due to diabetes between the year 2000 and 2006. Hospitalisations were higher overall due to Non Insulin dependent diabetes, particularly those people in the 60-64 age band.

#### Diabetes hospitalisations

| International Classification of Disease (ICD10) Chapter | Maori                   |            |            |
|---|-------------------------|------------|------------|
|   | No. of Hospitalisations | % Female   | % Male     |
| E10 - Insulin dependent diabetes mellitus               | 5                       | 4%         | 6%         |
| E11 - Non Insulin dependent diabetes mellitus           | 49                      | 20%        | 70%        |
| E12-14 - Other Diabetes                                 | 0                       | 0%         | 0%         |
| <b>Total</b>  | <b>54</b>               | <b>24%</b> | <b>76%</b> |

### Older Maori People Aged 65 + Years

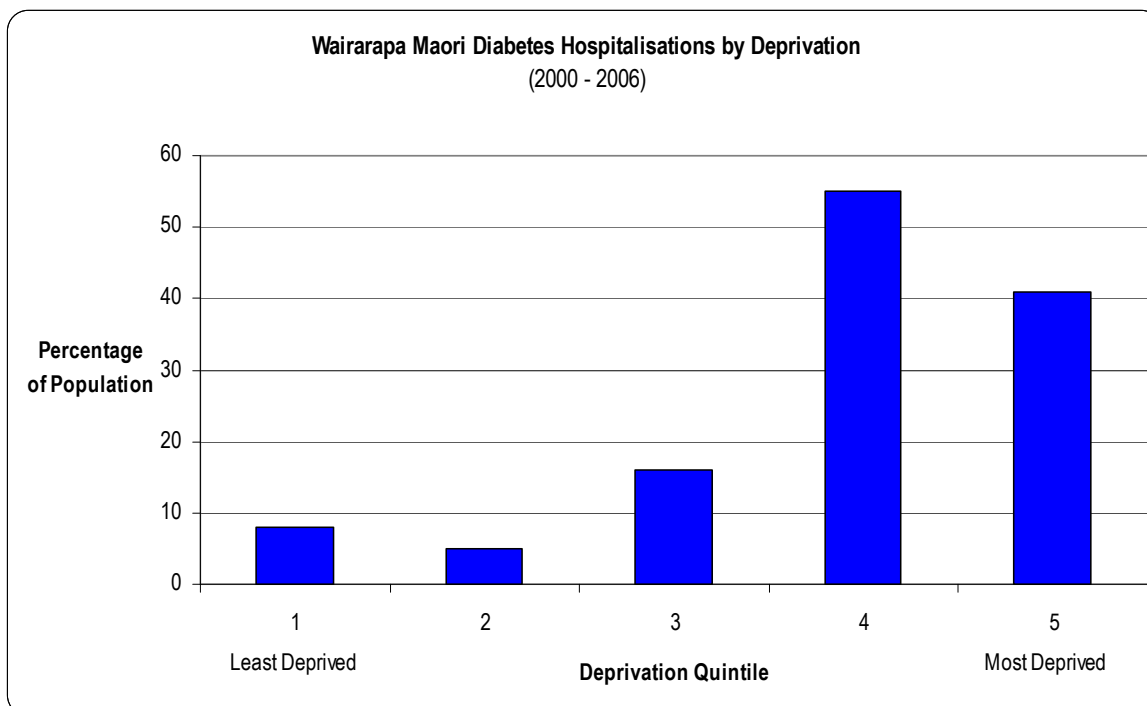
For this age group there were 23 hospitalisations of Wairarapa Maori due to diabetes during the period year 2000 to 2006.

#### Diabetes hospitalisations

| International Classification of Disease (ICD10) Chapter | Maori                   |            |            |
|---|-------------------------|------------|------------|
|   | No. of Hospitalisations | % Female   | % Male     |
| E10 - Insulin dependent diabetes mellitus               | 2                       | 0%         | 8%         |
| E11 - Non Insulin dependent diabetes mellitus           | 21                      | 35%        | 57%        |
| E12-14 - Other Diabetes                                 | 0                       | 0%         | 0%         |
| <b>Total</b>  | <b>23</b>               | <b>35%</b> | <b>65%</b> |

### 6.2.3 Diabetes Hospitalisations by Deprivation

The following graph shows the breakdown of hospitalisations due to diabetes by deprivation level between the year 2000 and 2006. The highest percentage of hospitalisations was for Wairarapa Maori in Quintile 4 at 44%.



### 6.2.4 Diabetes Mortality

The following table shows the diabetes mortality percentage between 1994 and 2004, comparing Wairarapa Maori with New Zealand Maori overall. All deaths occurred in the age group 45 years and over, with the differences in Wairarapa Maori mortality due to the differing diabetes types not significantly different from that of New Zealand Maori.

#### Diabetes Mortality

| International Classification of Disease (ICD10) Chapter | Maori            |             |               |
|---|------------------|-------------|---------------|
|   | Wairarapa Number | Wairarapa % | New Zealand % |
| E10 - Insulin dependent diabetes mellitus               | 2                | 10%         | 11%           |
| E11 - Non Insulin dependent diabetes mellitus           | 18               | 90%         | 89%           |
| E12-14 - Other Diabetes                                 | 0                | 0%          | 0%            |
| <b>Total</b>  | <b>20</b>        | <b>100%</b> | <b>100%</b>   |

## 6.3 Kidney Disease, Renal Failure and Urology

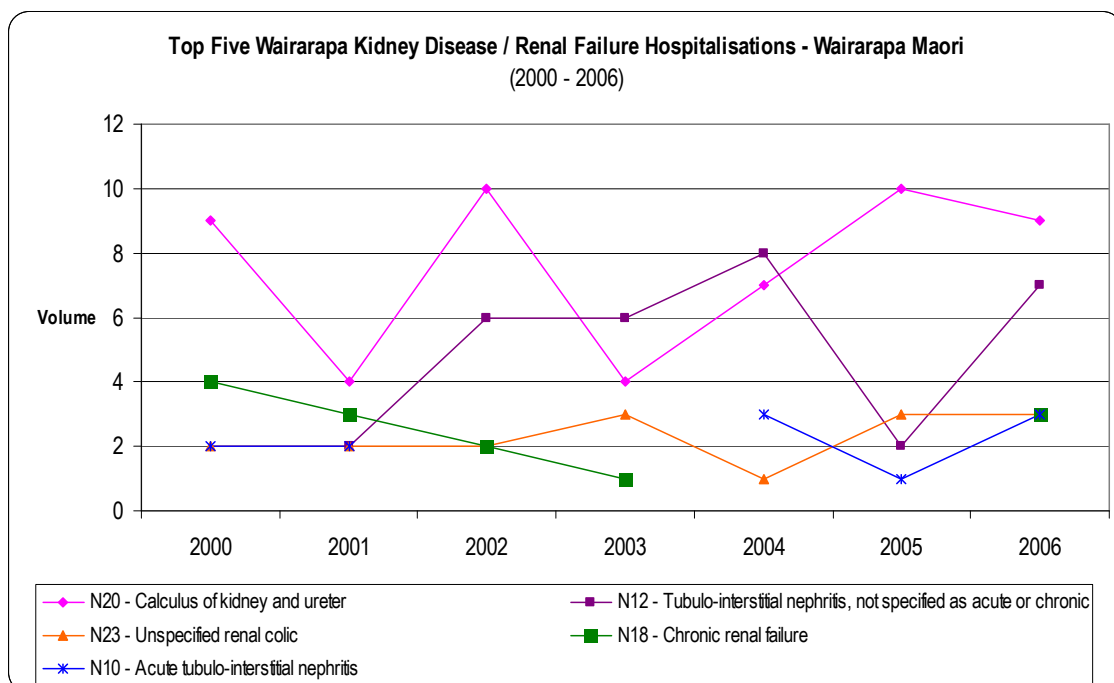
### 6.3.1 Kidney Disease and Renal Failure Hospitalisations

The following table shows the percentage of Kidney Disease and Renal Failure hospitalisations comparing Wairarapa Maori and New Zealand Maori between the year 2000 and 2006. The top five conditions in this table account for 75% of these hospitalisations in the Wairarapa Maori. Overall, the percentages of hospitalisations in the Wairarapa are similar to the Maori national percentages, although hospitalisations due to Calculus of kidney and ureter were 9% higher in the Wairarapa.

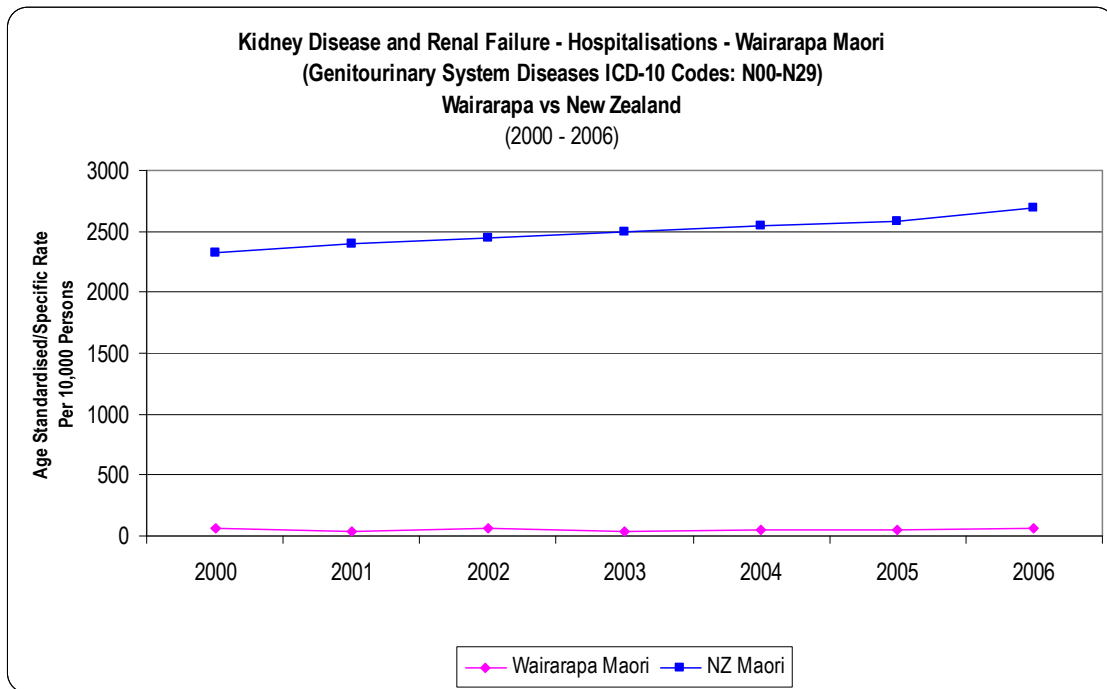
#### Top Five Hospitalisations

| International Classification of Disease (ICD10) Chapter                | Maori            |             |               |
|--|------------------|-------------|---------------|
|  | Wairarapa Number | Wairarapa % | New Zealand % |
| N20 - Calculus of kidney and ureter                                    | 53               | 32%         | 23%           |
| N23 - Unspecified renal colic  | 31               | 10%         | 8%            |
| N12 - Tubulo-interstitial nephritis, not specified as acute or chronic | 16               | 18%         | 20%           |
| N18 - Chronic renal failure  | 13               | 8%          | 11%           |
| N17 - Acute renal failure  | 11               | 7%          | 9%            |
| Other Genitourinary system diseases                                    | 44               | 25%         | 29%           |
| <b>Total</b>   | <b>168</b>       | <b>100%</b> | <b>100%</b>   |

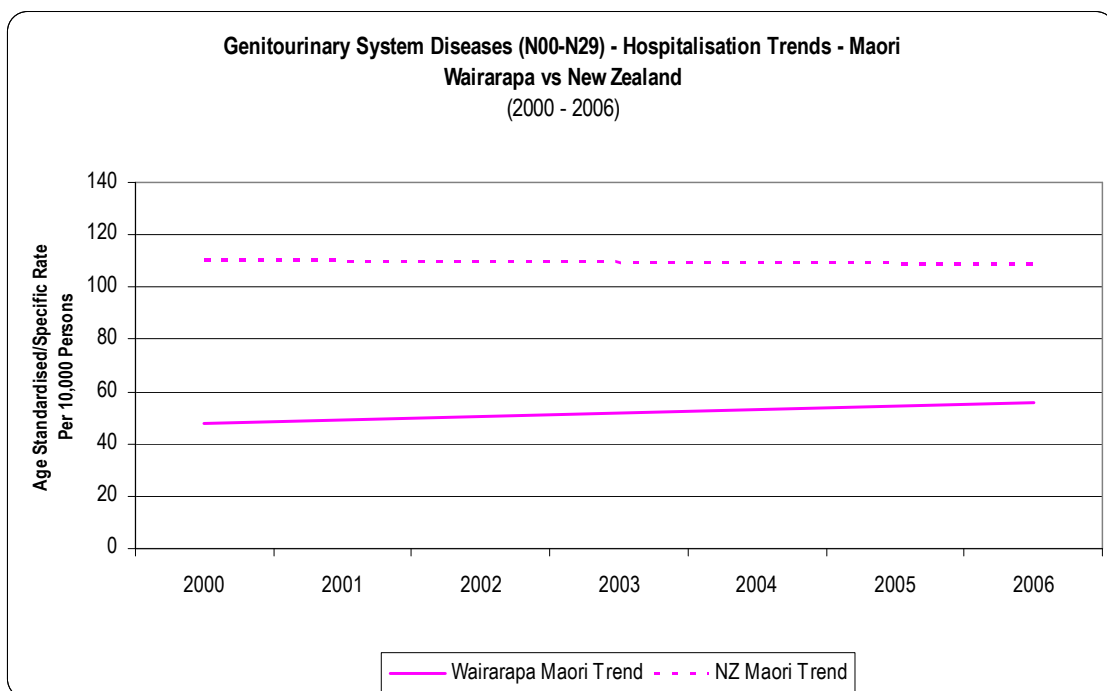
The following graph shows the top five causes of Wairarapa hospitalisations of Wairarapa Maori due to Kidney disease and Renal failure by volume between the year 2000 and 2006. The trend for hospitalisations for Calculus of kidney and ureter, also known as kidney stones, has increased slightly during this period. Kidney stones are solid masses that form in the kidneys. Research has found that risk factors for kidney stones include type II diabetes and obesity.



The following graph shows the age standardised hospitalisation rates due to Kidney disease and Renal failure for Wairarapa Maori (Genitourinary system diseases: ICD-10 codes N00-N29), between the year 2000 and 2006. The Wairarapa Maori rates are significantly below the New Zealand Maori rates.

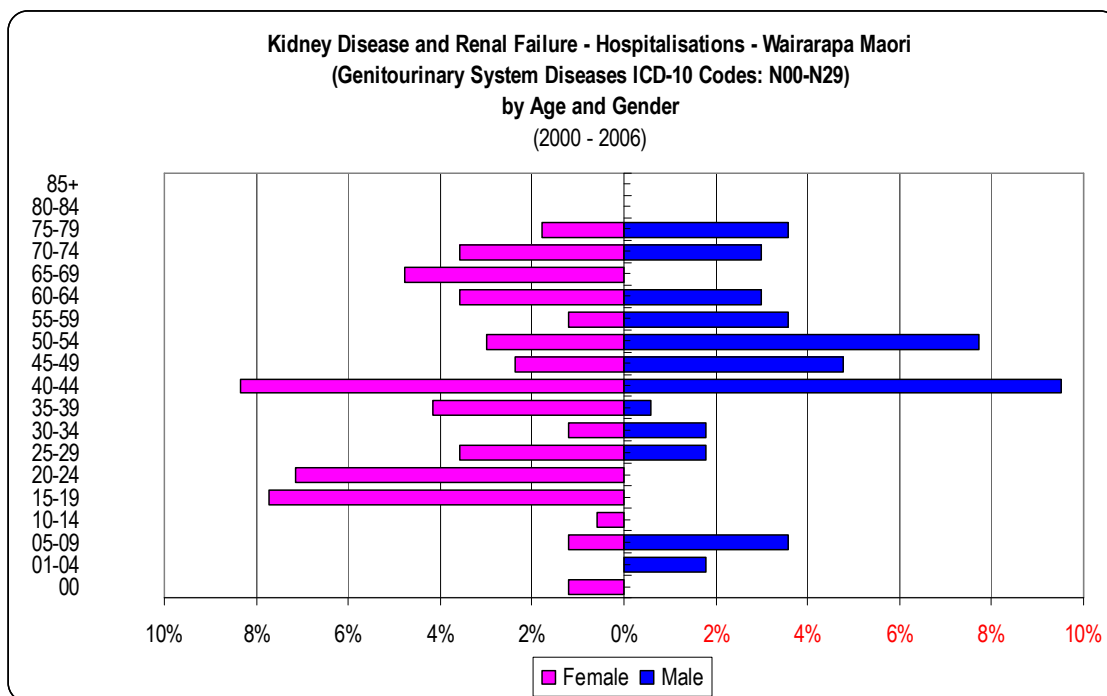


The following graph shows the age standardised hospitalisation rate trends due to Kidney disease and Renal failure for Wairarapa Maori (Genitourinary system diseases: ICD-10 codes N00-N29), compared to new Zealand Maori between the year 2000 and 2006.



### 6.3.2 Kidney Disease and Renal Failure Hospitalisations – by Age Group and Gender

The following graphs show that Wairarapa Maori females had more hospitalisations (55%) due to Kidney disease and Renal failure than Wairarapa Maori males (45%) during the year 2000 to 2006 period. The highest number of hospitalisations occurred in the 40-44 year age group for both genders.



#### Maori Children Aged 0-14 Years

During the period year 2000 to 2006 there were 14 hospitalisations of Maori children due to Kidney Disease and Renal Failure. The majority of these hospitalisations were for Wairarapa Maori males in the age group.

#### Top five Kidney Disease and Renal Failure hospitalisations

| International Classification of Disease (ICD10) Chapter                | Wairarapa Maori         |          |          |
|--|-------------------------|----------|----------|
|  | No. of Hospitalisations | Female   | Male     |
| N04 - Nephrotic syndrome   | 3                       | 0        | 3        |
| N12 - Tubulo-interstitial nephritis, not specified as acute or chronic | 3                       | 3        | 0        |
| N00 - Acute nephritic syndrome   | 2                       | 0        | 2        |
| N05 - Unspecified nephritic syndrome                                   | 2                       | 0        | 2        |
| N17 - Acute renal failure  | 2                       | 0        | 2        |
| Other Kidney Disease and Renal Failures                                | 2                       | 2        | 0        |
| <b>Total</b>   | <b>14</b>               | <b>5</b> | <b>9</b> |

### Maori Youth Aged 15-24 Years

During the period year 2000 to 2006 there were more hospitalisations of Wairarapa Maori hospitalisations in this age group due to Kidney Disease and Renal Failure than in the 0-14 age group. All of these affected Wairarapa Maori females only, with the leading cause was Interstitial nephritis (ICD N-12) accounting for 56% of these hospitalisations. Interstitial nephritis is the inflammation of the interior spaces of the kidneys.

#### Top five Kidney Disease and Renal Failure hospitalisations

| International Classification of Disease (ICD10) Chapter                | Wairarapa Maori         |           |          |
|--|-------------------------|-----------|----------|
|  | No. of Hospitalisations | Female    | Male     |
| N12 - Tubulo-interstitial nephritis, not specified as acute or chronic | 14                      | 14        | 0        |
| N10 - Acute tubulo-interstitial nephritis                              | 6                       | 6         | 0        |
| N20 - Calculus of kidney and ureter                                    | 2                       | 2         | 0        |
| N00 - Acute nephritic syndrome   | 1                       | 1         | 0        |
| N13 - Obstructive and reflux uropathy                                  | 1                       | 1         | 0        |
| Other Kidney Disease and Renal Failures                                | 1                       | 1         | 0        |
| <b>Total</b>   | <b>25</b>               | <b>25</b> | <b>0</b> |

### Maori Adults Aged 25-44 Years

During the period year 2000 to 2006 there were 52 hospitalisations of Wairarapa Maori due to Genitourinary system diseases in this age group. The main cause for these hospitalisations was due to Calculus of kidney and ureter (ICD N-20). This is also known as Kidney stones which are solid masses that form in the kidneys.

The second most common reason for hospitalisations affecting Wairarapa Maori females only in this age group was Interstitial nephritis (ICD N-12). Combined, these two conditions account for 58% of the total for this age group.

#### Top five Kidney Disease and Renal Failure hospitalisations

| International Classification of Disease (ICD10) Chapter                | Wairarapa Maori         |           |           |
|--|-------------------------|-----------|-----------|
|  | No. of Hospitalisations | Female    | Male      |
| N20 - Calculus of kidney and ureter                                    | 20                      | 8         | 12        |
| N12 - Tubulo-interstitial nephritis, not specified as acute or chronic | 10                      | 10        | 0         |
| N23 - Unspecified renal colic  | 6                       | 1         | 5         |
| N05 - Unspecified nephritic syndrome                                   | 5                       | 0         | 5         |
| N10 - Acute tubulo-interstitial nephritis                              | 3                       | 3         | 0         |
| Other Kidney Disease and Renal Failures                                | 8                       | 7         | 1         |
| <b>Total</b>   | <b>52</b>               | <b>29</b> | <b>23</b> |

### Maori Adults Aged 45-64 Years

During the period year 2000 to 2006 there were 492 hospitalisations of Wairarapa Maori due to Genitourinary system diseases in this age group. Overall, Wairarapa Maori male were affected almost twice as much as Wairarapa Maori females. The main cause for these hospitalisations was due to Calculus of kidney and ureter (ICD N-20).

#### Top five Kidney Disease and Renal Failure hospitalisations

| International Classification of Disease (ICD10) Chapter                | Wairarapa Maori         |           |           |
|--|-------------------------|-----------|-----------|
|  | No. of Hospitalisations | Female    | Male      |
| N20 - Calculus of kidney and ureter                                    | 18                      | 5         | 13        |
| N18 - Chronic renal failure  | 9                       | 3         | 6         |
| N23 - Unspecified renal colic  | 9                       | 3         | 6         |
| N17 - Acute renal failure  | 4                       | 2         | 2         |
| N12 - Tubulo-interstitial nephritis, not specified as acute or chronic | 3                       | 3         | 0         |
| Other Kidney Disease and Renal Failures                                | 6                       | 1         | 5         |
| <b>Total</b>   | <b>49</b>               | <b>17</b> | <b>32</b> |

### Older Maori People Aged 65 + Years

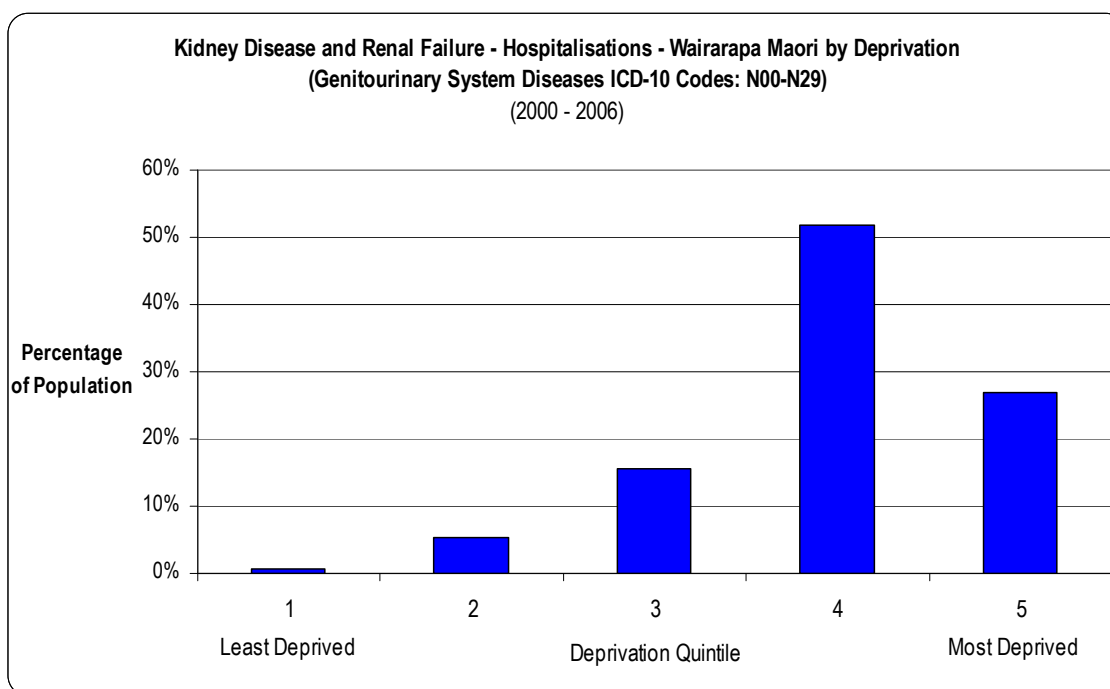
Between the year 2000 and 2006 there were a total of 28 hospitalisations for Maori in the Wairarapa due to Kidney Disease and Renal Failure in this age group. The top five causes accounted for 86% of the hospitalisations for Wairarapa Maori males and females combined in this age group.

#### Top five Kidney Disease and Renal Failure hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |           |           |
|---|-------------------------|-----------|-----------|
|   | No. of Hospitalisations | Female    | Male      |
| N20 - Calculus of kidney and ureter                     | 13                      | 8         | 5         |
| N18 - Chronic renal failure                             | 4                       | 1         | 3         |
| N04 - Nephrotic syndrome                                | 3                       | 3         | 0         |
| N17 - Acute renal failure                               | 3                       | 2         | 1         |
| N05 - Unspecified nephritic syndrome                    | 1                       | 1         | 0         |
| Other Kidney Disease and Renal Failures                 | 4                       | 2         | 2         |
| <b>Total</b>  | <b>28</b>               | <b>17</b> | <b>11</b> |

### 6.3.3 Kidney Disease and Renal Failure Hospitalisations by Deprivation

The following graph shows the breakdown of Wairarapa Maori hospitalisations due to Kidney Disease and Renal Failures by deprivation level between the year 2000 and 2006. The highest percentage of hospitalisations was for Wairarapa Maori in Quintile 4 at 52%.



### 6.3.4 Kidney Disease and Renal Failure Mortality

Between 1994 and 2004 there were 4 deaths of Wairarapa Maori due to Kidney Disease and Renal Failure.

The following table shows the breakdown by age and gender.

| International Classification of Disease (ICD10) Chapter                | Aged 25-44 |          | Aged 65+ |          |
|--|------------|----------|----------|----------|
|  | Female     | Male     | Female   | Male     |
| N03 - Chronic nephritic syndrome                                       | 1          | 0        | 0        | 0        |
| N12 - Tubulo-interstitial nephritis, not specified as acute or chronic | 1          | 0        | 0        | 0        |
| N17 - Acute renal failure  | 1          | 0        | 0        | 0        |
| N18 - Chronic renal failure  | 0          | 0        | 0        | 1        |
| <b>Total</b>   | <b>3</b>   | <b>0</b> | <b>0</b> | <b>1</b> |

## 6.4 Respiratory Disease

Respiratory Diseases are major causes of death for all ethnic groups in New Zealand. In the Wairarapa Respiratory diseases were the 4<sup>th</sup> leading cause of death for Wairarapa Maori between 1994 and 2004.

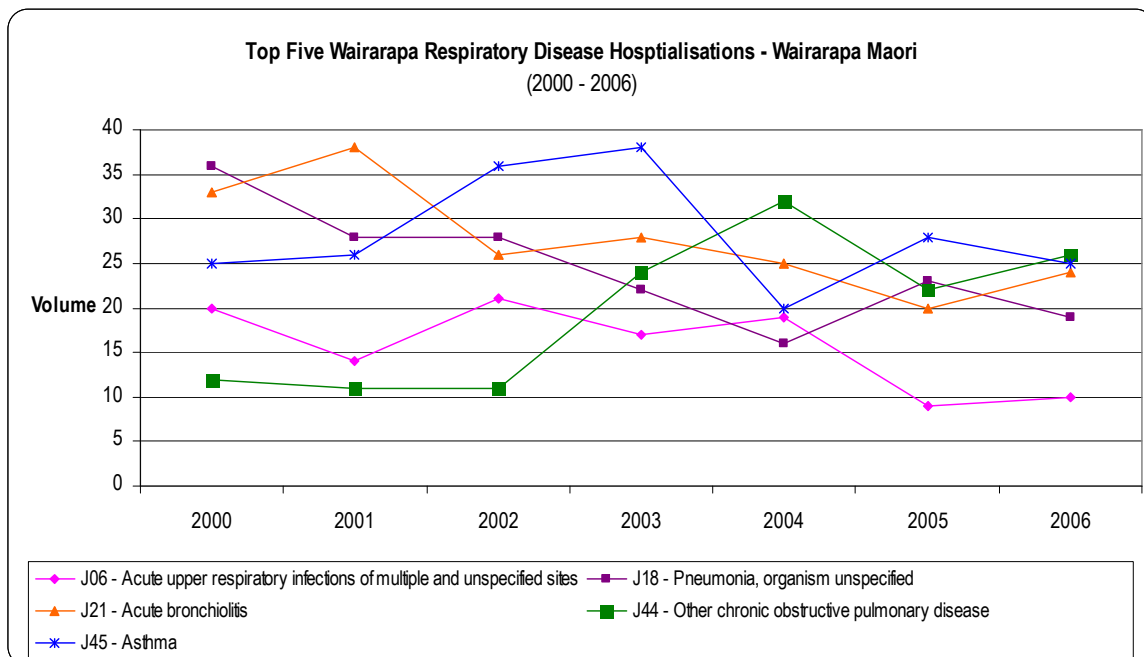
### 6.4.1 Respiratory Disease Hospitalisations

The following table shows the percentage of Respiratory disease hospitalisations comparing Wairarapa Maori and New Zealand Maori between the year 2000 and 2006. Overall, the percentage of hospitalisations are similar, with Wairarapa Maori having a slightly higher hospitalisation percentage for Acute bronchiolitis.

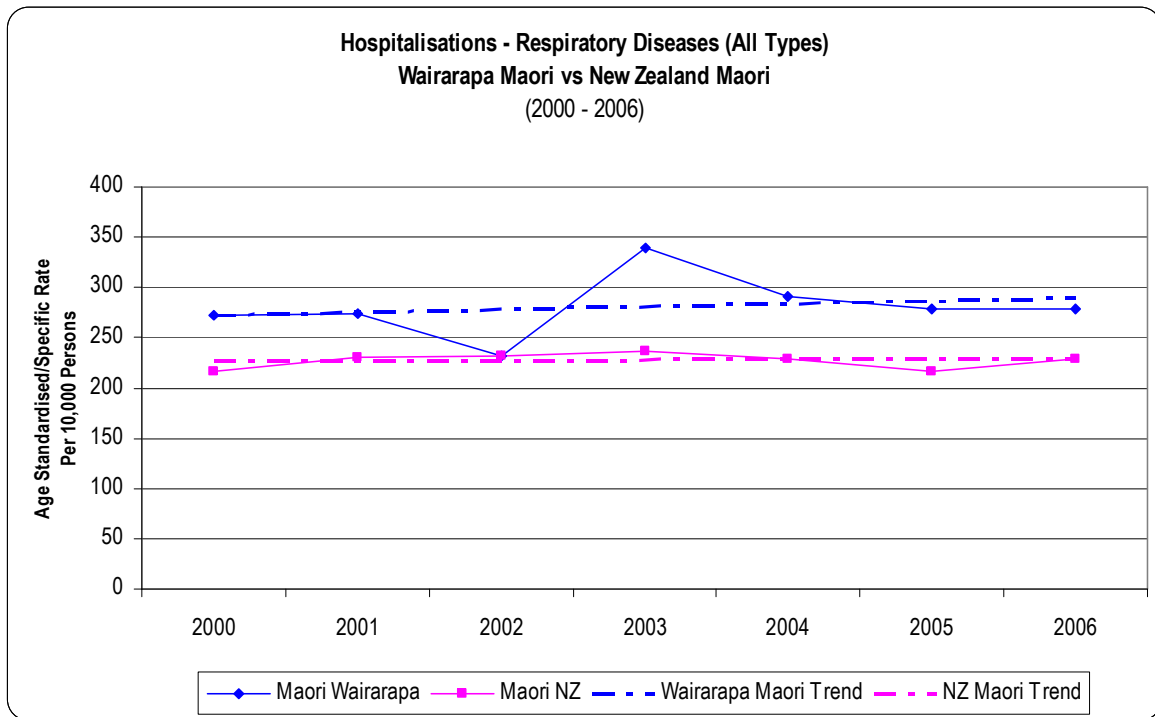
#### Top Five Hospitalisations

| International Classification of Disease (ICD10) Chapter                    | Maori            |             |               |
|--|------------------|-------------|---------------|
|  | Wairarapa Number | Wairarapa % | New Zealand % |
| J45 - Asthma   | 198              | 17%         | 18%           |
| J21 - Acute bronchiolitis  | 194              | 17%         | 15%           |
| J18 - Pneumonia, organism unspecified                                      | 172              | 15%         | 15%           |
| J44 - Other chronic obstructive pulmonary disease                          | 138              | 12%         | 11%           |
| J06 - Acute upper respiratory infections of multiple and unspecified sites | 110              | 9%          | 8%            |
| Other Circulatory System Diseases  | 347              | 30%         | 33%           |
| <b>Total</b>   | <b>1,159</b>     | <b>100%</b> | <b>100%</b>   |

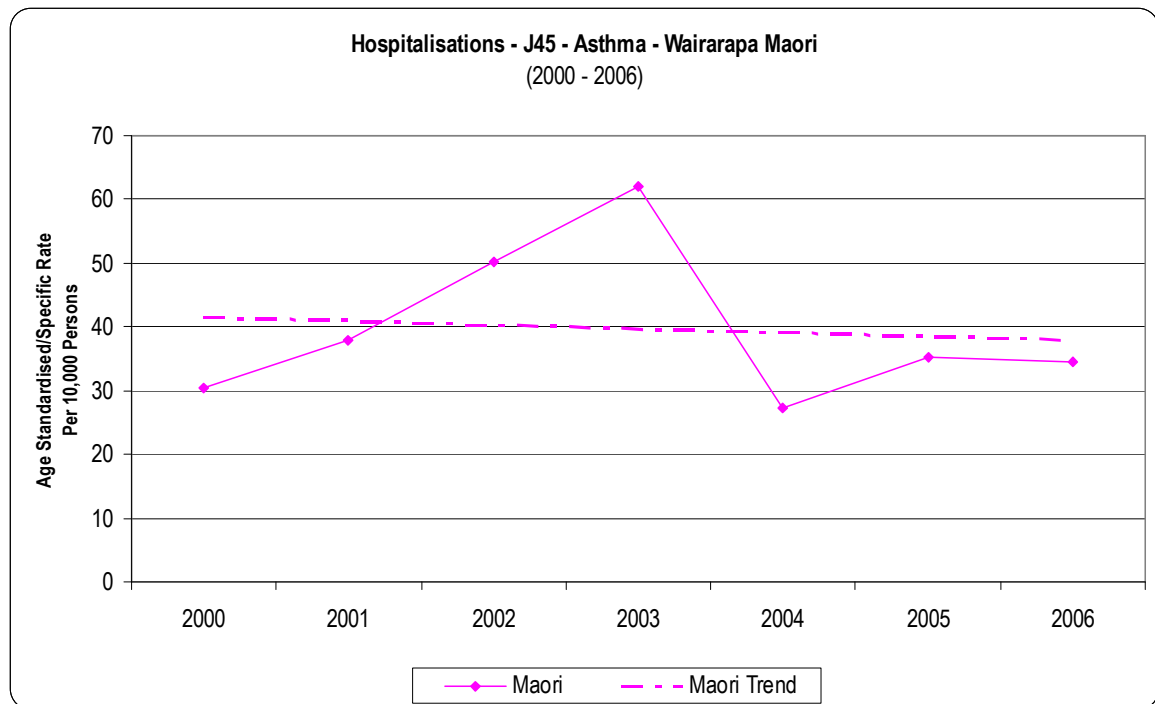
The following graph shows the top five causes of hospitalisations of Wairarapa Maori due to Respiratory Disease by volume between the year 2000 and 2006. Combined, these account for 70% of Respiratory disease hospitalisations for Wairarapa Maori during this period. The trend for Other Chronic Obstructive Pulmonary Disease (COPD) shows an increase during this period, while the others making up this top five are trending to decreases in hospitalisations.



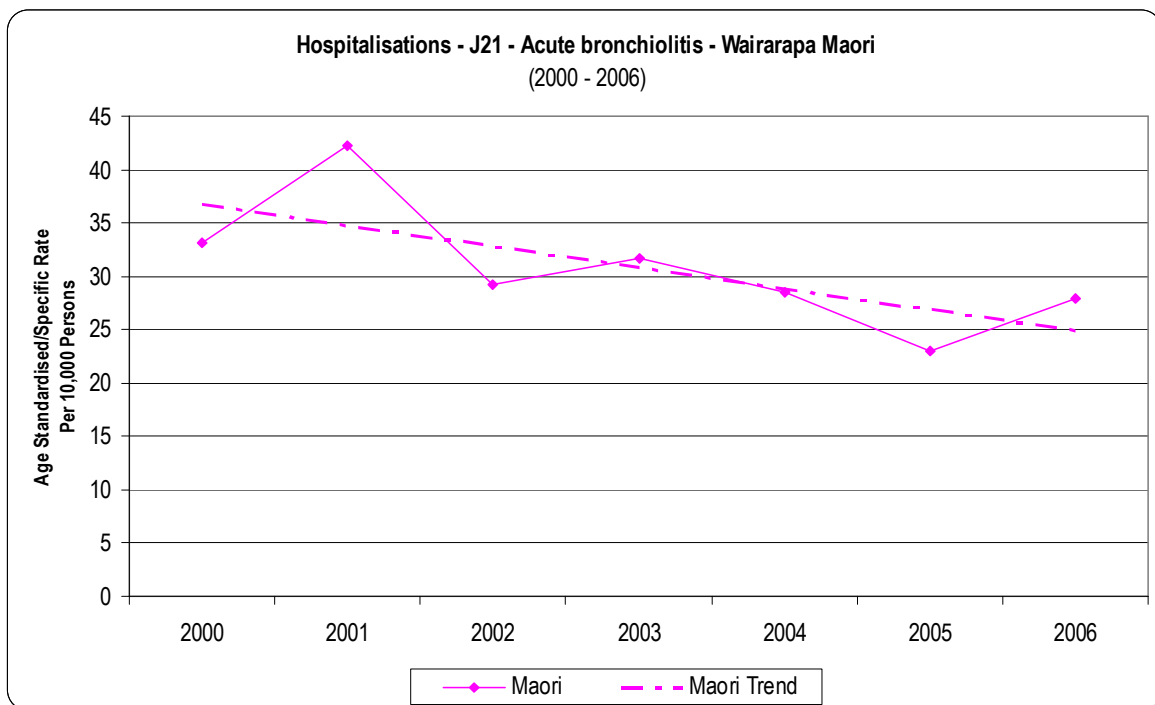
Between 2000 and 2006, there were 1,159 hospitalisations of Wairarapa Maori due to respiratory diseases. The following graph shows the age standardised Wairarapa Maori hospitalisation rates due to Respiratory diseases (all types) comparing the Wairarapa Maori with New Zealand Maori. Both Wairarapa and New Zealand Maori have seen a slight increase in the trend, with the Wairarapa Maori rates above New Zealand Maori rates.



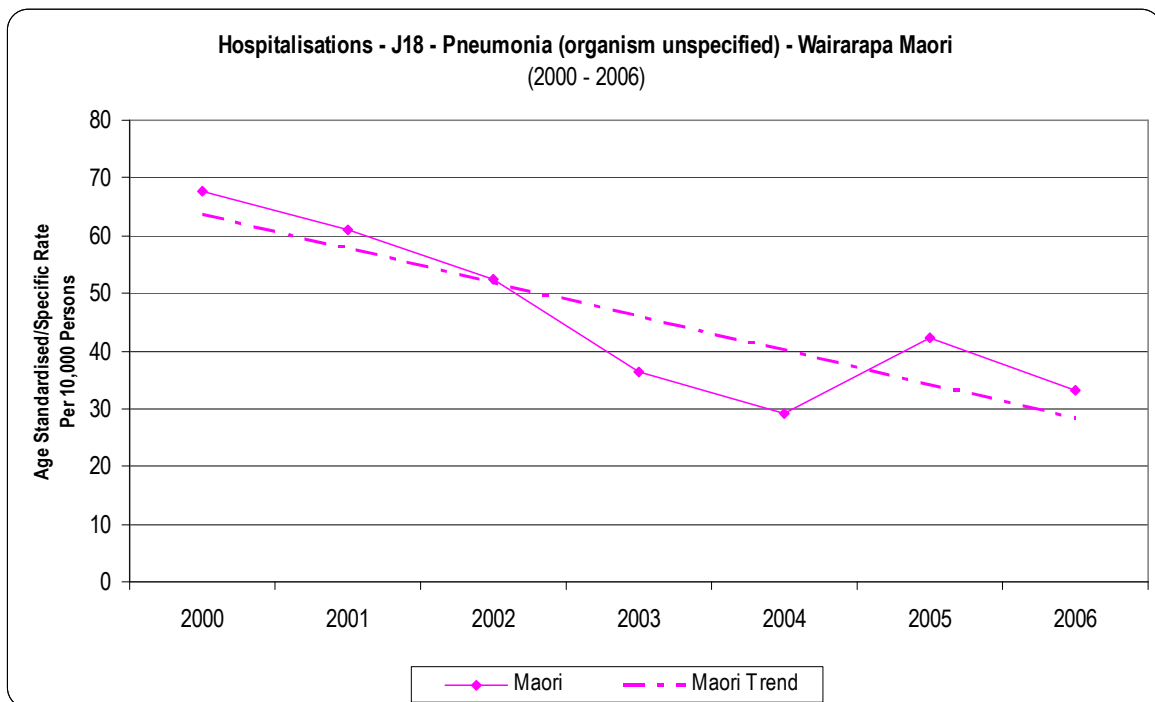
The following graph shows the age standardised rates of hospitalisations due to Asthma for Wairarapa Maori, between the year 2000 and 2006. The trend in rates for Maori shows very little change during this period.



The following graph shows the age standardised rates of hospitalisations due to Acute bronchiolitis for Wairarapa Maori, between the year 2000 and 2006. During this period hospitalisations have decreased for Maori.

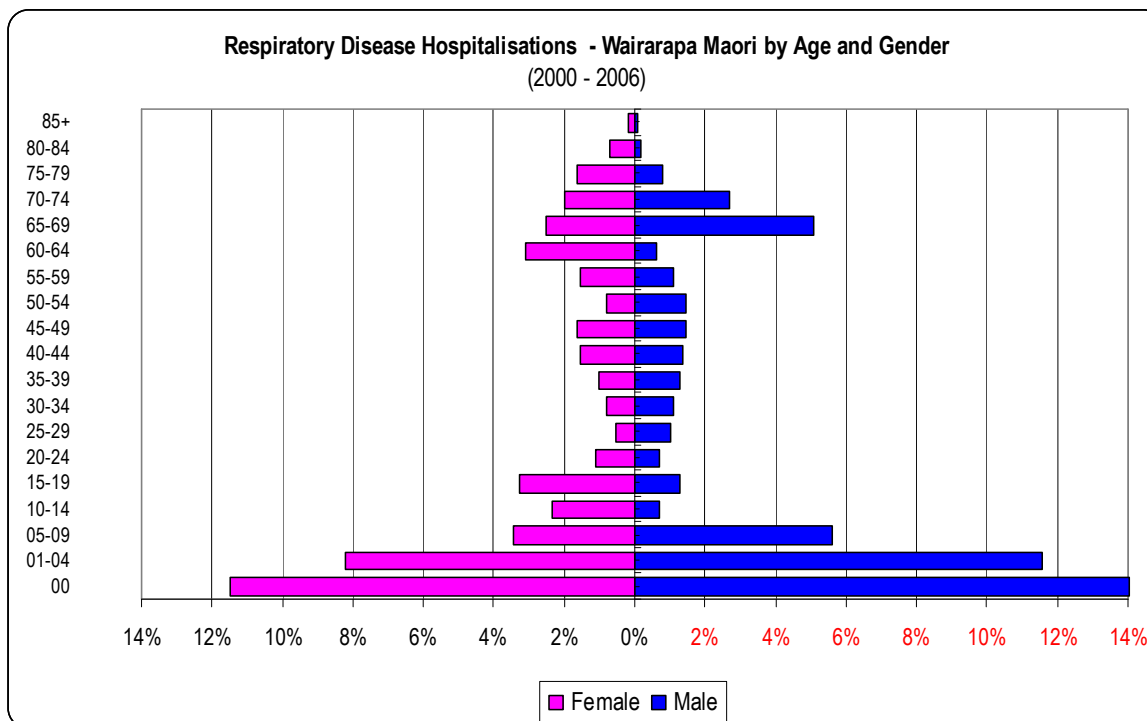


The following graph shows the age standardised rates of hospitalisations due to Pneumonia for Wairarapa Maori, between the year 2000 and 2006. The trend in rates shows a significant decrease for Maori during this period.



## 6.4.2 Respiratory Disease Hospitalisations – by Age Group and Gender

The following graph shows that Maori children (both genders) up to the age of 10 years of age have more hospitalisations due to Respiratory disease, accounting for 57% of the total. This decreases significantly from then and peaks again in the 65-69 age band. Overall, the split between Maori males and females is fairly similar, with 48% of respiratory disease hospitalisations being for females, and 52% for males.



### Maori Children Aged 0-14 Years

During the period year 2000 to 2006 there were 665 hospitalisations of Maori children due to respiratory disease. The main cause for these hospitalisations was due to Acute bronchiolitis (ICD J-21) and affected more males than females. Bronchiolitis is inflammation of the bronchioles, the smallest air passages of the lungs.

The second most common reason for hospitalisations also affecting more males than females in this age group was Asthma (ICD J-45). Asthma is a chronic illness involving the respiratory system in which the airway occasionally constricts, becomes inflamed, and is lined with excessive amounts of mucus, often in response to one or more triggers. Combined, the percentage of males who had hospitalisations due to these two conditions was 10% higher than for females.

### Top five respiratory disease hospitalisations

| International Classification of Disease (ICD10) Chapter                    | Wairarapa Maori         |            |            |
|--|-------------------------|------------|------------|
|  | No. of Hospitalisations | Female     | Male       |
| J21 - Acute bronchiolitis  | 194                     | 82         | 112        |
| J45 - Asthma   | 143                     | 55         | 88         |
| J06 - Acute upper respiratory infections of multiple and unspecified sites | 98                      | 48         | 50         |
| J18 - Pneumonia, organism unspecified                                      | 77                      | 34         | 43         |
| J35 - Chronic diseases of tonsils and adenoids                             | 47                      | 26         | 21         |
| Other Respiratory Diseases   | 106                     | 50         | 56         |
| <b>Total</b>   | <b>665</b>              | <b>295</b> | <b>370</b> |

### Maori Youth Aged 15-24 Years

During the period year 2000 to 2006 there were significantly fewer Maori hospitalisations due to respiratory disease in this age group than in the 0-14 age group. The main cause for these hospitalisations was due to Acute tonsillitis (ICD J-03) and affected more females than males. The second most common reason for hospitalisations in this age group was Pneumonia (ICD J-18) also affecting more females than males in this age group.

#### Top five respiratory disease hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |           |           |
|---|-------------------------|-----------|-----------|
|   | No. of Hospitalisations | Female    | Male      |
| J03 - Acute tonsillitis                                 | 12                      | 8         | 4         |
| J18 - Pneumonia, organism unspecified                   | 12                      | 8         | 4         |
| J45 - Asthma  | 11                      | 8         | 3         |
| J35 - Chronic diseases of tonsils and adenoids          | 9                       | 7         | 2         |
| J36 - Peritonsillar abscess                             | 6                       | 5         | 1         |
| Other Respiratory Diseases                              | 24                      | 15        | 9         |
| <b>Total</b>  | <b>74</b>               | <b>51</b> | <b>23</b> |

### Maori Adults Aged 25-44 Years

During the period year 2000 to 2006, the percentage for hospitalisations in this age group due to respiratory disease was 10% higher for Maori males than Maori females. The main two causes for these hospitalisations were Pneumonia (ICD J-18) and Asthma (ICD J-45) combined, affecting 14% more Maori males than females.

#### Top five respiratory disease hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |           |           |
|---|-------------------------|-----------|-----------|
|   | No. of Hospitalisations | Female    | Male      |
| J18 - Pneumonia, organism unspecified                   | 22                      | 6         | 16        |
| J45 - Asthma  | 18                      | 7         | 11        |
| J22 - Unspecified acute lower respiratory infection     | 8                       | 2         | 6         |
| J44 - Other chronic obstructive pulmonary disease       | 7                       | 0         | 7         |
| J93 - Pneumothorax                                      | 7                       | 7         | 0         |
| Other Respiratory Diseases                              | 39                      | 23        | 16        |
| <b>Total</b>  | <b>101</b>              | <b>45</b> | <b>56</b> |

### Maori Adults Aged 45-64 Years

During the period year 2000 to 2006, the percentage for hospitalisations in this age group due to respiratory disease was 20% higher for Maori females than Maori males. The main cause for these hospitalisations was due to Other Chronic Obstructive Pulmonary disease (COPD) (ICD J-44) with hospitalisations higher for Maori females. The second most common reason for hospitalisations in this age group was due to Pneumonia (ICD J-18) with hospitalisations higher for Maori males. Asthma (ICD J-45) hospitalisations were significantly higher for females than males within this age group.

#### Top five respiratory disease hospitalisations

| International Classification of Disease (ICD10) Chapter            | Wairarapa Maori         |           |           |
|--|-------------------------|-----------|-----------|
|  | No. of Hospitalisations | Female    | Male      |
| J44 - Other chronic obstructive pulmonary disease                  | 33                      | 20        | 13        |
| J18 - Pneumonia, organism unspecified                              | 32                      | 12        | 20        |
| J45 - Asthma   | 20                      | 17        | 3         |
| J93 - Pneumothorax   | 8                       | 8         | 0         |
| J38 - Diseases of vocal cords and larynx, not elsewhere classified | 5                       | 5         | 0         |
| Other Respiratory Diseases   | 38                      | 20        | 18        |
| <b>Total</b>   | <b>136</b>              | <b>82</b> | <b>54</b> |

## Older Maori People Aged 65 + Years

Between the year 2000 and 2006 there were a total of 183 hospitalisations for Maori in the Wairarapa due to respiratory disease in this age group. Overall, 44% of these were for females and 56% for males.

The top five causes accounted for 79% of the hospitalisations, Maori males and Maori females combined in this age group. These were:

- J44 - Other chronic obstructive pulmonary disease
- J18 - Pneumonia, organism unspecified
- J14 - Pneumonia due to Hemophilus influenzae
- J15 - Bacterial pneumonia, not elsewhere classified
- J22 - Unspecified acute lower respiratory infection

The following shows a breakdown for people aged 65 years and over. It is apparent that men are more likely to be hospitalised due to respiratory diseases when they are younger, and as people age the reverse occurs with women having more hospitalisations.

### Older Maori people Aged 65 - 74

#### Top five respiratory disease hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |           |           |
|---|-------------------------|-----------|-----------|
|   | No. of Hospitalisations | Female    | Male      |
| J44 - Other chronic obstructive pulmonary disease       | 85                      | 25        | 60        |
| J18 - Pneumonia, organism unspecified                   | 19                      | 11        | 8         |
| J45 - Asthma  | 5                       | 2         | 3         |
| J96 - Respiratory failure, not elsewhere classified     | 5                       | 2         | 3         |
| J15 - Bacterial pneumonia, not elsewhere classified     | 4                       | 2         | 2         |
| Other Respiratory Diseases                              | 24                      | 10        | 14        |
| <b>Total</b>  | <b>142</b>              | <b>52</b> | <b>90</b> |

### Older Maori people Aged 75 - 84

#### Top five respiratory disease hospitalisations

| International Classification of Disease (ICD10) Chapter                    | Wairarapa Maori         |           |           |
|--|-------------------------|-----------|-----------|
|  | No. of Hospitalisations | Female    | Male      |
| J44 - Other chronic obstructive pulmonary disease                          | 12                      | 9         | 3         |
| J18 - Pneumonia, organism unspecified                                      | 9                       | 6         | 3         |
| J14 - Pneumonia due to Hemophilus influenzae                               | 3                       | 1         | 2         |
| J20 - Acute bronchitis   | 3                       | 3         | 0         |
| J06 - Acute upper respiratory infections of multiple and unspecified sites | 2                       | 1         | 1         |
| Other Respiratory Diseases   | 9                       | 7         | 2         |
| <b>Total</b>   | <b>38</b>               | <b>27</b> | <b>11</b> |

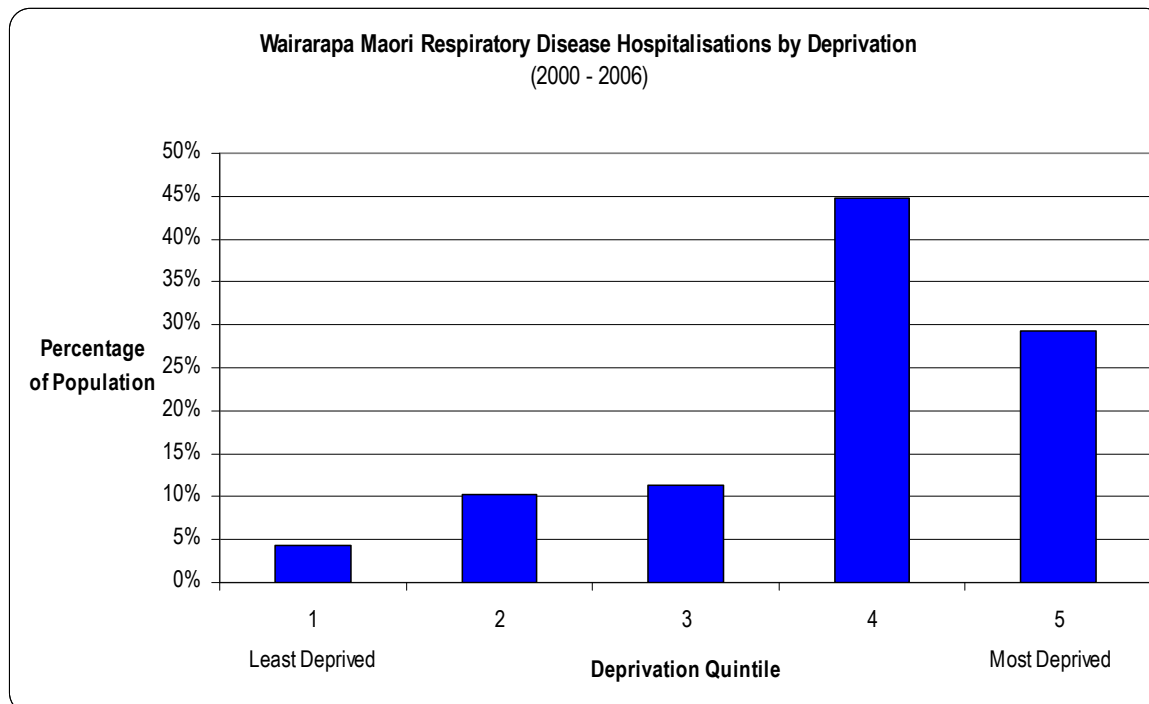
### Older Maori people Aged 85 +

During the period year 2000 to 2006 there were 3 hospitalisations due to respiratory diseases for Wairarapa Maori, 2 females and 1 male, aged 85 years and over. These hospitalisations were due to:

- J18 - Pneumonia, organism unspecified
- J22 - Unspecified acute lower respiratory infection
- J44 - Other chronic obstructive pulmonary disease

### 6.4.3 Respiratory Disease Hospitalisations by Deprivation

The following graph shows the breakdown of Wairarapa Maori hospitalisations due to respiratory diseases by deprivation level between the year 2000 and 2006. The highest percentage of hospitalisations was for Wairarapa Maori in Quintile 4 at 45%.



### 6.4.4 Respiratory Disease Mortality

Between 1994 and 2004 there were 23 Wairarapa Maori deaths due to Respiratory diseases.

The causes were:

- J44 - Other chronic obstructive pulmonary disease
- J45 - Asthma
- J84 - Other interstitial pulmonary diseases
- J12 - Viral pneumonia, not elsewhere classified
- J15 - Bacterial pneumonia, not elsewhere classified

The age standardised mortality rates trend due to respiratory diseases (all types) for Wairarapa Maori shows no change during this period.

Among all types of Respiratory diseases, the cause that resulted in the highest numbers of deaths for Wairarapa Maori was Other chronic obstructive pulmonary disease - COPD (J-44).

### 6.4.5 Respiratory Disease Mortality - by Age Group and Gender

Overall, 57% of the respiratory disease mortality was for Maori females, with 43% for Maori males.

#### Wairarapa Maori Aged 0 – 64 Years

Between 1994 and 2004 there were a total of 9 deaths of Wairarapa Maori, 3 females and 6 males, due to respiratory disease in this age group.

#### Wairarapa Maori Aged 65 + Years

Within this age group there were 14 deaths of Wairarapa Maori, 10 females and 4 males.

## 7 CANCER

### Key Findings for the Wairarapa

- Cancer was the second leading cause of mortality among Wairarapa Maori, accounting for 30% of deaths (84) between 1994 and 2004. This is 4% higher than for New Zealand Maori overall.
- Wairarapa Maori cancer registration rates have increased, while the rate for New Zealand Maori has remained similar over the ten year period between 1994 and 2004.
- Among all malignant cancer registrations for Maori in the Wairarapa between 1994 and 2004, the most common was lung cancer, followed closely by breast cancer. Wairarapa Maori had a slightly higher registration for these two cancers than New Zealand Maori.
- Cancer hospitalisations rates have increased slightly for Wairarapa Maori and are above the New Zealand rate for Maori, but not significantly.
- It is evident that each ethnicity has different treatment requirements, eg: breast and lung cancer hospitalisations are higher for Maori, whereas neoplasms of the skin are higher for those of Other ethnicities.
- Breast cancer registrations are forecast to increase further over the next decade, as a result of the Breast Screen Aotearoa Programme. Maori women have higher breast cancer registration rates, compared to women of either Pacific or Other Ethnicities.
- Among all malignant cancer deaths of Wairarapa Maori between 1994 and 2004, the most common was due to lung cancer, followed by stomach cancer.
- Lung cancer has the highest mortality, followed by cancer of the colorectum and anus. Maori were affected more by lung cancer, whereas those of Other ethnicities were affected more by cancer of the colorectum and anus. This is similar to New Zealand overall.
- Mortality rates for Wairarapa Maori due to Colorectal cancer decreased significantly between 1994 and 2004.
- The top three cancers causing avoidable mortality for Wairarapa Maori are Lung cancer, stomach cancer and breast cancer.

### 7.1 Cancer Incidence

#### 7.1.1 Wairarapa Cancer Registrations versus Cancer Deaths

The following table compares Cancer Registrations and Deaths of Wairarapa Maori people between 1994 and 2004. Lung cancer (malignant neoplasm of bronchus and lung) was the most commonly registered cancer as well as the main cause of Wairarapa Maori cancer deaths (32%).

| International Classification of Disease (ICD10) Chapter | Wairarapa            |             |
|---|----------------------|-------------|
|   | No. of Registrations | %           |
| C34 - Malignant neoplasm of bronchus and lung           | 29                   | 22%         |
| C50 - Malignant neoplasm of breast                      | 25                   | 19%         |
| C61 - Malignant neoplasm of prostate                    | 12                   | 9%          |
| C16 - Malignant neoplasm of stomach                     | 6                    | 4%          |
| C18 - Malignant neoplasm of colon                       | 6                    | 4%          |
| Other Cancers   | 56                   | 42%         |
| <b>Total</b>  | <b>134</b>           | <b>100%</b> |

| International Classification of Disease (ICD10) Chapter | Wairarapa     |             |
|---|---------------|-------------|
|   | No. of Deaths | %           |
| C34 - Malignant neoplasm of bronchus and lung           | 27            | 32%         |
| C16 - Malignant neoplasm of stomach                     | 8             | 10%         |
| C50 - Malignant neoplasm of breast                      | 7             | 8%          |
| C61 - Malignant neoplasm of prostate                    | 6             | 7%          |
| C18 - 21 Malignant neoplasm of colorectum and anus      | 5             | 6%          |
| Other Cancers   | 31            | 37%         |
| <b>Total</b>  | <b>84</b>     | <b>100%</b> |

## 7.1.2 Cancer Registrations

There were a total of 173 registrations of both benign and malignant cancers for Wairarapa Maori between 1994 and 2004 in the Wairarapa. This percentage is not significantly different from New Zealand.

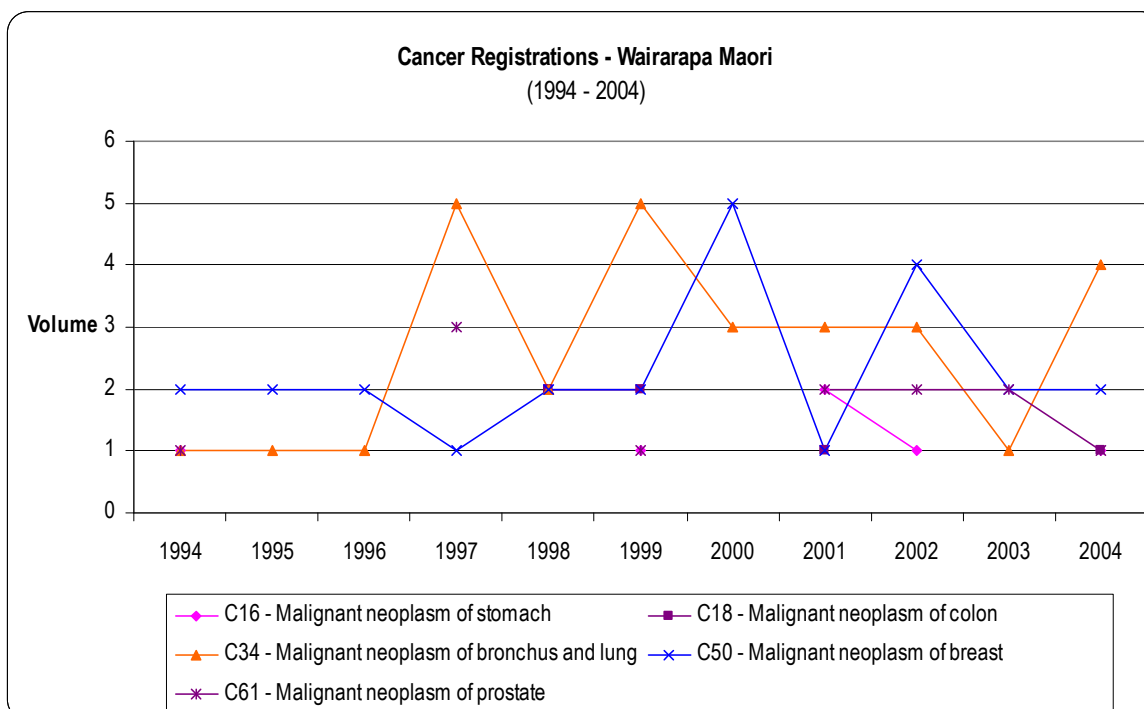
|                    | Wairarapa     |             | New Zealand |
|--------------------|---------------|-------------|-------------|
|                    | Registrations | %           | %           |
| Cancer - Benign    | 39            | 23%         | 22%         |
| Cancer - Malignant | 134           | 77%         | 78%         |
| <b>Total</b>       | <b>173</b>    | <b>100%</b> | <b>100%</b> |

Among all malignant cancer registrations for Maori in the Wairarapa between 1994 and 2004, the most common was lung cancer, followed closely by breast cancer. Wairarapa Maori had a slightly higher registration for these two cancers than New Zealand Maori.

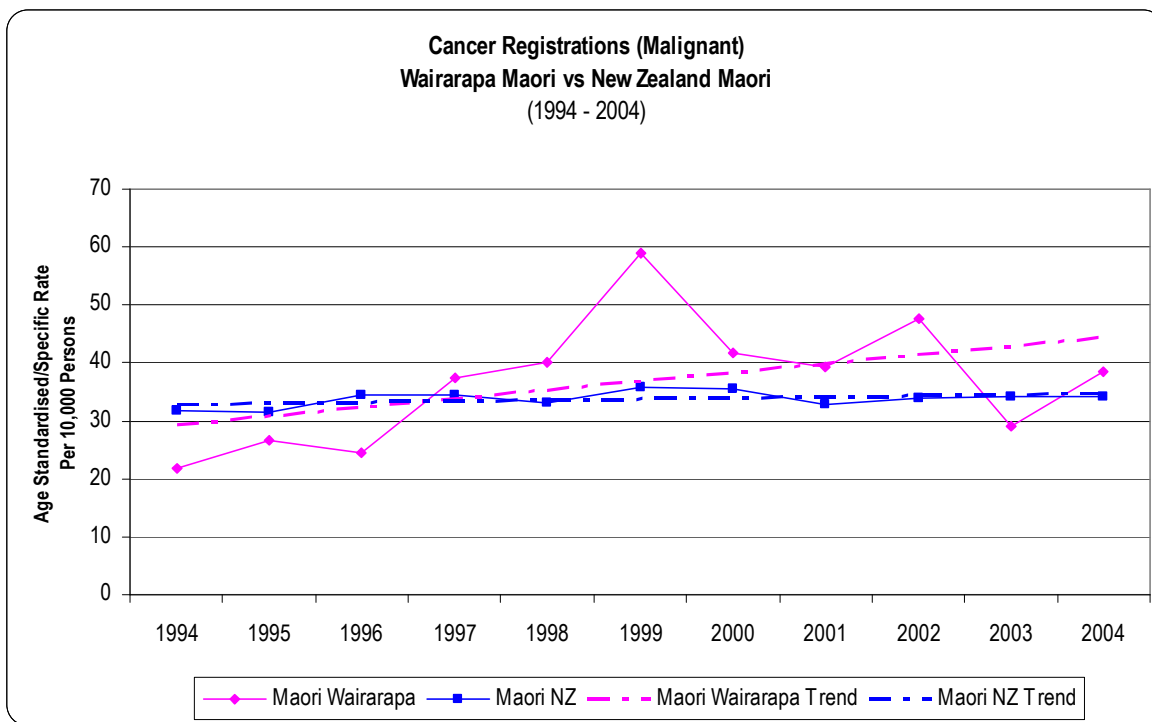
### Top Five Cancer Registrations

| International Classification of Disease (ICD10) Chapter | Maori            |             |               |
|---|------------------|-------------|---------------|
|   | Wairarapa Number | Wairarapa % | New Zealand % |
| C34 - Malignant neoplasm of bronchus and lung           | 29               | 22%         | 20%           |
| C50 - Malignant neoplasm of breast                      | 25               | 19%         | 16%           |
| C61 - Malignant neoplasm of prostate                    | 12               | 9%          | 8%            |
| C16 - Malignant neoplasm of stomach                     | 6                | 4%          | 5%            |
| C18 - Malignant neoplasm of colon                       | 6                | 4%          | 4%            |
| Other Cancers   | 56               | 42%         | 47%           |
| <b>Total</b>  | <b>134</b>       | <b>100%</b> | <b>100%</b>   |

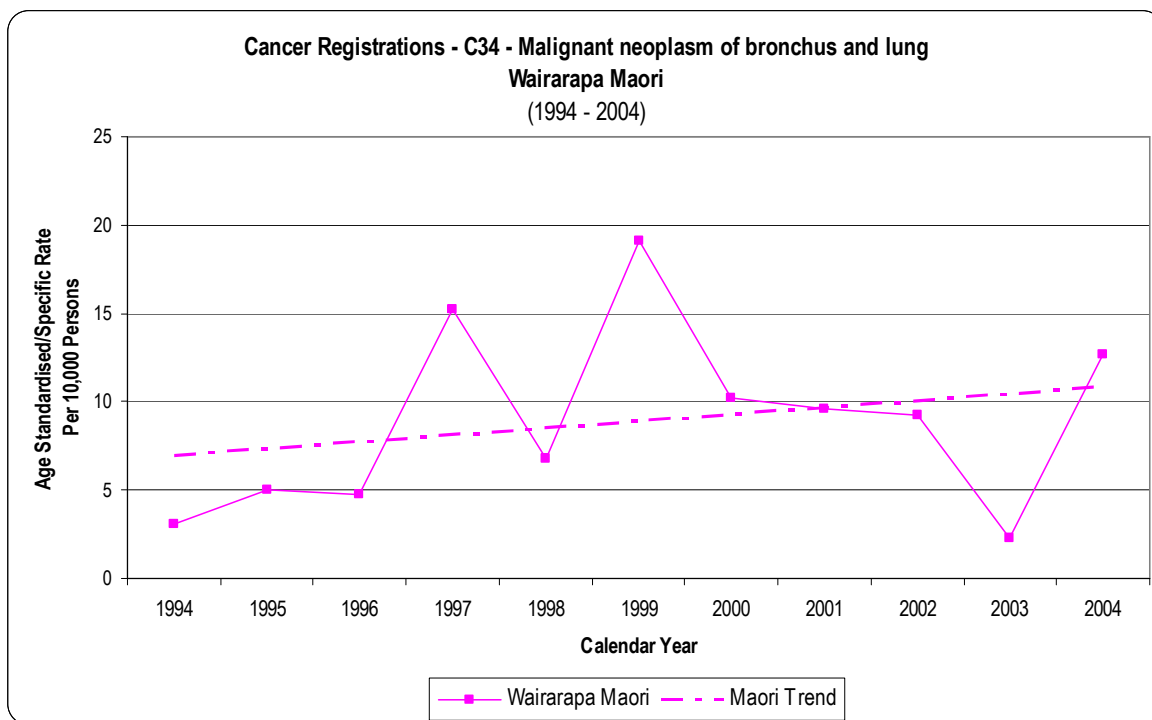
The following graph shows the top five malignant cancer registrations for Wairarapa Maori by volume between the 1994 and 2004. An increase in cancer registrations may be indicative of a higher identification rate rather than a higher incidence rate. Breast Screen Aotearoa is an example of an early detection programme.



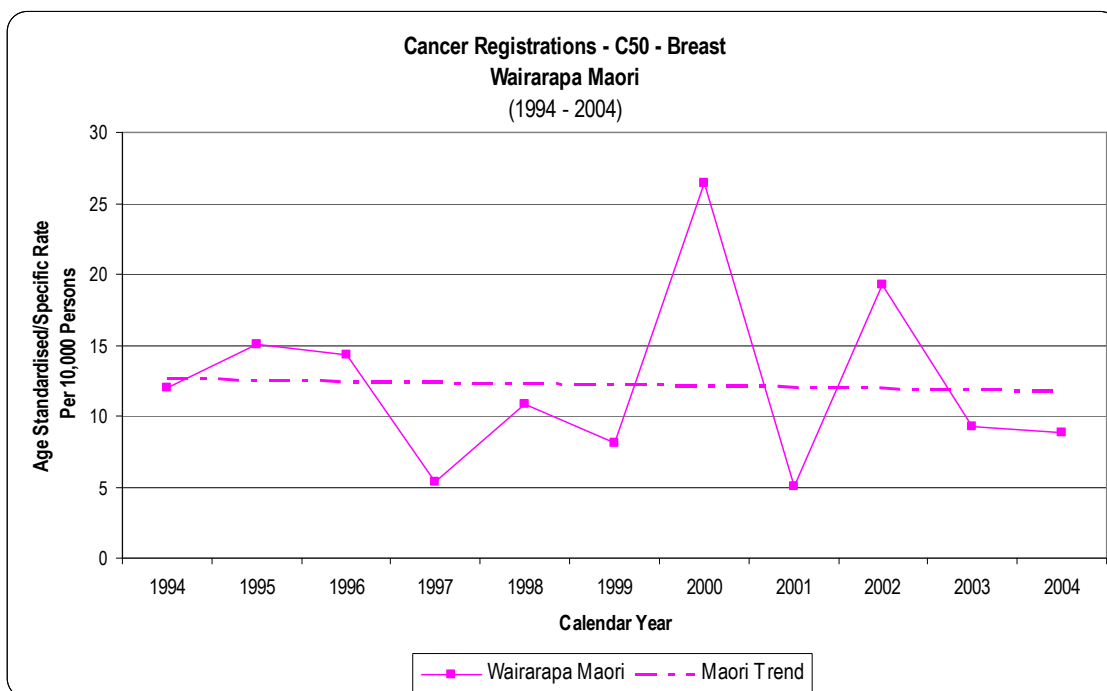
The following graph shows the age standardised cancer registration rate for Wairarapa Maori has increased, while the rate for New Zealand Maori has remained similar over the ten year period between 1994 and 2004.



The following graph shows the age standardised cancer registration rate for lung cancer, for Wairarapa Maori between 1994 and 2004. The trend shows a slight increase during this ten year period.



The following graph shows the age standardised cancer registration rate for breast cancer, for Wairarapa Maori between 1994 and 2004. Despite the peaks and troughs throughout this ten year period, the trend shows a very slight decrease.

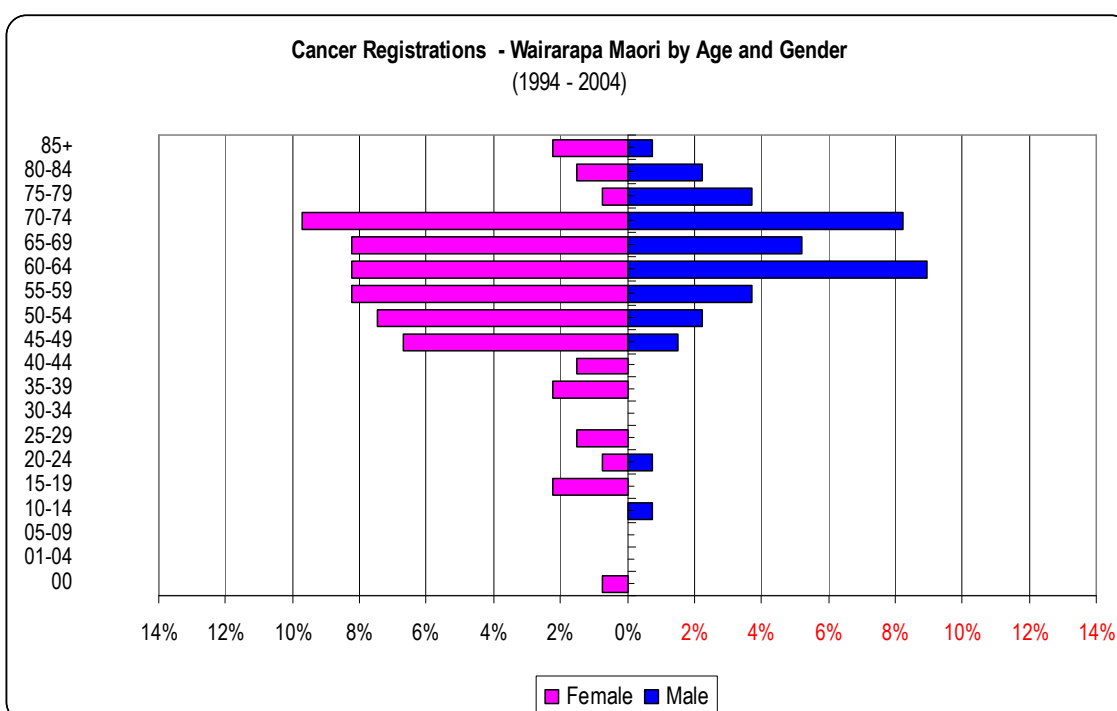


### 7.1.3 Cancer Registrations by Age Group and Gender

Of the 134 registrations of malignant cancers for Wairarapa Maori between 1994 and 2004, Maori females had a higher percentage than Maori males.

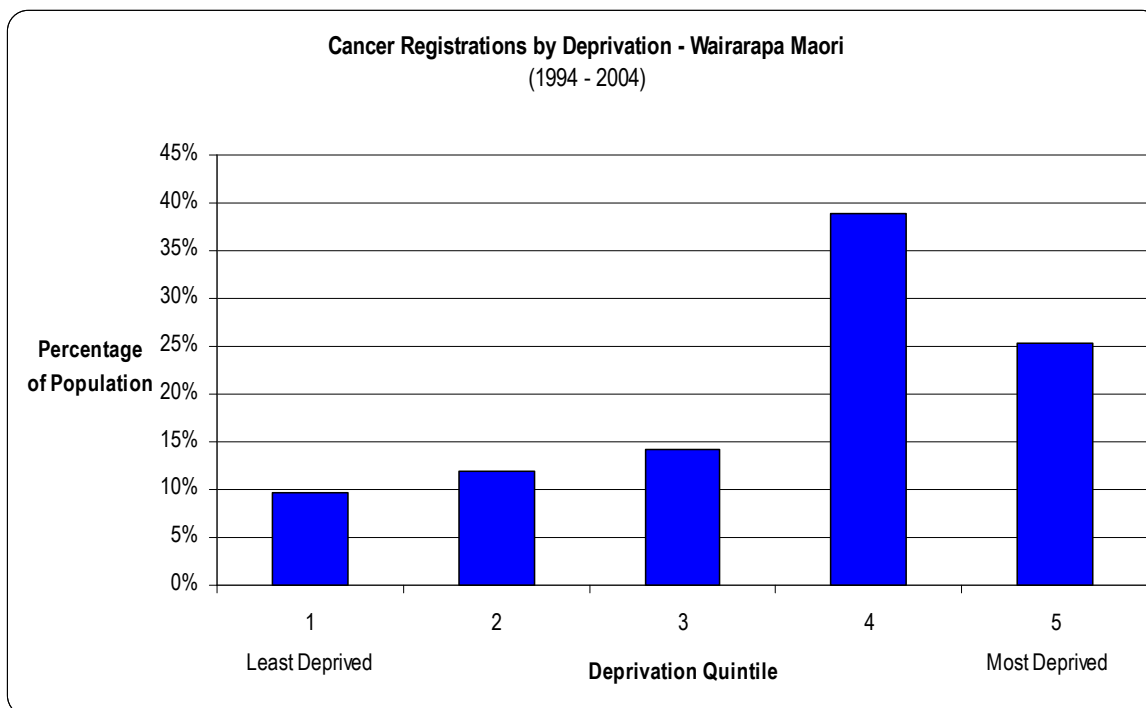
| Wairarapa Maori | No. of Registrations | %           |
|-----------------|----------------------|-------------|
| Females         | 83                   | 62%         |
| Males           | 51                   | 38%         |
| <b>Total</b>    | <b>134</b>           | <b>100%</b> |

Registrations of malignant cancers for Wairarapa Maori males generally happen at a later age than for Wairarapa Maori females, although they peak for males at the 60-64 year age band.



### 7.1.4 Cancer Registrations by Deprivation

The following graph shows the breakdown of malignant cancer registrations for Wairarapa Maori to the deprivation level between 1994 and 2004. The highest number of registrations was in Quintile 4 at 39%.



## 7.2 Cancer Treatment

Treatment of cancer is complex, involving a range of therapies. These include surgery, radiation, chemotherapy or hormonal therapy, or a combination of these. The aim of treatment is to cure (i.e.: to result in normal life expectancy), or to prolong and improve the quality of life of those with cancer (WHO 2002).

### 7.2.1 Cancer Hospitalisations

A total of 377 hospitalisations occurred in relation to both benign and malignant cancers for Wairarapa Maori between the year 2000 and 2006 in the Wairarapa. This is not significantly different from New Zealand.

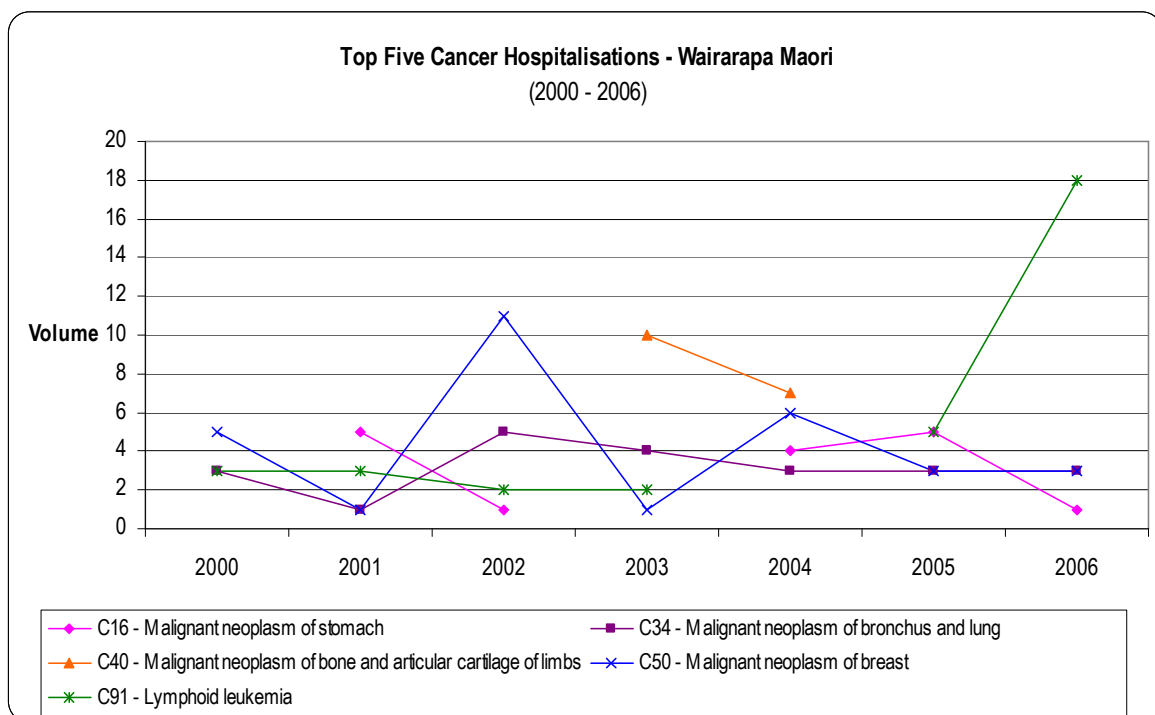
|                    | Wairarapa        |             | New Zealand |
|--------------------|------------------|-------------|-------------|
|                    | Hospitalisations | %           | %           |
| Cancer - Benign    | 120              | 32%         | 31%         |
| Cancer - Malignant | 257              | 68%         | 69%         |
| <b>Total</b>       | <b>377</b>       | <b>100%</b> | <b>100%</b> |

Among all malignant cancer hospitalisations of Wairarapa Maori between the year 2000 and 2006, the most common was Lymphoid leukaemia, followed closely by breast cancer. Wairarapa Maori had a higher hospitalisation percentage for these two cancers, compared to New Zealand Maori. These two cancers accounted for 25% of the cancer hospitalisations of Wairarapa Maori during this period.

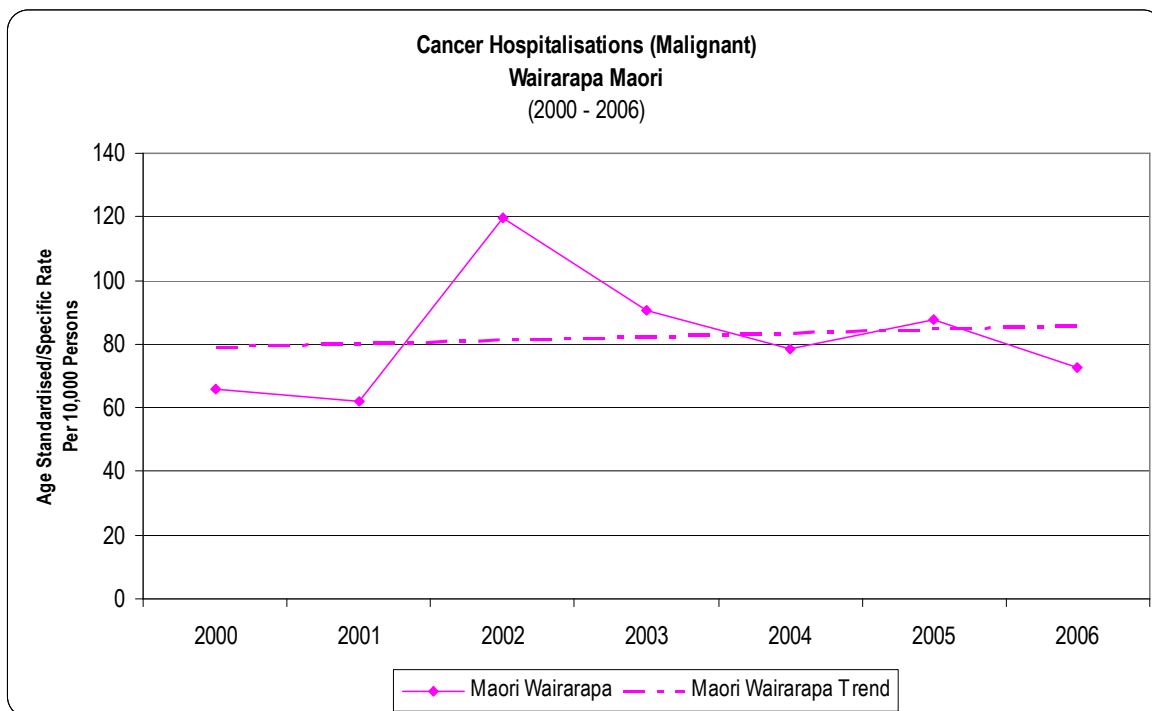
### Top Five Cancer Hospitalisations

| International Classification of Disease (ICD10) Chapter           | Maori            |             |               |
|---|------------------|-------------|---------------|
|   | Wairarapa Number | Wairarapa % | New Zealand % |
| C91 - Lymphoid leukaemia  | 33               | 13%         | 4%            |
| C50 - Malignant neoplasm of breast                                | 30               | 12%         | 9%            |
| C34 - Malignant neoplasm of bronchus and lung                     | 22               | 9%          | 13%           |
| C40 - Malignant neoplasm of bone and articular cartilage of limbs | 17               | 7%          | 1%            |
| C16 - Malignant neoplasm of stomach                               | 16               | 6%          | 4%            |
| Other Cancers   | 139              | 53%         | 69%           |
| <b>Total</b>  | <b>257</b>       | <b>100%</b> | <b>100%</b>   |

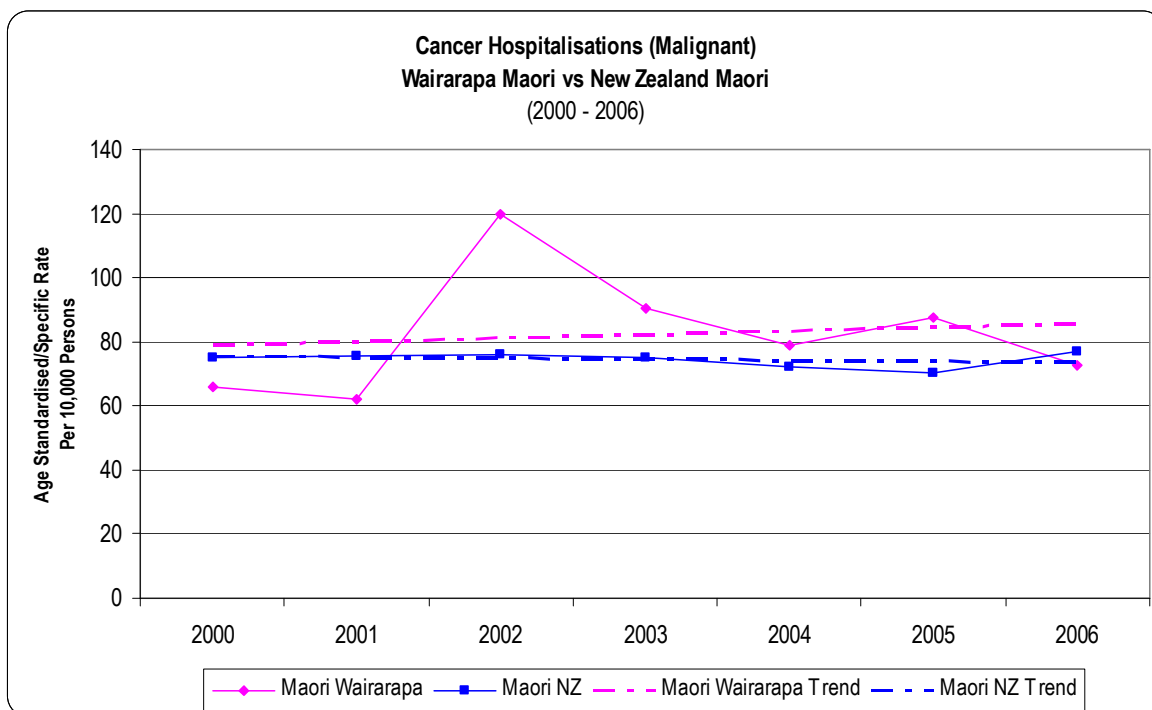
The following graph shows the top five malignant cancer hospitalisations for Wairarapa Maori by volume between the year 2000 and 2006. These top five account for 46% of the cancer hospitalisations during this period for Wairarapa Maori.



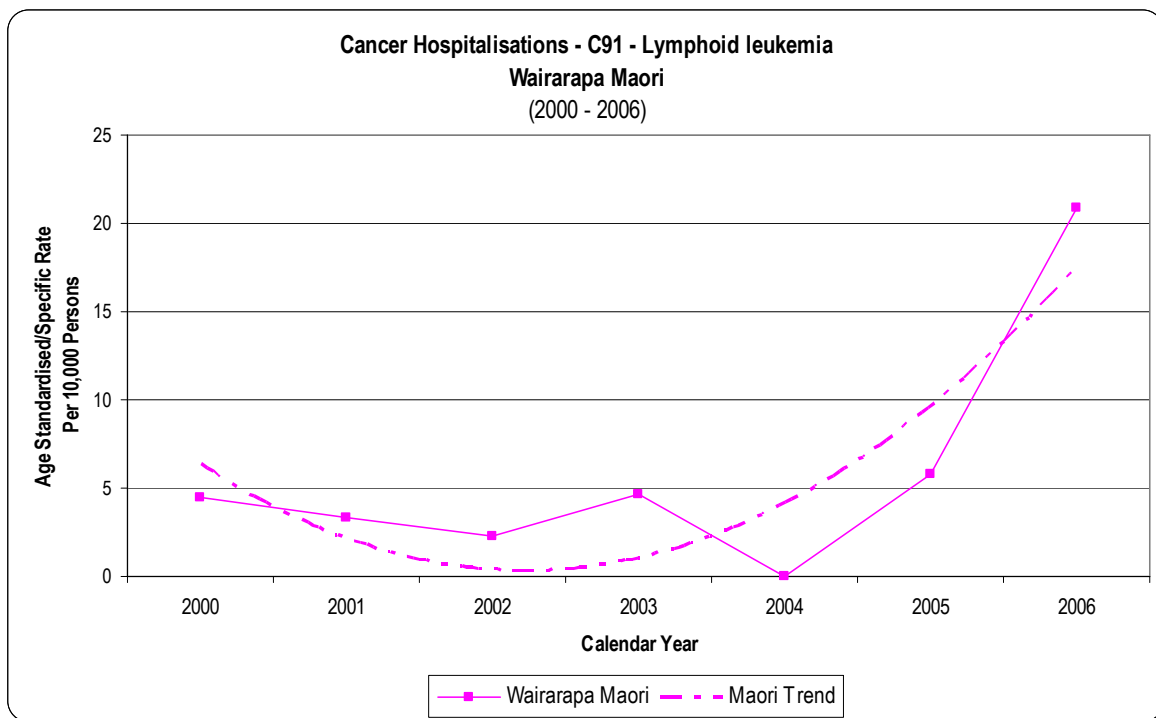
Between the year 2000 and 2006 there were 257 hospitalisations of Wairarapa Maori due to malignant cancers. There has been a very slight increase during this period.



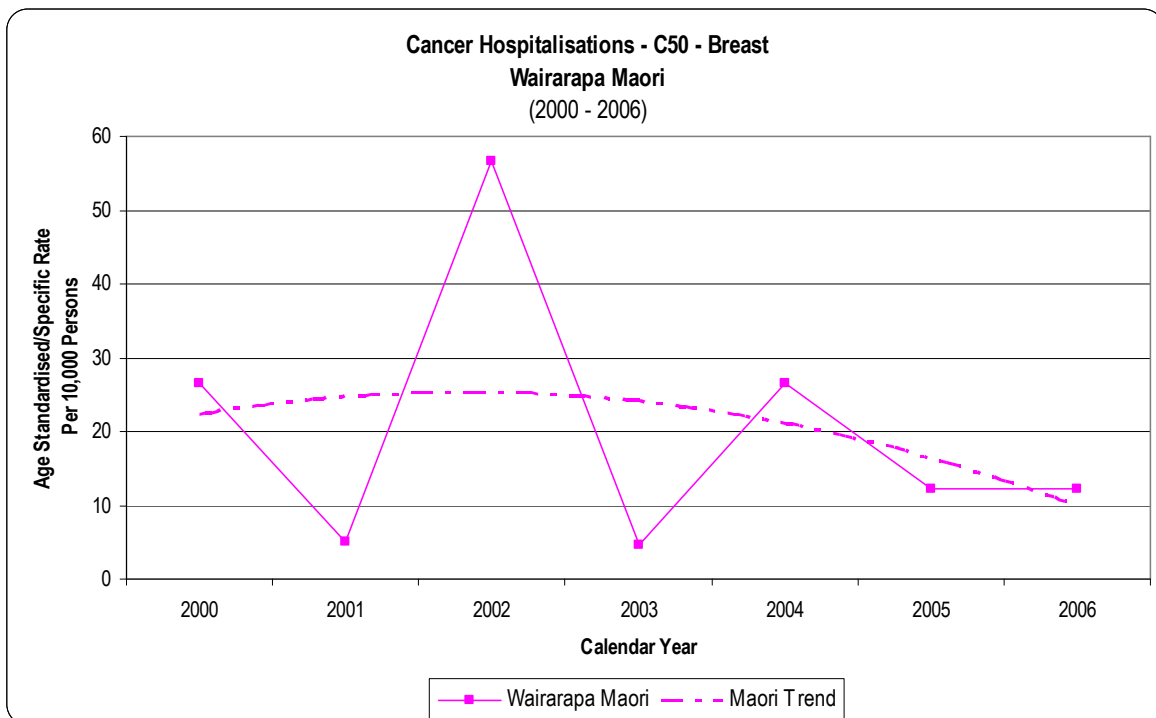
The following graph shows the age standardised cancer hospitalisation rate for Wairarapa Maori has increased and is above the New Zealand rate for Maori. The rate for New Zealand Maori has remained similar over the period between the year 2000 and 2006.



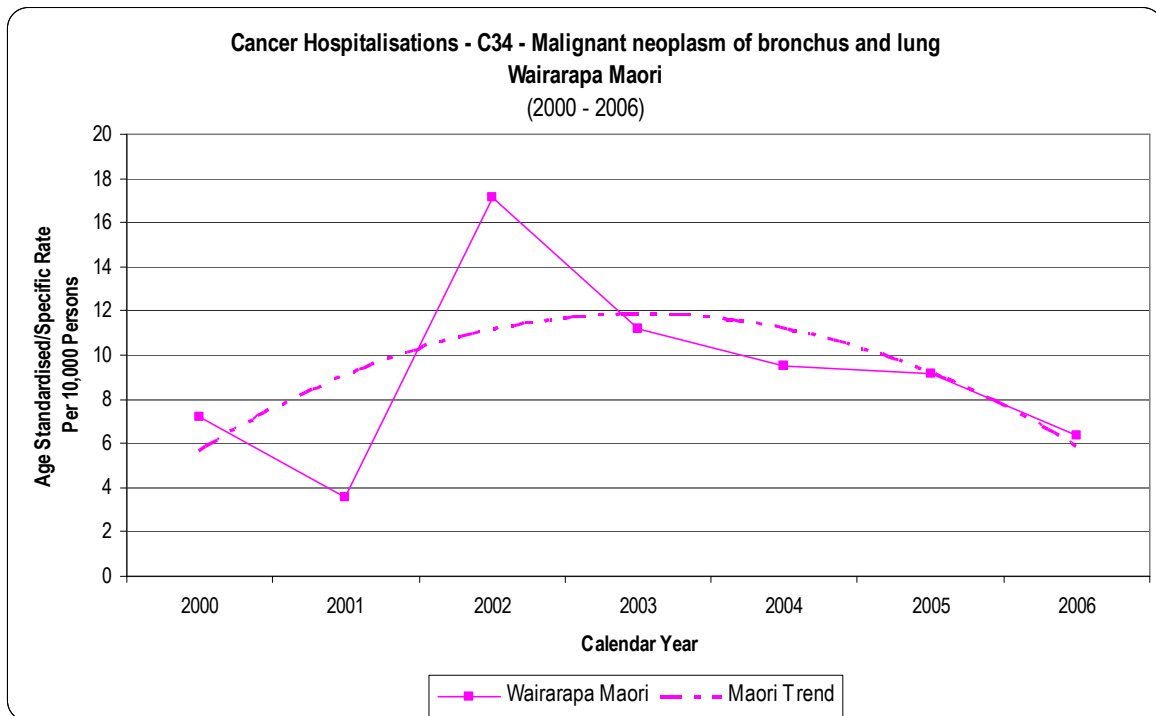
The following graph shows the age standardised hospitalisation rates for Wairarapa Maori due to Lymphoid Leukaemia, between the year 2000 and 2006. The trend shows a sharp increase between 2004 and 2006.



The following graph shows the age standardised hospitalisation rates due to Breast cancer for Wairarapa Maori, between the year 2000 and 2006. Despite the peaks and troughs, the overall trend shows a decrease in hospitalisations from 2002 onwards.

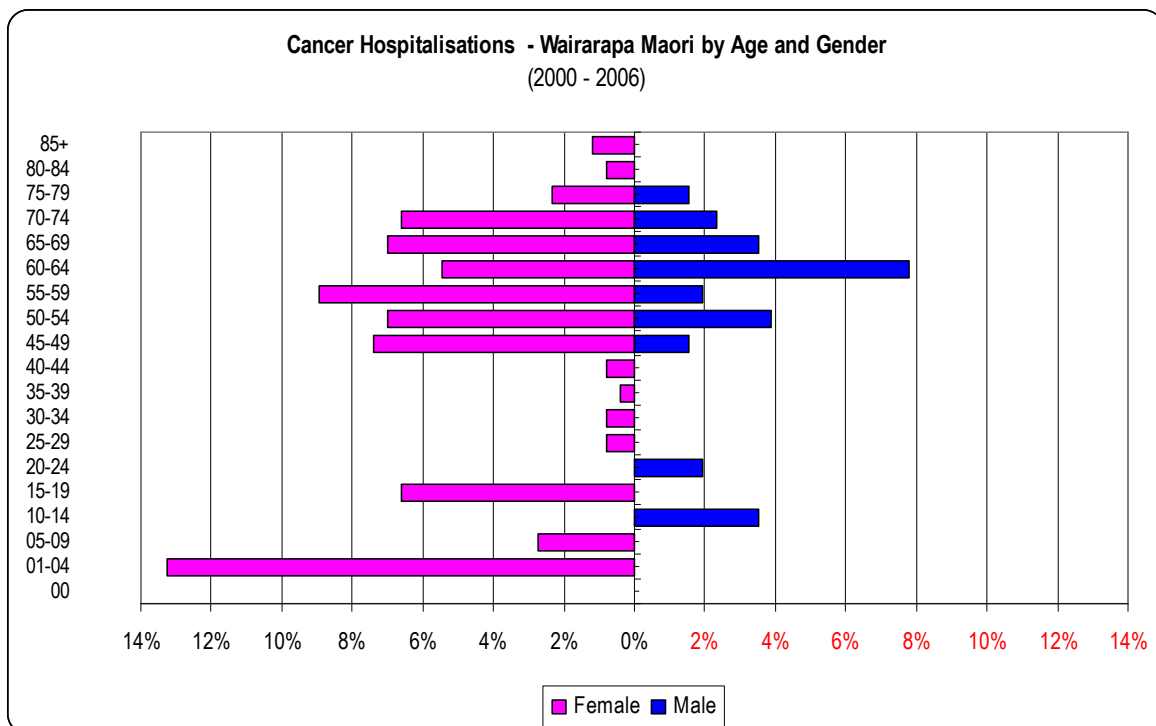


The following graph shows the age standardised hospitalisation rates due to lung cancer for Wairarapa Maori, between the year 2000 and 2006. Despite the peak in 2002, the overall trend shows rates in 2006 at a similar level to that of the year 2000.



### 7.2.2 Cancer Hospitalisations by Age Group and Gender

Hospitalisations due to malignant cancers occur earlier in life for Maori females, than they do for Maori males. Overall, 72% of the Wairarapa Maori malignant cancer hospitalisations are for Maori females.



### Maori Children Aged 0-14 Years

There were a total of 50 hospitalisations in relation to malignant cancer for Wairarapa Maori children aged 0-14 years between the year 2000 and 2006. Lymphoid leukaemia was the main reason for hospitalisations in relation to malignant cancers within this age group affecting only Maori females, and accounting for 56% of the total Maori hospitalisations within this age group.

#### Top five malignant cancer hospitalisations

| International Classification of Disease (ICD10) Chapter           | Wairarapa Maori         |           |          |
|---|-------------------------|-----------|----------|
|   | No. of Hospitalisations | Female    | Male     |
| C91 - Lymphoid leukaemia  | 28                      | 28        | 0        |
| C40 - Malignant neoplasm of bone and articular cartilage of limbs | 9                       | 0         | 9        |
| C76 - Malignant neoplasm of other and ill-defined sites           | 7                       | 7         | 0        |
| C74 - Malignant neoplasm of adrenal gland                         | 5                       | 5         | 0        |
| C79 - Secondary malignant neoplasm of other sites                 | 1                       | 1         | 0        |
| <b>Total</b>  | <b>50</b>               | <b>41</b> | <b>9</b> |

### Maori Youth Aged 15-24 Years

There were 22 hospitalisations of Wairarapa Maori Youth due to malignant cancers between the year 2000 and 2006. The following table shows the cancers that resulted in hospitalisations of Wairarapa Maori youth during this period.

#### Top five malignant cancer hospitalisations

| International Classification of Disease (ICD10) Chapter                 | Wairarapa Maori         |           |          |
|---|-------------------------|-----------|----------|
|   | No. of Hospitalisations | Female    | Male     |
| C40 - Malignant neoplasm of bone and articular cartilage of limbs       | 8                       | 8         | 0        |
| C57 - Malignant neoplasm of other and unspecified female genital organs | 5                       | 5         | 0        |
| C62 - Malignant neoplasm of testis                                      | 5                       | 0         | 5        |
| C84 - Peripheral and cutaneous T-cell lymphomas                         | 1                       | 1         | 0        |
| C91 - Lymphoid leukemia   | 3                       | 3         | 0        |
| <b>Total</b>  | <b>22</b>               | <b>17</b> | <b>5</b> |

### Maori Adults Aged 25-44 Years

There were 7 hospitalisations of Wairarapa Maori adults in this age group due to malignant cancers between the year 2000 and 2006. All of these were for Maori females. The following are the cancers that resulted in hospitalisations during this period.

- C50 - Malignant neoplasm of breast
- C53 - Malignant neoplasm of cervix uteri
- C55 - Malignant neoplasm of uterus, part unspecified
- C56 - Malignant neoplasm of ovary
- C78 - Secondary malignant neoplasm of respiratory and digestive organs
- C79 - Secondary malignant neoplasm of other sites

## Adults Aged 45-64 Years

Breast cancer was the main reason for cancer hospitalisations, affecting 23% of Maori females within this age group, while Maori males had more hospitalisations in relation to malignant neoplasms of the of pancreas.

### Top five malignant cancer hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |           |           |
|---|-------------------------|-----------|-----------|
|   | No. of Hospitalisations | Female    | Male      |
| C50 - Malignant neoplasm of breast                      | 26                      | 26        | 0         |
| C79 - Secondary malignant neoplasm of other sites       | 9                       | 7         | 2         |
| C25 - Malignant neoplasm of pancreas                    | 8                       | 1         | 7         |
| C34 - Malignant neoplasm of bronchus and lung           | 8                       | 5         | 3         |
| C56 - Malignant neoplasm of ovary                       | 8                       | 8         | 0         |
| Other cancers   | 54                      | 27        | 27        |
| <b>Total</b>  | <b>113</b>              | <b>74</b> | <b>39</b> |

## Older Maori People Aged 65 + years

There were a total of 65 cancer related hospitalisations within this age group of Wairarapa Maori between the year 2000 and 2006, 71% were for females and 29% for males. The main reason for cancer hospitalisations of Wairarapa Maori females was due to Lung cancer, while it was stomach cancer for Wairarapa Maori males. Combined, these two cancers accounted for 35% of the cancer hospitalisations for people aged 65 years +.

The following shows a breakdown for people aged 65 years and over.

### Older Maori People Aged 65-74

#### Top five malignant cancer hospitalisations

| International Classification of Disease (ICD10) Chapter                | Wairarapa Maori         |           |           |
|--|-------------------------|-----------|-----------|
|  | No. of Hospitalisations | Female    | Male      |
| C34 - Malignant neoplasm of bronchus and lung                          | 11                      | 10        | 1         |
| C16 - Malignant neoplasm of stomach                                    | 8                       | 2         | 6         |
| C71 - Malignant neoplasm of brain                                      | 6                       | 6         | 0         |
| C25 - Malignant neoplasm of pancreas                                   | 4                       | 4         | 0         |
| C78 - Secondary malignant neoplasm of respiratory and digestive organs | 4                       | 4         | 0         |
| Other cancers  | 17                      | 9         | 8         |
| <b>Total</b>   | <b>50</b>               | <b>35</b> | <b>15</b> |

## Older Maori People Aged 75-84

Between the year 2000 and 2006 there were a total of 12 hospitalisations of Wairarapa Maori, 8 females and 4 males, due to due to malignant cancers in this age group.

The following are the cancers that resulted in hospitalisations for this age group during this period.

- C15 - Malignant neoplasm of esophagus
- C16 - Malignant neoplasm of stomach
- C18 - Malignant neoplasm of colon
- C34 - Malignant neoplasm of bronchus and lung
- C44 - Other malignant neoplasms of skin
- C50 - Malignant neoplasm of breast
- C71 - Malignant neoplasm of brain
- C78 - Secondary malignant neoplasm of respiratory and digestive organs

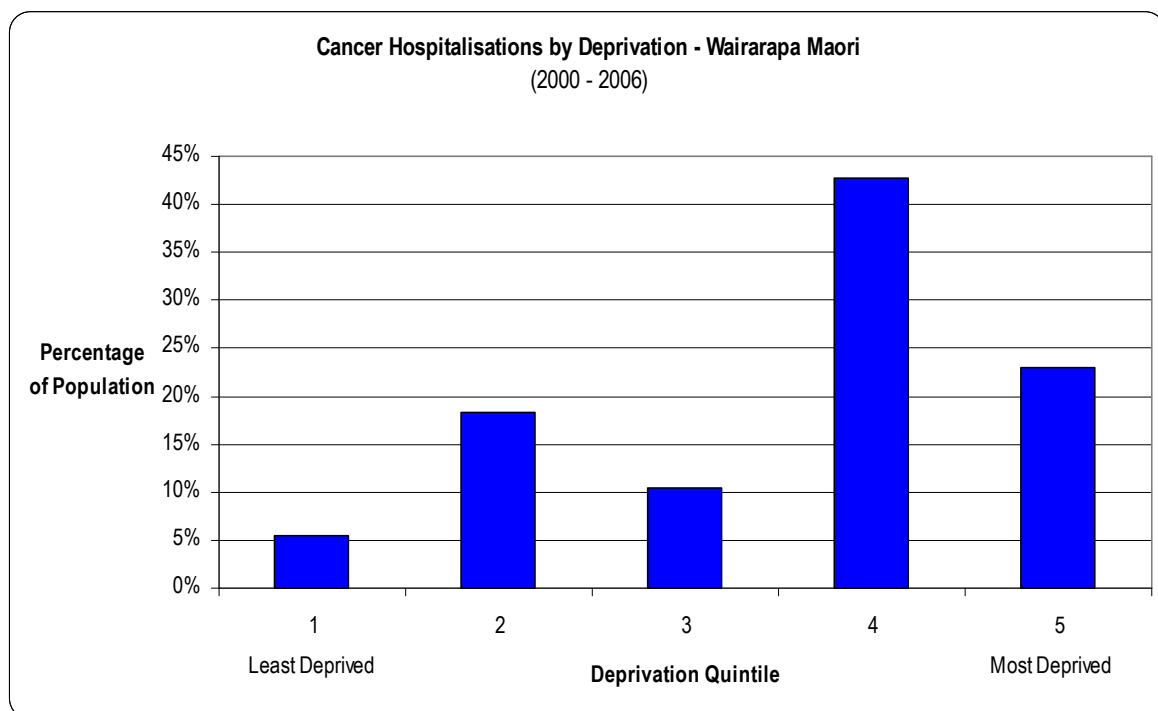
## Older Maori People Aged 85 +

There were 3 hospitalisations of Wairarapa Maori in this age group due to malignant cancers between the year 2000 and 2006. All of these were for Maori females. The following are the cancers that resulted in hospitalisations for this age group during this period.

- C53 - Malignant neoplasm of cervix uteri
- C78 - Secondary malignant neoplasm of respiratory and digestive organs

### 7.2.3 Cancer Hospitalisations by Deprivation

The following graph shows the breakdown of malignant cancer hospitalisations for Wairarapa Maori to the deprivation level between the years 2000 - 2006. Of these hospitalisations, two thirds of them were for Wairarapa Maori who lived in Quintile 4 (43%) and Quintile 5 (23%).



## 7.3 Cancer Outcomes

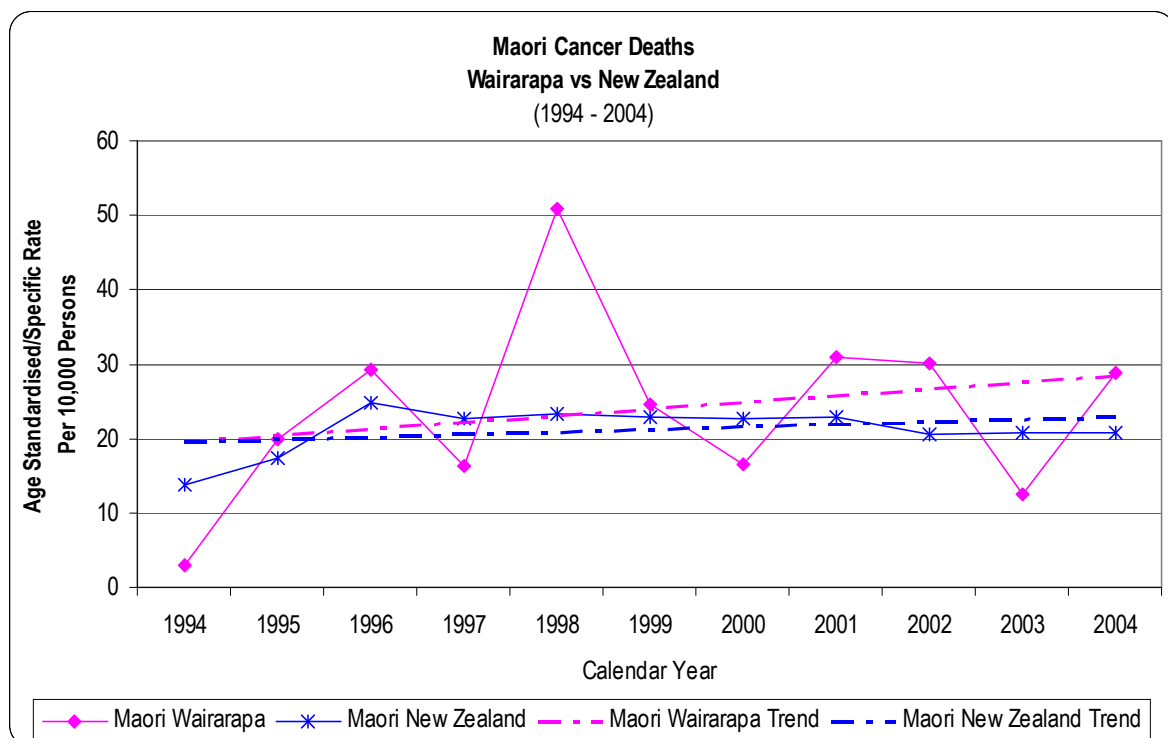
### 7.3.1 Cancer Mortality

Cancer was the second leading cause of mortality among Wairarapa Maori, accounting for 30% of deaths (84) between 1994 and 2004. This is 4% higher than for New Zealand Maori overall.

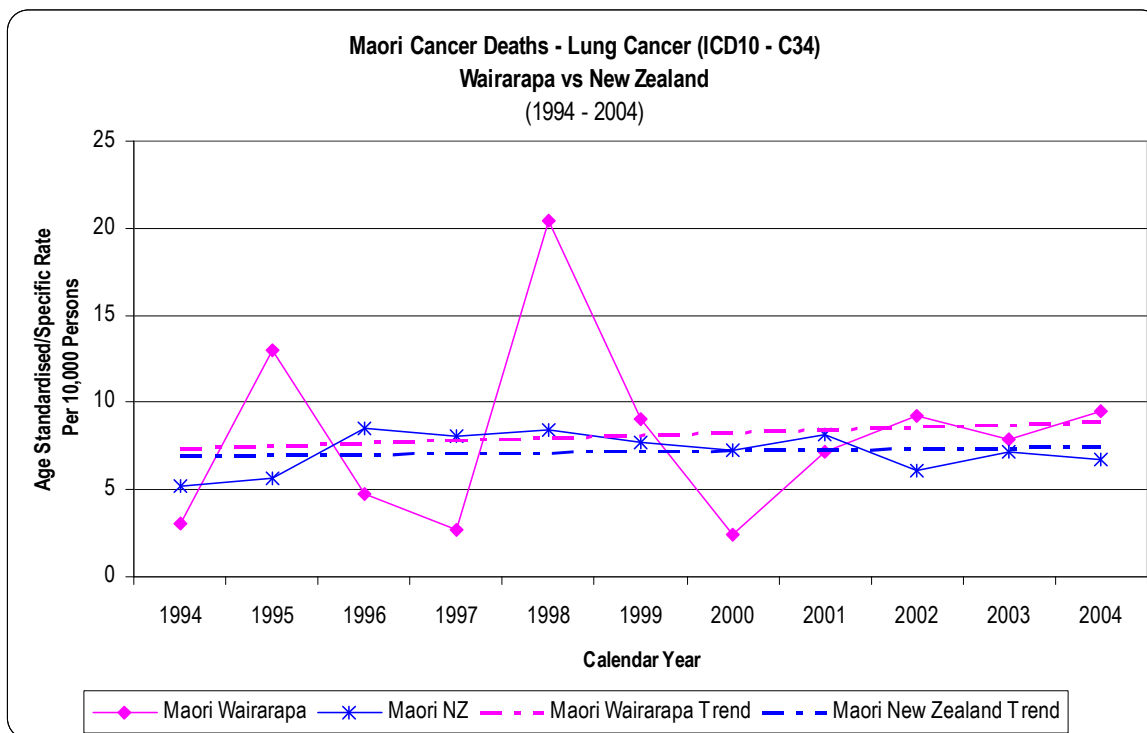
Among all malignant cancer deaths of Wairarapa Maori between 1994 and 2004, the most common was due to lung cancer (27), followed by stomach cancer (8 deaths). The following table shows the mortality percentage of Wairarapa Maori, compared with New Zealand Maori due to malignant cancers.

| International Classification of Disease (ICD10) Chapter | Maori            |             |             |
|---|------------------|-------------|-------------|
|   | Wairarapa Number | Wairarapa   | New Zealand |
| C34 - Malignant neoplasm of bronchus and lung           | 27               | 32%         | 31%         |
| C16 - Malignant neoplasm of stomach                     | 8                | 10%         | 6%          |
| C50 - Malignant neoplasm of breast                      | 7                | 8%          | 9%          |
| C61 - Malignant neoplasm of prostate                    | 6                | 7%          | 4%          |
| C18 - 21 Malignant neoplasm of colorectum and anus      | 5                | 6%          | 6%          |
| Other Cancers   | 31               | 37%         | 44%         |
| <b>Total</b>  | <b>84</b>        | <b>100%</b> | <b>100%</b> |

When comparing cancer deaths of Wairarapa Maori with New Zealand Maori, the age standardised mortality rate trend shows that rates for both increased, however more so in the Wairarapa between 1994 and 2004.

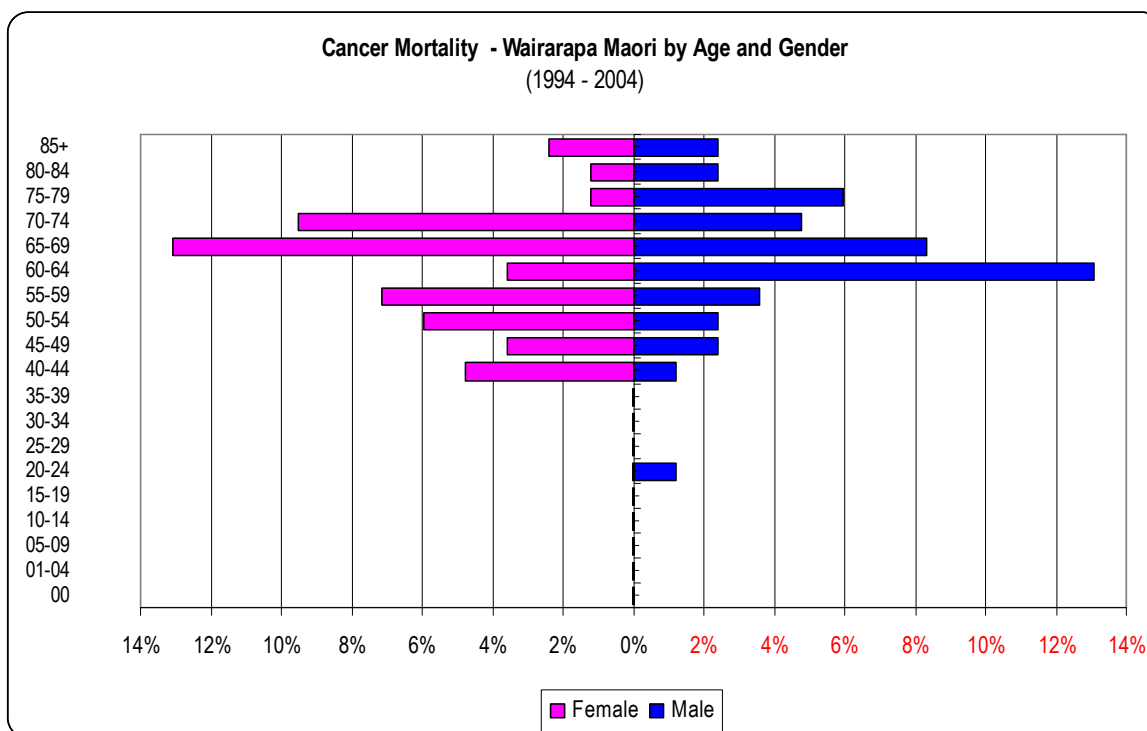


The following graph shows the age standardised mortality rates for Lung cancer (C34 - Malignant neoplasm of bronchus and lung) comparing Wairarapa Maori with New Zealand Maori between 1994 and 2004. The trend shows a slight increase for Wairarapa Maori during this period.



### 7.3.2 Cancer Mortality by Age Group and Gender

Death due to cancer occurred earlier in life for Wairarapa Maori females than for Wairarapa Maori males between 1994 and 2004. From the age of 60 onwards the reverse happens with a sharp increase of Maori male deaths from cancers. Overall, the gender split for Wairarapa Maori deaths from cancer was 52% for Maori females and 48% for Maori males.



### Wairarapa Maori Aged 0-44 Years

During the period 1994 to 2004 there were 6 deaths due to cancers for Maori in the Wairarapa, 4 for females, and 2 for males.

There cancers were:

- C15 - Malignant neoplasm of oesophagus
- C16 - Malignant neoplasm of stomach
- C18 - Malignant neoplasm of colon
- C50 - Malignant neoplasm of breast
- C53 - Malignant neoplasm of cervix uteri
- C92 - Myeloid leukaemia

### Wairarapa Maori Aged 45 - 64 Years

During the period 1994 to 2004 there were 35 deaths from cancer for Wairarapa Maori in this age group. Lung cancer was the cause of death for more Maori females than Maori males, and overall accounted for just over one third of cancer deaths in this age group for Wairarapa Maori.

#### Top five cancer deaths

| International Classification of Disease (ICD10) Chapter       | Wairarapa Maori |           |           |
|---|-----------------|-----------|-----------|
|   | No. of Deaths   | Female    | Male      |
| C34 - Malignant neoplasm of bronchus and lung                 | 12              | 8         | 4         |
| C16 - Malignant neoplasm of stomach                           | 3               | 1         | 2         |
| C22 - Malignant neoplasm of liver and intrahepatic bile ducts | 3               | 1         | 2         |
| C25 - Malignant neoplasm of pancreas                          | 2               | 0         | 2         |
| C53 - Malignant neoplasm of cervix uteri                      | 2               | 2         | 0         |
| Other cancers   | 13              | 5         | 8         |
| <b>Total</b>  | <b>35</b>       | <b>17</b> | <b>18</b> |

### Older Wairarapa Maori Aged 65 + Years

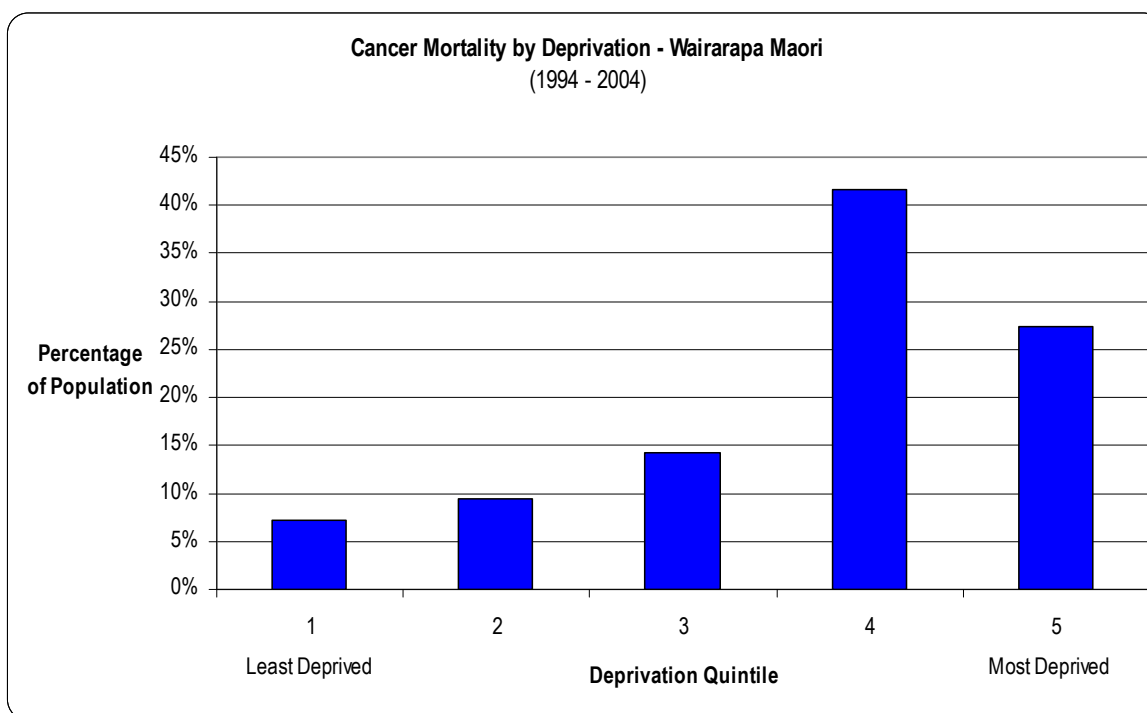
A total of 43 Wairarapa Maori people died as a result of cancer within this age group between 1994 and 2004. Lung cancer was the most common cause of cancer deaths affecting twice as many Maori females than Maori males, overall accounting for just over one third of cancer deaths in this age group for Wairarapa Maori.

#### Top five cancer deaths

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori |           |           |
|---|-----------------|-----------|-----------|
|   | No. of Deaths   | Female    | Male      |
| C34 - Malignant neoplasm of bronchus and lung           | 15              | 10        | 5         |
| C50 - Malignant neoplasm of breast                      | 5               | 5         | 0         |
| C61 - Malignant neoplasm of prostate                    | 5               | 0         | 5         |
| C16 - Malignant neoplasm of stomach                     | 4               | 0         | 4         |
| C18 - Malignant neoplasm of colon                       | 2               | 0         | 2         |
| Other cancers   | 12              | 8         | 4         |
| <b>Total</b>  | <b>43</b>       | <b>23</b> | <b>20</b> |

### 7.3.3 Cancer Mortality by Deprivation

The following graph shows the breakdown of malignant cancer deaths for Wairarapa Maori to the deprivation level between the years 1994 - 2004. Of these deaths, just over two thirds (69%) of them were for Wairarapa Maori who lived in Quintile 4 (42%) and Quintile 5 (27%).



### 7.4 Avoidable Cancer Mortality

Between 1994 and 2004 there were 53 deaths of Wairarapa Maori due to avoidable cancers, of whom all were over the age of 40 years old. The most prevalent avoidable cancer type causing death for Wairarapa Maori was lung cancer. The majority of deaths from this cancer type were of Maori females (18 deaths), compared with Maori males (8 deaths).

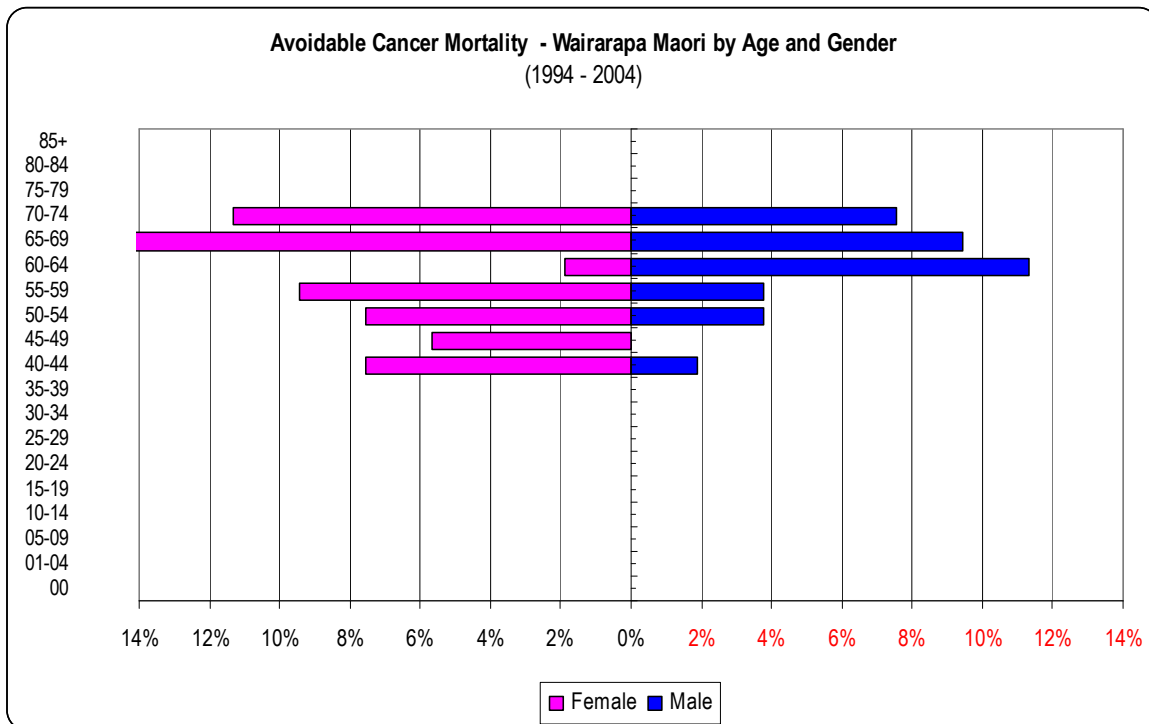
The following table shows the avoidable cancers resulting in death between 1994 and 2004.

#### Top five Maori avoidable cancer deaths

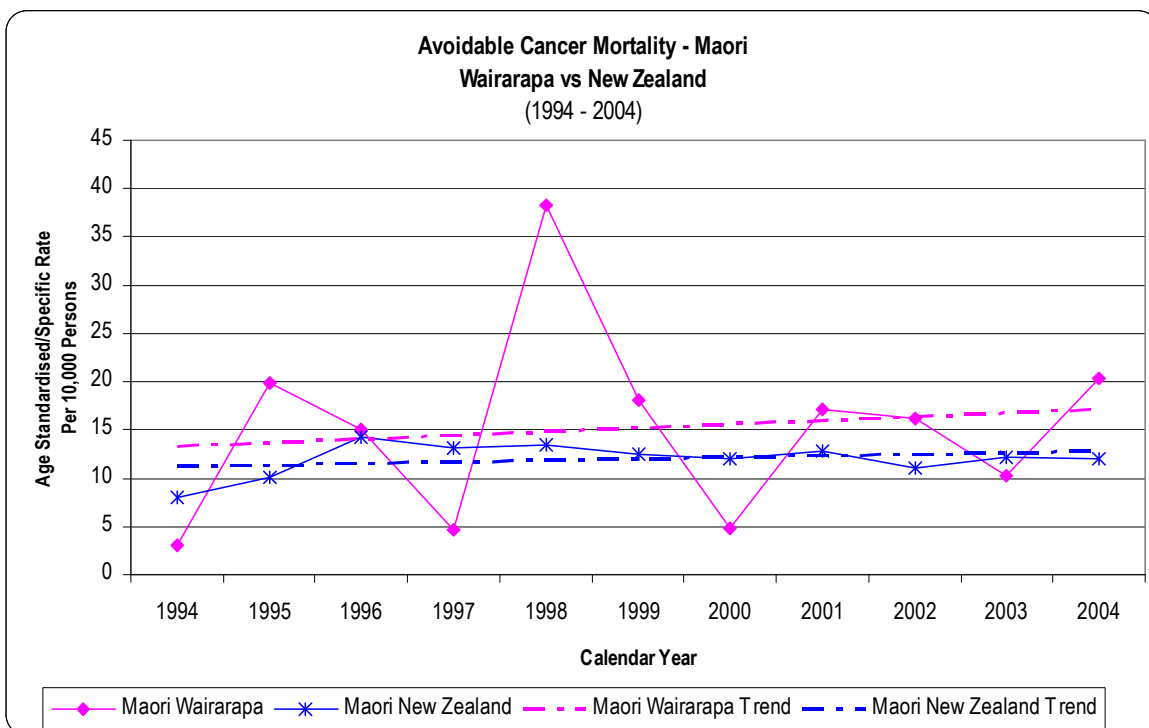
| International Classification of Disease (ICD10) Chapter | Wairarapa Maori |           |           |
|---|-----------------|-----------|-----------|
|   | No. of Deaths   | Female    | Male      |
| C34 - Malignant neoplasm of bronchus and lung           | 26              | 18        | 8         |
| C16 - Malignant neoplasm of stomach                     | 7               | 2         | 5         |
| C50 - Malignant neoplasm of breast                      | 5               | 5         | 0         |
| C53 - Malignant neoplasm of cervix uteri                | 4               | 4         | 0         |
| C15 - Malignant neoplasm of esophagus                   | 3               | 1         | 2         |
| Other cancers   | 8               | 3         | 5         |
| <b>Total</b>  | <b>53</b>       | <b>33</b> | <b>20</b> |

| Total Cancer Mortality vs Avoidable Cancer      | Total      | Female     | Male       |
|---|------------|------------|------------|
| Total Wairarapa Maori Cancer Deaths             | 84         | 44         | 40         |
| Avoidable Wairarapa Maori Cancer Deaths         | 53         | 33         | 20         |
| <b>Percentage of Avoidable Wairarapa Deaths</b> | <b>63%</b> | <b>75%</b> | <b>50%</b> |

Avoidable mortality for Wairarapa Maori as a result of cancer affected more females (62%) than males (38%).

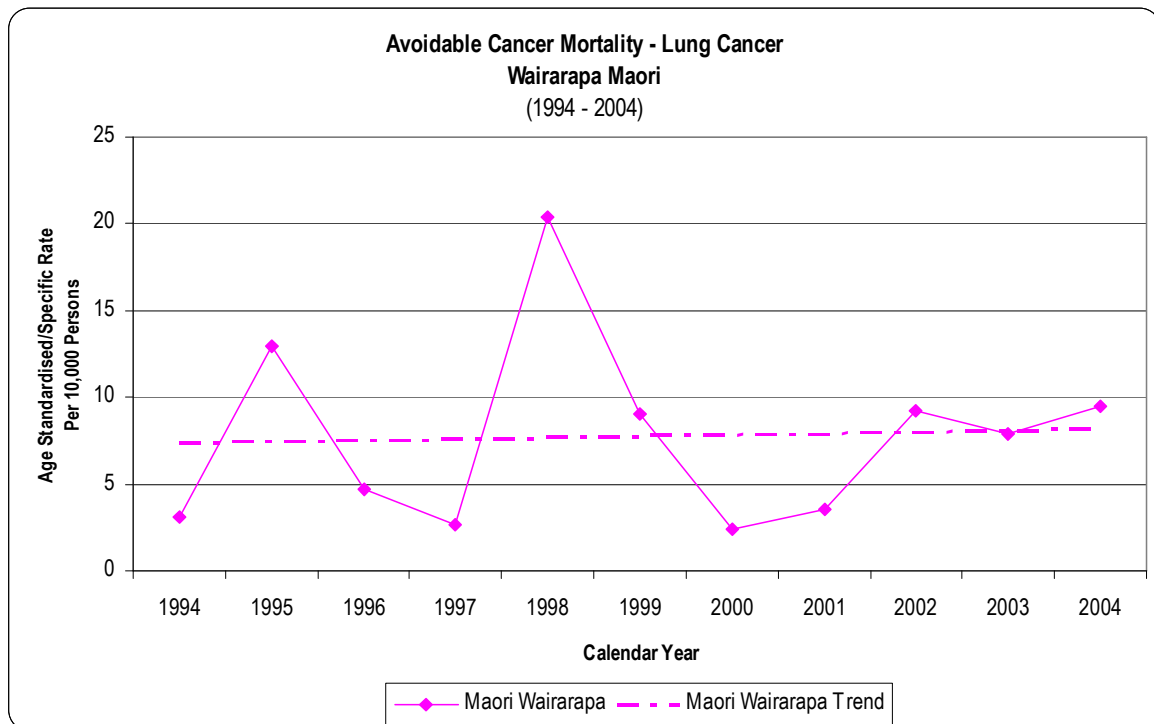


The following graph shows age standardised avoidable cancer mortality rates comparing Wairarapa Maori with New Zealand Maori between 1994 and 2004. The trend shows rates have increased slightly for Wairarapa Maori during this period and are above the New Zealand Maori rates.



## 7.5 Lung Cancer Mortality

Lung cancer (C34 - Malignant neoplasm of bronchus and lung) avoidable mortality rates in the Wairarapa for Maori see the trend shows a slight increase, between 1994 and 2004.



## 8 MENTAL HEALTH

### Key Findings for the Wairarapa

- The age-standardised self-harm hospitalisation rates, comparing Maori with Non-Maori shows the rate for Wairarapa Maori is significantly higher than the New Zealand Maori rate, and was 3rd highest compared to other DHBs in 2006. The rate for Wairarapa Non-Maori is very similar to the New Zealand rate.
- Hospitalisation rates for Wairarapa Maori due to Mental Health Conditions (all types) was above that of the New Zealand Maori rate in the year 2000 and has significantly decreased during the year 2000 to 2006 period.
- Schizophrenia is the main reason for mental health hospitalisations, both for Wairarapa Maori and New Zealand Maori, with the national percentage being 9% higher than Wairarapa. Schizophrenia affects significantly more Wairarapa Maori males than females.
- Hospitalisations due to Mental and behavioural disorders due to the use of alcohol were the second most common cause (13%) of mental health hospitalisations of Wairarapa Maori between the year 2000 and 2006.
- Hospitalisations due to either Depressive episodes or Mental and behavioural disorders due to use of alcohol are higher for Wairarapa Maori, while hospitalisations due to Bipolar affective disorder are higher for New Zealand Maori.
- Self-harm hospitalisation rates for Wairarapa Maori are significantly higher than the New Zealand Maori rate.

Mental health is a term used to describe either a level of cognitive or emotional wellbeing or an absence of a mental disorder. This may include an individual's ability to enjoy life and procure a balance between life activities and efforts to achieve psychological resilience.

Improving the health status of people with mental health illness is one of the Wairarapa DHBs strategic priorities. Mental health services funded by the Wairarapa DHB include a mix of local and regional services that cover a wide range of mental health and alcohol and other drug addiction needs. These include a mix of residential support, community support, day programmes and services.

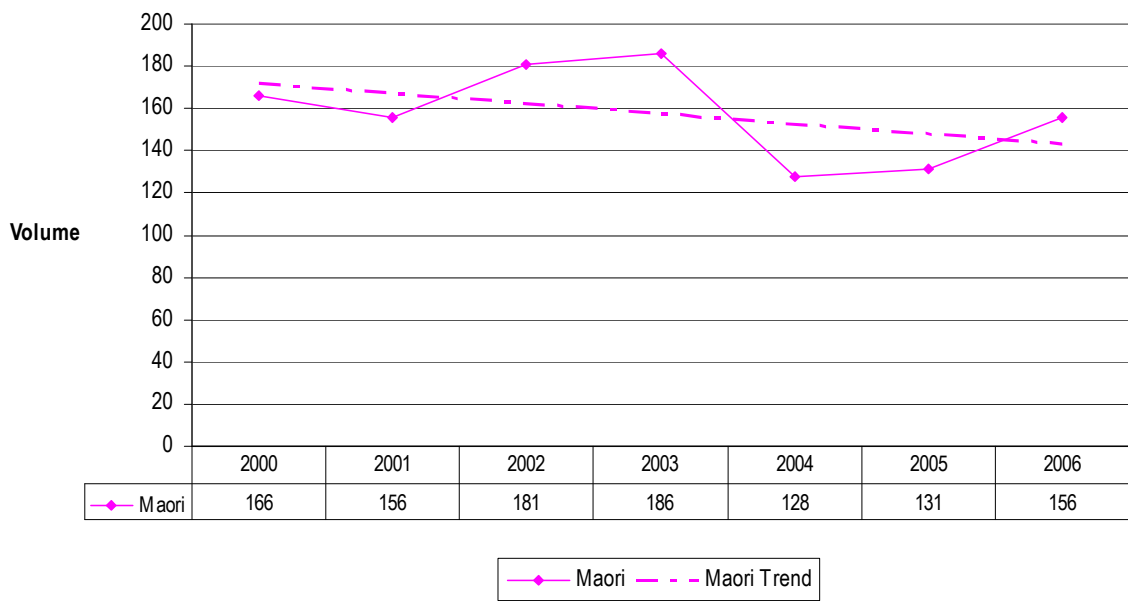
### 8.1 Mental Health Information National Collection (MHINC) Data

The Mental Health Information National Collection (MHINC) was started in July 2000 and is a national database of information collected by the Ministry of Health to support policy formation, monitoring, and research.

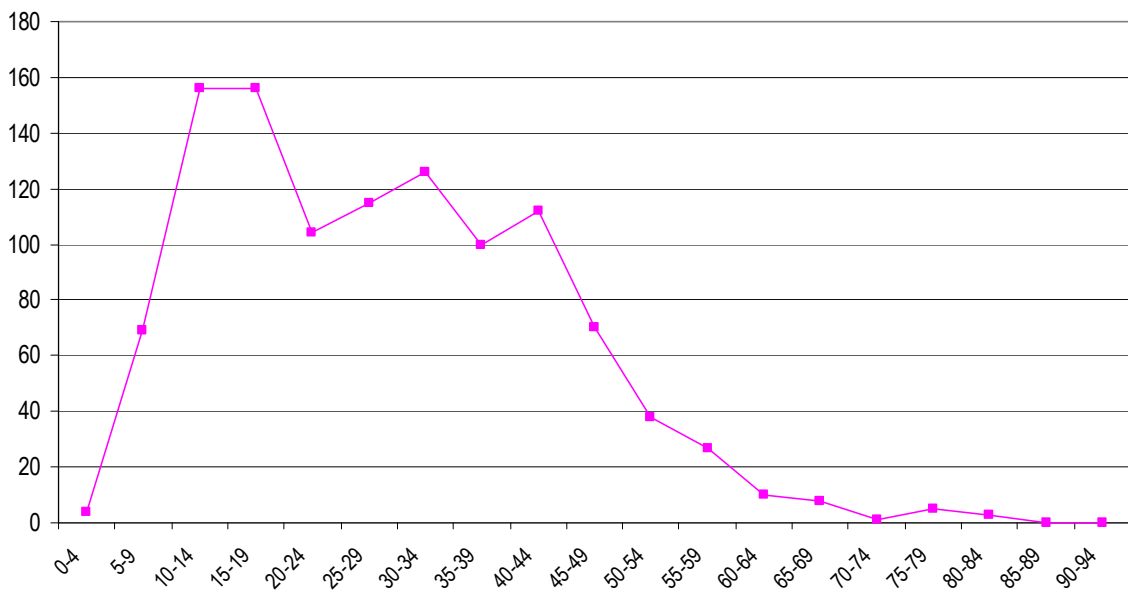
The following graph, sourced from MHINC, shows the number of Wairarapa Maori clients seen each month by Mental Health professionals between the years 2000 and 2006. Clients may be seen more than once across several months during the year.

In 2004 the DHB transferred contracts for detoxification and opiate replacement treatments (methadone) from the DHB provider to the Non-Government Organisation (NGO) Wairarapa Addiction Services Incorporated (WASI). The effects can be seen in the table below where the Total Unique Client numbers drops by 58 from 2003 to 2004. WASI reports Methadone Service contacts to MHINC but not other alcohol and other drug client contacts. The increase of 25 Unique Clients from 2005 to 2006 is therefore solely due to mental health or methadone service related conditions.

**Total Number of Maori MHINC clients seen by Wairarapa DHB  
(2000 - 2006)**



**Total Number of Maori MHINC clients seen by Wairarapa DHB by Age Group  
(2000 - 2006)**



## 8.2 Mental Health Hospitalisations

Between the year 2000 and 2006, there were 256 hospitalisations of Wairarapa Maori due to Mental Health conditions.

The following table shows the Wairarapa Maori versus New Zealand Maori Mental Health hospitalisation percentages between the year 2000 and 2006. Schizophrenia is the main reason for mental health hospitalisations, both for Wairarapa Maori and New Zealand Maori, with the national percentage being 9% higher than Wairarapa.

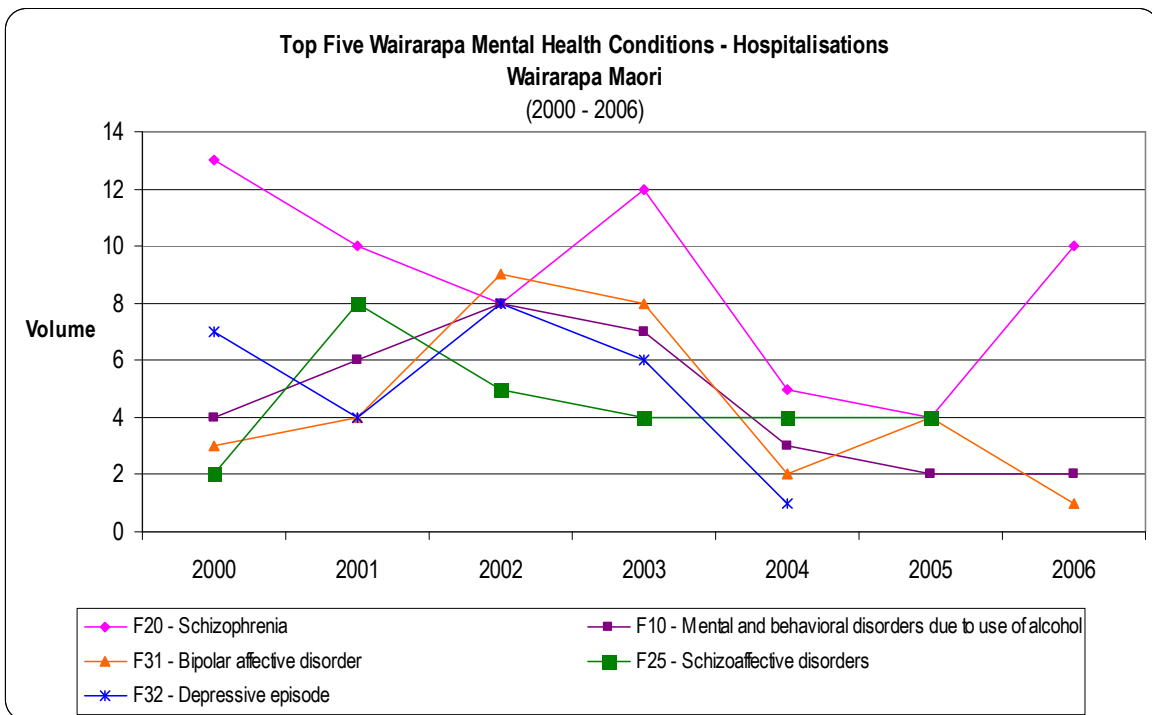
Hospitalisations due to either Depressive episodes or Mental and behavioural disorders due to use of alcohol are higher for Wairarapa Maori, while hospitalisations due to Bipolar affective disorder are higher for New Zealand Maori.

### Top Five Hospitalisations

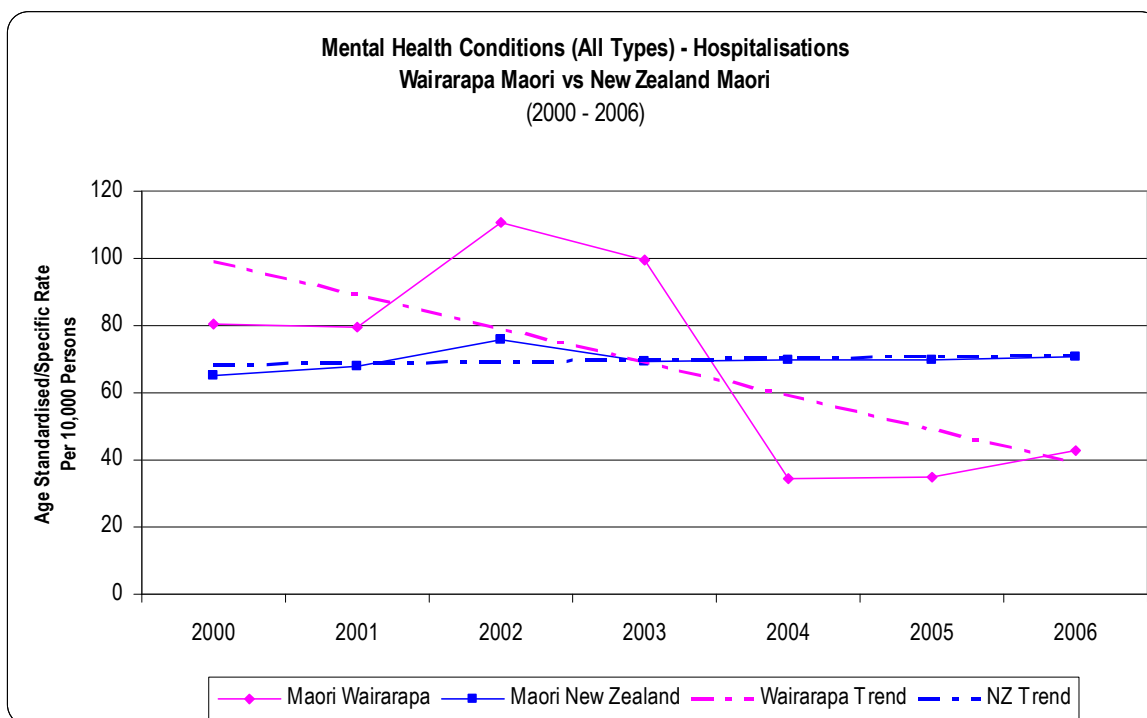
| International Classification of Disease (ICD10) Chapter     | Maori            |             |               |
|---|------------------|-------------|---------------|
|   | Wairarapa Number | Wairarapa % | New Zealand % |
| F20 - Schizophrenia   | 62               | 24%         | 33%           |
| F10 - Mental and behavioral disorders due to use of alcohol | 32               | 13%         | 6%            |
| F31 - Bipolar affective disorder                            | 31               | 12%         | 16%           |
| F25 - Schizoaffective disorders                             | 27               | 11%         | 9%            |
| F32 - Depressive episode                                    | 26               | 10%         | 6%            |
| Other Mental Health Conditions                              | 78               | 30%         | 30%           |
| <b>Total</b>  | <b>256</b>       | <b>100%</b> | <b>100%</b>   |

Note: The hospitalisation count above is of Wairarapa residents admitted to any hospital throughout New Zealand.

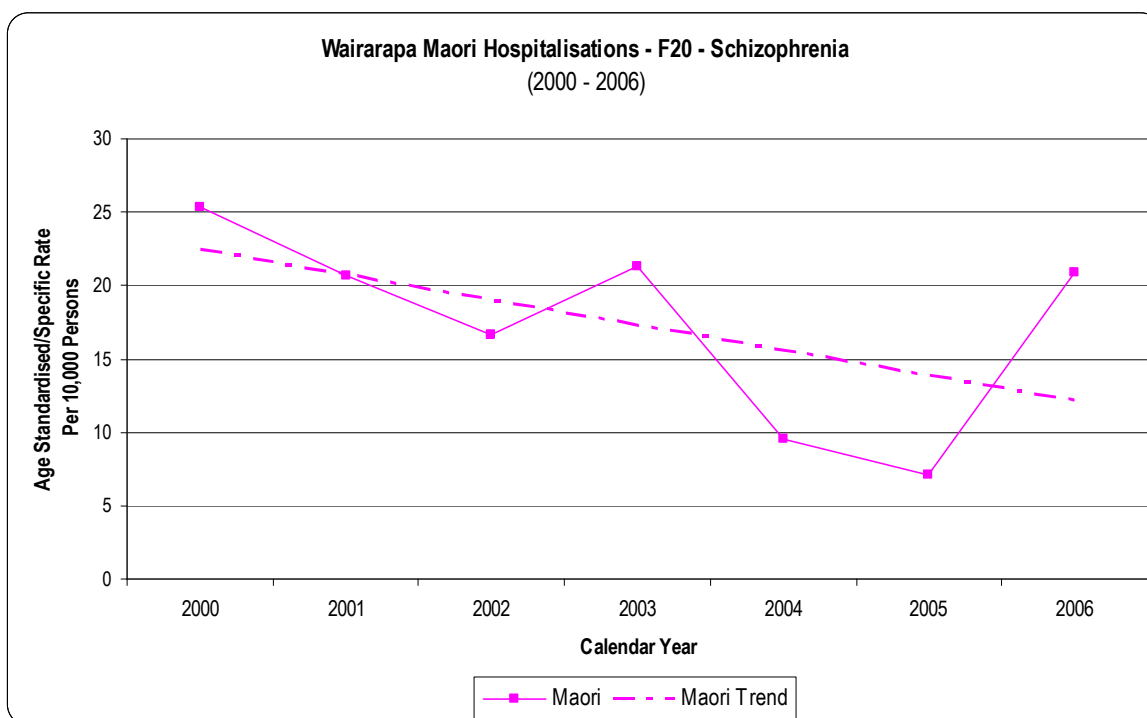
The following graph shows the top five causes of Wairarapa Maori hospitalisations due to Mental Health conditions between the year 2000 and 2006. Combined these conditions account for 70% for the Mental Health hospitalisations of Wairarapa Maori during this period. Overall, there is a decreasing trend in hospitalisations of Wairarapa Maori due to these conditions, despite the peaks and troughs in the graph.



The following graph shows the age standardised hospitalisation rates due to Mental Health Conditions (all types) comparing Wairarapa Maori with New Zealand Maori between the year 2000 and 2006. The Wairarapa Maori rate was above that of the New Zealand Maori rate in the year 2000 and has significantly decreased during this period. Hospitalisation rates due to Mental Health Conditions for New Zealand Maori overall show a slight increase.

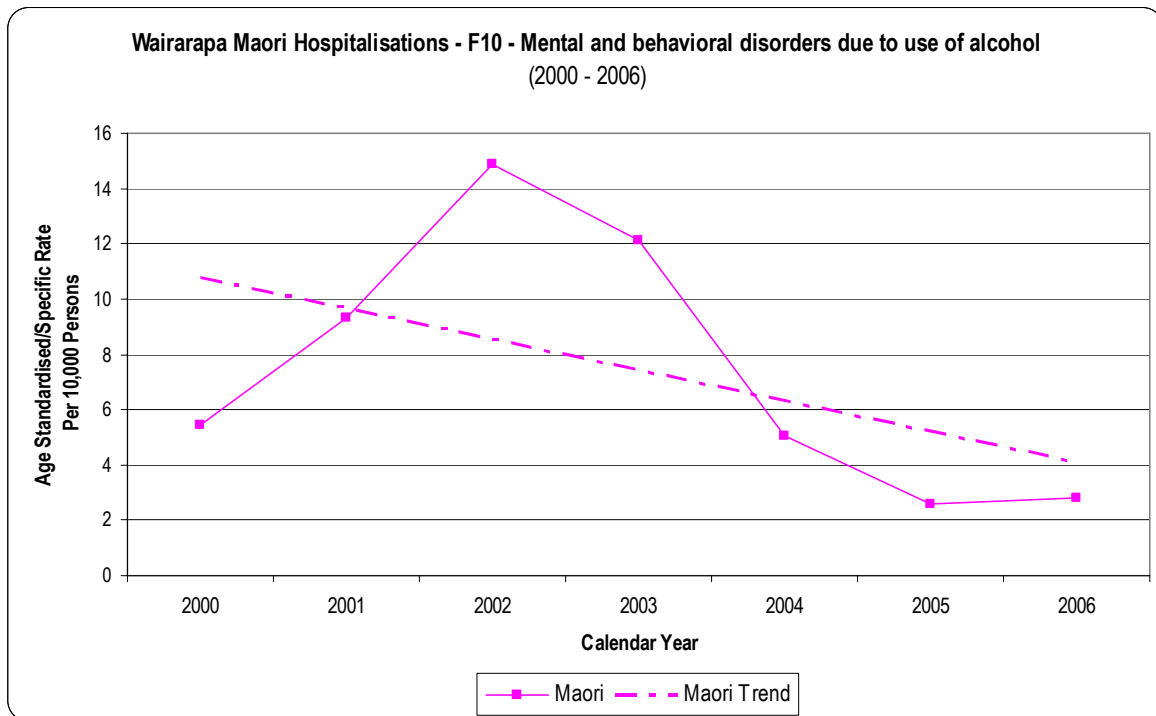


Between the year 2000 and 2006 there were 62 hospitalisations of Wairarapa Maori due to Schizophrenia, affecting significantly more males than females. The following graph shows the age standardised hospitalisation rates for Wairarapa Maori due to Schizophrenia during this period. The trends shows hospitalisations reduced during this period, however there is an increase between 2005 and 2006.

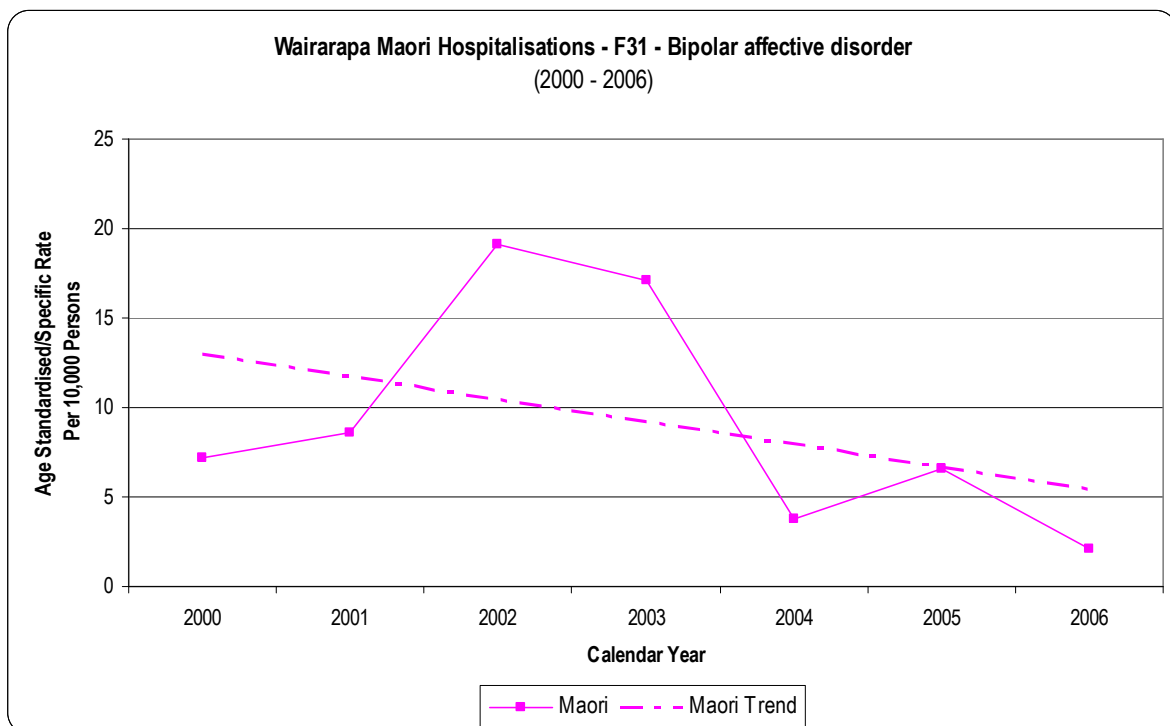


| Schizophrenia (ICD F-20)       | Maori  |      |
|--------------------------------|--------|------|
|                                | Female | Male |
| Number of Hospitalisations     | 15     | 47   |
| Percentage of Hospitalisations | 24%    | 76%  |

The following graph shows the age standardised hospitalisation rates for Wairarapa Maori due to Mental and behavioural disorders due to use of alcohol between the year 2000 and 2006. The trend shows hospitalisations for Wairarapa Maori reduced during this period.

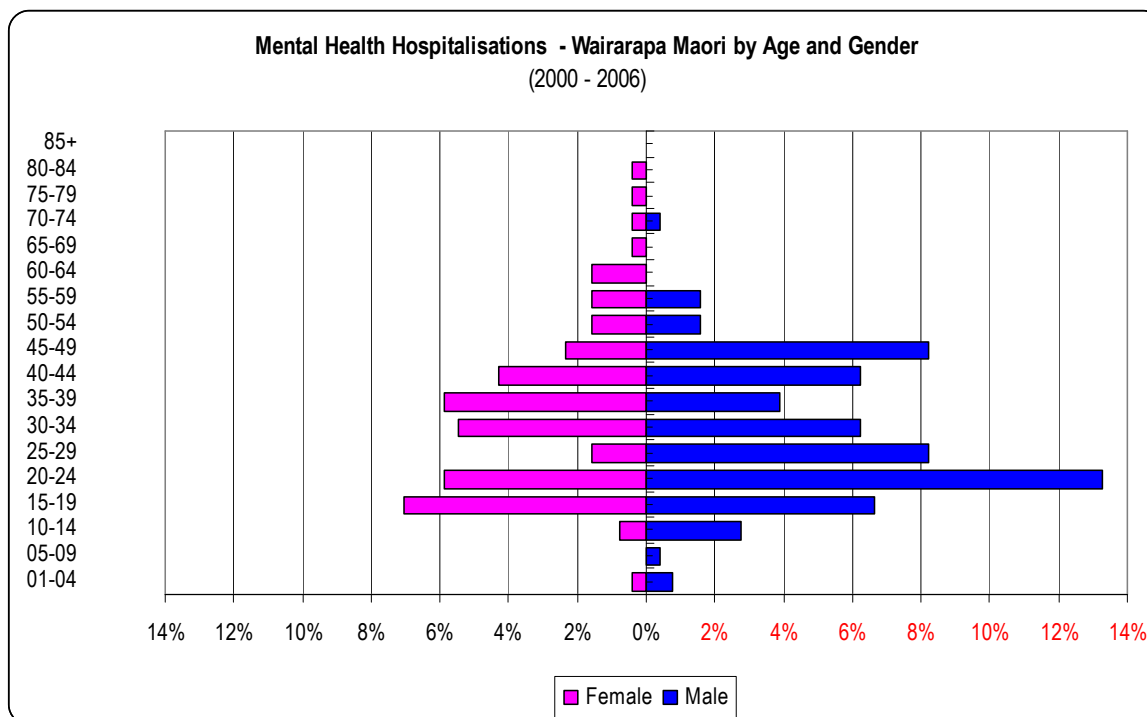


The following graph shows the age standardised hospitalisation rates for Wairarapa Maori due to Bipolar affective disorder between the year 2000 and 2006. While the rates for Wairarapa Maori peak in 2002 and 2003, the trend shows a decrease in hospitalisations for Wairarapa Maori during this period.



### 8.3 Mental Health Hospitalisations by Age Group and Gender

The following graphs show that Wairarapa Maori males have more hospitalisations (60%) due to Mental Health conditions than Wairarapa Maori females (40%), particularly between the ages of 20 to 24 year age group.



#### Maori Children Aged 0-14 Years

Between the year 2000 and 2006 there were 13 hospitalisations of Wairarapa Maori due to Mental Health conditions, with the leading cause being due to the use of alcohol.

#### Top five mental health hospitalisations

| International Classification of Disease (ICD10) Chapter                                  | Wairarapa Maori         |          |           |
|--|-------------------------|----------|-----------|
|  | No. of Hospitalisations | Female   | Male      |
| F10 - Mental and behavioral disorders due to use of alcohol                              | 5                       | 2        | 3         |
| F80 - Specific developmental disorders of speech and language                            | 2                       | -        | 2         |
| F07 - Personality and behavioral disorders due to brain disease, damage, and dysfunction | 1                       | -        | 1         |
| F20 - Schizophrenia  | 1                       | -        | 1         |
| F29 - Unspecified nonorganic psychosis   | 1                       | -        | 1         |
| Other Mental Health conditions   | 3                       | 1        | 2         |
| <b>Total</b>   | <b>13</b>               | <b>3</b> | <b>10</b> |

#### Maori Youth Aged 15-24 Years

During the period year 2000 to 2006 there were 84 hospitalisations for Wairarapa Maori in this age group due to mental health conditions. The main cause for these hospitalisations were due to Mental and behavioural disorders due to use of alcohol (ICD F-10) and affected more males than females. The second most common reason for hospitalisations (affecting twice as many males than females) was due to Schizophrenia (ICD F-20).

### Top five mental health hospitalisations

| International Classification of Disease (ICD10) Chapter      | Wairarapa               |           |           |
|--|-------------------------|-----------|-----------|
|  | No. of Hospitalisations | Female    | Male      |
| F10 - Mental and behavioural disorders due to use of alcohol | 21                      | 6         | 15        |
| F20 - Schizophrenia  | 12                      | 4         | 8         |
| F25 - Schizoaffective disorders                              | 11                      | 3         | 8         |
| F32 - Depressive episode                                     | 10                      | 6         | 4         |
| F29 - Unspecified nonorganic psychosis                       | 7                       | 1         | 6         |
| Other Mental Health conditions                               | 23                      | 13        | 10        |
| <b>Total</b>   | <b>84</b>               | <b>33</b> | <b>51</b> |

### Maori Adults Aged 25-44 Years

During the period year 2000 to 2006 there were 107 hospitalisations for Wairarapa Maori adults in this age group due to mental health conditions. The main cause for these hospitalisations was due to Schizophrenia (ICD F-20) and affected almost four times as many more Wairarapa Maori males than females. On the other hand, females experienced more hospitalisations due to Bipolar affective disorder (ICD F-31).

### Top five mental health hospitalisations

| International Classification of Disease (ICD10) Chapter   | Wairarapa               |           |           |
|---|-------------------------|-----------|-----------|
|   | No. of Hospitalisations | Female    | Male      |
| F20 - Schizophrenia                                       | 34                      | 7         | 27        |
| F43 - Reaction to severe stress, and adjustment disorders | 17                      | 7         | 10        |
| F25 - Schizoaffective disorders                           | 11                      | 2         | 9         |
| F32 - Depressive episode                                  | 11                      | 7         | 4         |
| F31 - Bipolar affective disorder                          | 7                       | 6         | 1         |
| Other Mental Health conditions                            | 27                      | 15        | 12        |
| <b>Total</b>  | <b>107</b>              | <b>44</b> | <b>63</b> |

### Maori Adults Aged 45-64 Years

During the period year 2000 to 2006 there were 47 hospitalisations for Wairarapa Maori in this age group due to mental health conditions. Bipolar affective disorder (ICD F-31) and Schizophrenia (ICD F-20) were the two leading causes affecting significantly more males than females during this period.

### Top five mental health hospitalisations

| International Classification of Disease (ICD10) Chapter   | Wairarapa               |           |           |
|---|-------------------------|-----------|-----------|
|   | No. of Hospitalisations | % Female  | % Male    |
| F31 - Bipolar affective disorder                          | 17                      | 3         | 14        |
| F20 - Schizophrenia                                       | 14                      | 3         | 11        |
| F25 - Schizoaffective disorders                           | 5                       | 3         | 2         |
| F32 - Depressive episode                                  | 4                       | 3         | 1         |
| F43 - Reaction to severe stress, and adjustment disorders | 2                       | 2         | -         |
| Other Mental Health conditions                            | 5                       | 4         | 1         |
| <b>Total</b>  | <b>47</b>               | <b>18</b> | <b>29</b> |

## Older Maori People Aged 65 + Years

There were a total of 5 Mental Health related hospitalisations for Wairarapa Maori in this age group between the year 2000 to 2006, the majority for females.

### Top five mental health hospitalisations

| International Classification of Disease (ICD10) Chapter                                   | Wairarapa               |          |          |
|---|-------------------------|----------|----------|
|   | No. of Hospitalisations | % Female | % Male   |
| F05 - Delirium, not induced by alcohol and other psychoactive substances                  | 1                       | 1        | -        |
| F07 - Personality and behavioural disorders due to brain disease, damage, and dysfunction | 1                       | -        | 1        |
| F10 - Mental and behavioural disorders due to use of alcohol                              | 1                       | 1        | -        |
| F20 - Schizophrenia   | 1                       | 1        | -        |
| F43 - Reaction to severe stress, and adjustment disorders                                 | 1                       | 1        | -        |
| <b>Total</b>  | <b>5</b>                | <b>4</b> | <b>1</b> |

## 8.4 Suicide

Suicide is a serious health issue that can be used as an indicator of the mental health and social wellbeing in the population. Suicide occurs for a number of reasons such as depression, substance abuse, shame, avoiding pain, financial difficulties or other undesirable situations. Reducing the rate of suicide and suicide attempts is a priority in the New Zealand Health Strategy and the New Zealand Injury Prevention Strategy.

The Ministry of Health's Public Health Intelligence (PHI) Unit published the reports "Suicide Facts 2004 - 2005 data" and "Suicide Facts 2005 - 2006 data". In both of these publications the Wairarapa was shown to have the highest death rates of all DHB's.

### Three-Year Moving Average

Three-year moving average age-standardised rates are the average age-standardised rates for rolling three-year periods; i.e., 2000-2002, 2001-2003, 2002-2004, etc. The three-year moving averages are plotted on the mid-point year, e.g., the 2003-2005 three-year moving average is plotted on the year 2004.

Rates based on individual years tend to exhibit pronounced variation, especially when the event of interest is relatively rare. Using the three-year moving average "smoothes" this variation so that the underlying trends, over time, can be more clearly illustrated. Three-year moving averages have been used to present suicide data here due to the numbers involved being relatively small.

### 8.4.1 Suicide Death Rates

It is difficult to analyse or show a meaningful trend at an ethnicity level due to low numbers.

The following table shows a breakdown of Suicides in the Wairarapa for Maori. Age standardised rates have been calculated only where actual counts are greater than 5, which is why no rates are calculated for Wairarapa Maori during this period.

| Wairarapa Suicides<br>(Three-year moving average) | Maori  |      |
|---|--------|------|
|   | Number | Rate |
| 2000-2002   | 0      | -    |
| 2001-2003   | 1      | -    |
| 2002-2004   | 3      | -    |
| 2003-2005   | 3      | -    |

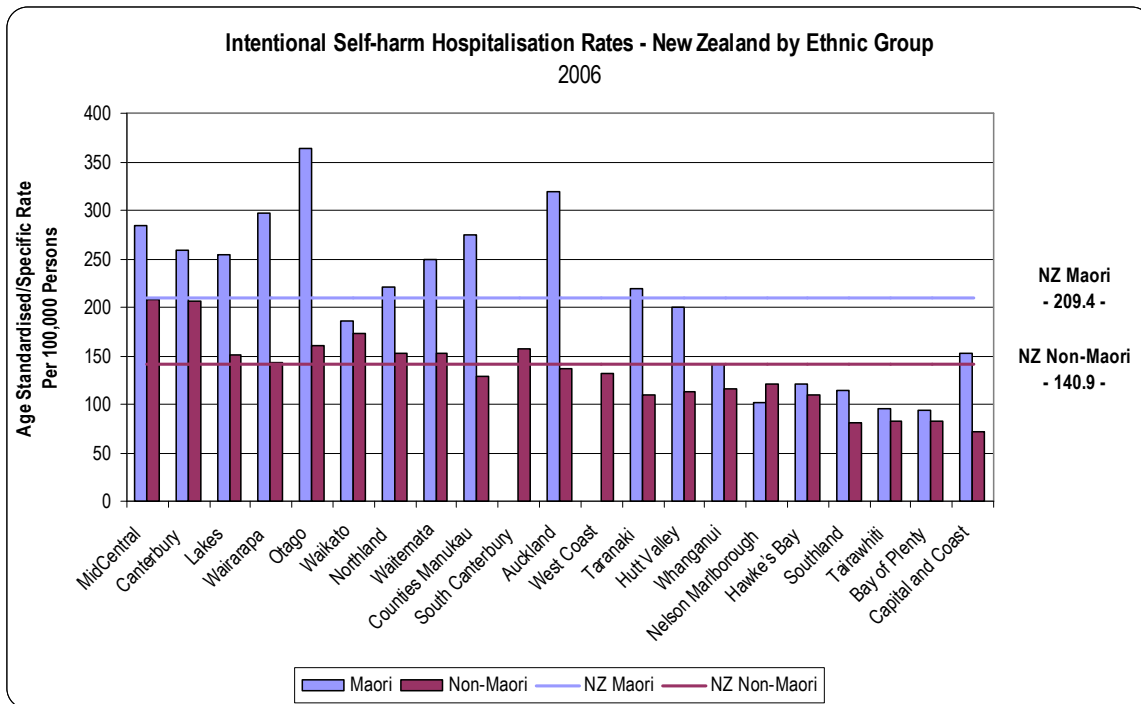
## 8.5 Intentional Self-harm

Self-harm is not a suicide attempt; however, initially self-injury was classified as a suicide attempt. There is a non-causal correlation between self-harm and suicide. A common misconception is that self-injurers are suicidal. Non-suicide related self-harm is not an effect of depression; only a very small number of people with clinical depression demonstrate non-suicide related self-harming behaviour; intentional self-harm in this context is most often associated with personality disorders. Self-injury may be an attempt to cope with life and continue living. However, self-harm incidents are used as an indicator of suicide attempts.

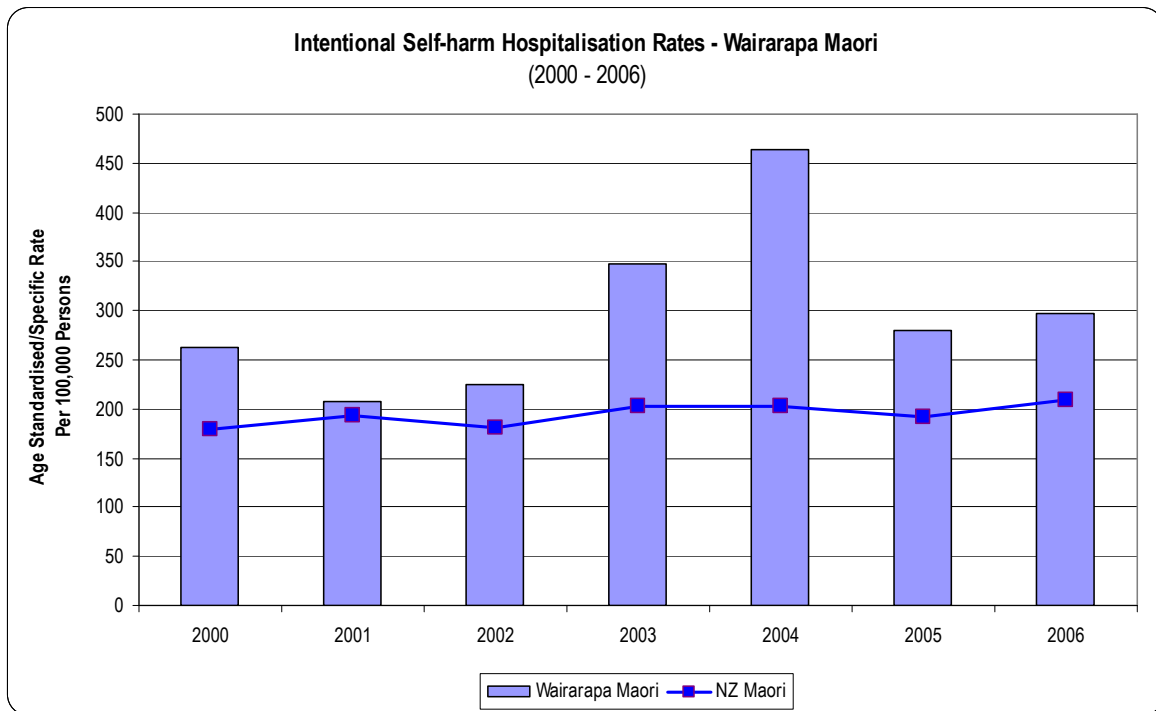
The Public Health Intelligence report “Suicide Facts 2005 - 2006 data” reported on rates of injuries due to self harm by DHB. This is measured by hospital admission rates for injuries caused by intentional self harm, and is widely accepted as an indicator of the rate of suicide attempts. The report showed the Wairarapa as having the 4<sup>th</sup> highest rate for self harm at 176 per 100,000 population 2006.

### 8.5.1 Intentional Self-harm Hospitalisations

The following graph shows the age-standardised self-harm hospitalisation rates comparing Maori with Non-Maori. The rate for Wairarapa Maori is significantly higher than the New Zealand Maori rate, and is 4<sup>th</sup> highest DHB at 297.2 per 100,000 population in 2006. The rate for Wairarapa Non-Maori is at 142.6 per 100,000 population, which is very similar to the New Zealand rate.



The following graph compares the Wairarapa Maori age-standardised self-harm hospitalisation rates with New Zealand Maori rates. Rates for Wairarapa Maori are significantly higher than New Zealand Maori; particularly in 2003 and a peak in 2004.



The following table shows a breakdown of Wairarapa Maori self-harm hospitalisations between the year 2000 and 2006. This shows that Wairarapa Maori females are more likely to self harm than Wairarapa Maori males.

| Wairarapa Self-harm Hospitalisation Numbers | Maori     |           |            |
|---|-----------|-----------|------------|
|   | Female    | Male      | Total      |
| 2000  | 9         | 5         | 14         |
| 2001  | 5         | 6         | 11         |
| 2002  | 7         | 4         | 11         |
| 2003  | 8         | 9         | 17         |
| 2004  | 15        | 7         | 22         |
| 2005  | 11        | 4         | 15         |
| 2006  | 11        | 4         | 15         |
| <b>Total</b>                                | <b>66</b> | <b>39</b> | <b>105</b> |

## 9 CHILD, YOUTH AND MATERNAL HEALTH

### Key Findings for the Wairarapa

- At the time of the 2006 census the total resident Wairarapa Maori Child and Youth population aged 0-24 years made up 54.1% of the total Wairarapa Maori population. The projections are that this population group will decrease by 5.6% by the year 2026.
- The most common cause of hospitalisations was due to factors influencing health (1,052 hospitalisations). Of this, there were 720 hospitalisations (68%) classed as ICD-10 code Z38, live-born infants according to place of birth. This refers to a newborn baby requiring admission to hospital immediately after birth or during the post natal period from the mother's bedside, whether born at hospital, home or elsewhere.
- Although the most common cause of hospitalisations was due to factors influencing health, the most common cause of hospitalisations for Wairarapa Maori females only in the 15-24 year age group was due to pregnancy complications.
- Marked ethnic differences in Oral Health status were evident with a lower proportion of Maori children being caries free at 5 years, and Maori children having higher mean DMFT scores at 12 years in both fluoridated and non-fluoridated areas.
- Increases in hospital admissions during 1996 – 2006 for serious bacterial infections were consistent with New Zealand trends. However, admission rates were lower than the New Zealand average. Rates remained consistently higher for Maori children and young people.
- In the Wairarapa during 1996-2006, hospital admissions for both lower respiratory tract infections and asthma were higher amongst Maori children.
- During 1996 – 2006 teenage birth rates for both Maori and European women were similar to their respective New Zealand ethnic specific averages.
- During 2006, 9.8% of children and young people lived in crowded households compared to 16.5% nationally. However 19% of Maori children and young people lived in crowded households compared to 5.6% European. Crowding rates for Wairarapa children and young people were lower than the New Zealand Maori average.
- There were marked ethnic differences in educational attainment at school leaving during 1995 – 2006 with higher proportions of Maori than European leaving school with little or no formal attainment.
- No routine surveillance of overweight and obesity in New Zealand children and young people occurs at present.
- During 2006, 60.3% of Maori children were living in a household with a smoker, as compared to 37.5% of European children.
- Immunisation rates for Maori children were higher than the New Zealand Maori average.

## 9.1 Population – Children and Youth

At the time of the 2006 census the total resident Wairarapa Maori Child and Youth population aged 0-24 years was 2,973 people. This group makes up 54.1% of the total Wairarapa Maori population, and is slightly above the New Zealand Maori totals. The projections are that this population group will decrease by 5.6% by the year 2026.

### Wairarapa Maori Population for Age Groups 0-24 years – 2006 Census

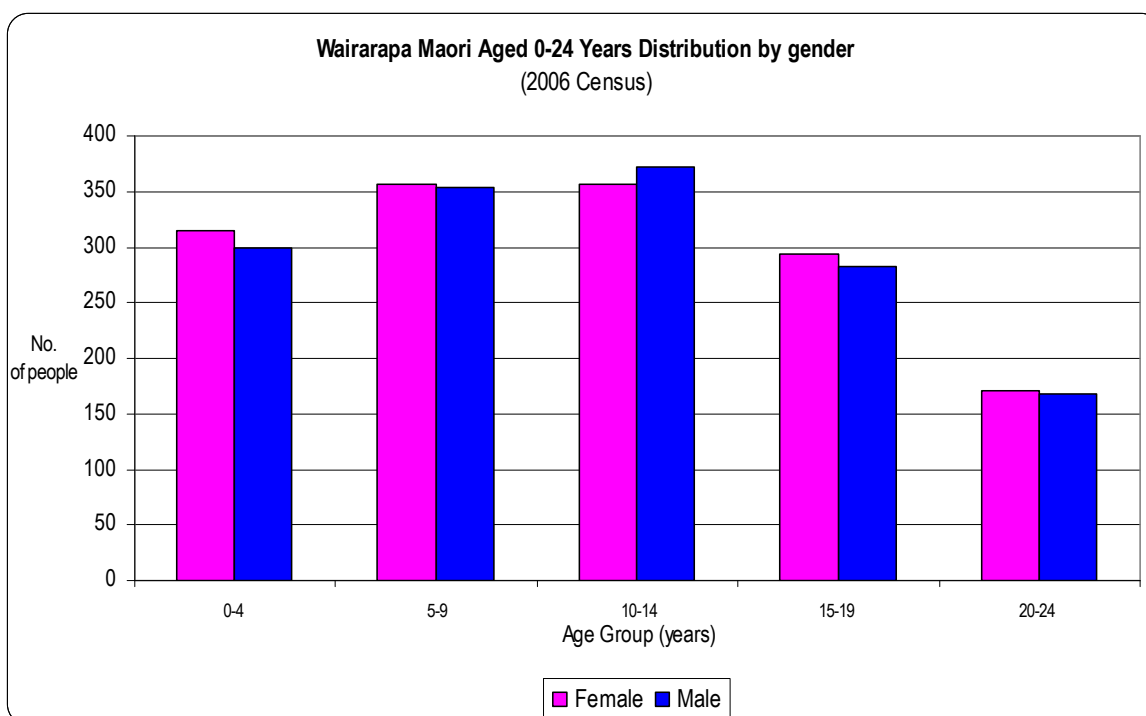
| Locations                    | Number of people Aged |              |              |
|------------------------------|-----------------------|--------------|--------------|
|                              | 0-14                  | 15-24        | Total        |
| South Wairarapa              | 399                   | 153          | 552          |
| Carterton                    | 267                   | 93           | 360          |
| Masterton                    | 1,395                 | 666          | 2,061        |
| <b>Total Wairarapa Maori</b> | <b>2,061</b>          | <b>912</b>   | <b>2,973</b> |
| Percentages                  |                       |              |              |
| <b>Wairarapa Maori</b>       | <b>37.5%</b>          | <b>16.6%</b> | <b>54.1%</b> |
| New Zealand Maori            | 35.4%                 | 17.9%        | 53.3%        |

Source: 2006 Census

### Wairarapa Maori Population Projection 2026 for Age Groups 0-24 years

|   | 2026 Percentages Aged |       |              |
|---|-----------------------|-------|--------------|
|   | 0-14                  | 15-24 | Total        |
| <b>Wairarapa Maori</b>                  | 32.2%                 | 16.3% | <b>48.5%</b> |
| Percentage change 2006 -2026 projection |                       |       |              |
| <b>Wairarapa Maori</b>                  | -5.3%                 | -0.3% | -5.6%        |

Source: Statistics New Zealand



## 9.2 Hospitalisations - Children and Youth

Between the year 2000 and 2006, there were a total of 5,037 hospitalisations of Wairarapa Maori children and youth aged 0-24 years. The following table shows the top ten causes of hospitalisations, comparing Wairarapa Maori to New Zealand Maori in the 0-24 year age group between the year 2000 and 2006. There is no significant difference between the Wairarapa and New Zealand percentages.

| International Classification of Disease (ICD10) Chapter | Maori Children and Youth |             |
|---|--------------------------|-------------|
|   | Wairarapa                | New Zealand |
| Factors influencing health                              | 21%                      | 20%         |
| Pregnancy complication                                  | 15%                      | 15%         |
| Respiratory system                                      | 15%                      | 13%         |
| Injury & poisoning                                      | 11%                      | 12%         |
| Digestive system  | 7%                       | 6%          |
| Infectious & parasitic diseases                         | 5%                       | 4%          |
| Ear & mastoid process                                   | 4%                       | 4%          |
| Perinatal conditions                                    | 4%                       | 5%          |
| Ill-defined conditions                                  | 3%                       | 4%          |
| Genitourinary system                                    | 3%                       | 3%          |
| Other Causes  | 12%                      | 14%         |
| <b>Total</b>  | <b>100%</b>              | <b>100%</b> |

## 9.3 Hospitalisations - Children and Youth by Gender

The most common cause of hospitalisations was due to factors influencing health (1,052 hospitalisations). Of this, there were 720 hospitalisations (68%) classed as ICD-10 code Z38, live-born infants according to place of birth. This refers to a newborn baby requiring admission to hospital immediately after birth or during the post natal period from the mother's bedside, whether born at hospital, home or elsewhere.

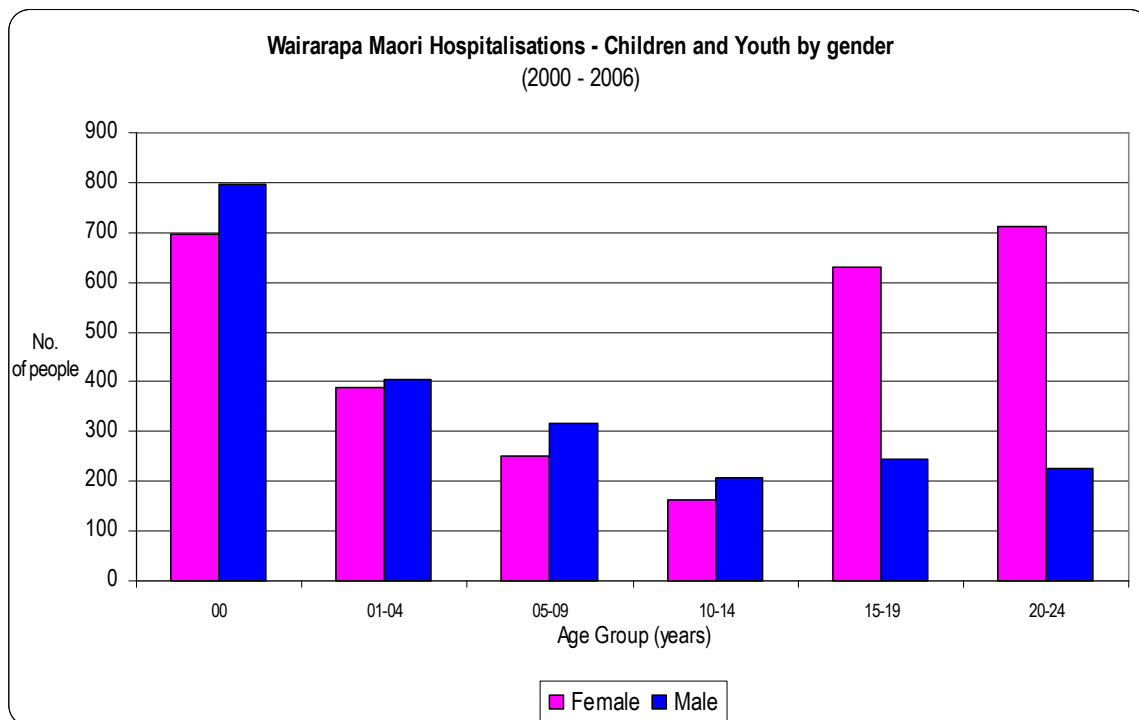
Some examples of this are:

- A baby is born prematurely at 35 weeks gestation and is admitted immediately following delivery for care and observation.
- A healthy baby is born on 1st June 2006 and is nursed by the mother's bedside. 36 hours later the baby develops jaundice and is admitted for phototherapy treatment.
- A mother brings her 10-day-old baby with high fever to A&E from home. The baby is admitted for IV antibiotics and observation.

The following table shows the top ten causes of hospitalisations of Wairarapa Maori in the 0-24 year age group, by gender, between the year 2000 and 2006.

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori Children and Youth |              |              |
|---|------------------------------------|--------------|--------------|
|   | Total                              | Female       | Male         |
| Factors influencing health                              | 1,052                              | 579          | 473          |
| Pregnancy complication                                  | 766                                | 766          | 0            |
| Respiratory system                                      | 739                                | 346          | 393          |
| Injury & poisoning                                      | 567                                | 202          | 365          |
| Digestive system  | 341                                | 168          | 173          |
| Infectious & parasitic diseases                         | 232                                | 111          | 121          |
| Ear & mastoid process                                   | 218                                | 109          | 109          |
| Perinatal conditions                                    | 202                                | 80           | 122          |
| Ill-defined conditions                                  | 169                                | 89           | 80           |
| Genitourinary system                                    | 139                                | 97           | 42           |
| Other Causes  | 612                                | 295          | 317          |
| <b>Total</b>  | <b>5,037</b>                       | <b>2,842</b> | <b>2,195</b> |

Although the most common cause of hospitalisations was due to factors influencing health, the most common cause of hospitalisations for Wairarapa Maori females only in the 15-24 year age group was due to pregnancy complications. This explains the sharp increase in hospitalisations for Wairarapa Maori females this age group in the graph below.



## 9.4 Hospitalisations - Children and Youth by Age Group

### Maori Children Aged 0-14 Years

There were a total of 3,223 hospitalisations of Wairarapa Maori in this age group between the year 2000 and 2006. The table below shows the majority were males (53%), compared to females (47%).

#### Top five hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |              |              |
|---|-------------------------|--------------|--------------|
|   | No. of Hospitalisations | Female       | Male         |
| Factors influencing health                              | 861                     | 430          | 431          |
| Respiratory system                                      | 665                     | 295          | 370          |
| Injury & poisoning                                      | 284                     | 126          | 158          |
| Digestive system  | 263                     | 120          | 143          |
| Ear & mastoid process                                   | 214                     | 105          | 109          |
| Other Causes  | 936                     | 423          | 513          |
| <b>Total</b>  | <b>3,223</b>            | <b>1,499</b> | <b>1,724</b> |

## Maori Youth Aged 15-24 Years

There were 1,814 hospitalisations of Wairarapa Maori Youth between the year 2000 and 2006. Hospitalisations due to pregnancy complications accounted for 57% of the Wairarapa Maori female total in this age group. Excluding pregnancy complications, there were 578 Wairarapa Maori female hospitalisations compared with 471 Wairarapa Maori male in this age group.

### Top five hospitalisations

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori         |              |            |
|---|-------------------------|--------------|------------|
|   | No. of Hospitalisations | Female       | Male       |
| Pregnancy complication                                  | 765                     | 765          | 0          |
| Injury & poisoning                                      | 283                     | 76           | 207        |
| Factors influencing health                              | 191                     | 149          | 42         |
| Genitourinary system                                    | 85                      | 77           | 8          |
| Mental disorders  | 84                      | 33           | 51         |
| Other Causes  | 406                     | 243          | 163        |
| <b>Total</b>  | <b>1,814</b>            | <b>1,343</b> | <b>471</b> |

## 9.5 Mortality - Children and Youth

Between the year 1994 and 2004 there were a total of 31 deaths of Wairarapa Maori Children and Youth aged 0-24 years.

### Wairarapa Maori Children Aged 0-14 Years

A total of 24 deaths of Wairarapa Maori children aged 0-14 years occurred between 1994 and 2004. The leading cause of death was due to External causes which was 14% higher for Wairarapa Maori compared to New Zealand Maori. These deaths were mainly due to accidental suffocation and strangulation in bed (22%) and Assault (homicide) by sharp object (22%).

### Top five causes

| International Classification of Disease (ICD10) Chapter | Wairarapa Maori |             | New Zealand Maori |
|---|-----------------|-------------|-------------------|
|   | No. of Deaths   | %           | %                 |
| External causes   | 9               | 38%         | 24%               |
| Perinatal conditions                                    | 5               | 21%         | 20%               |
| Congenital anomalies                                    | 3               | 13%         | 13%               |
| Ill-defined conditions                                  | 3               | 13%         | 24%               |
| Respiratory system                                      | 2               | 8%          | 5%                |
| Other Causes  | 2               | 7%          | 14%               |
| <b>Total</b>  | <b>24</b>       | <b>100%</b> | <b>100%</b>       |

### Wairarapa Maori Youth Aged 15-24 Years

Between 1994 and 2004 there were a total of 7 deaths of Wairarapa Maori Youth aged between 15-24 years of age. The majority were due to External causes which were mainly due to car accidents.

## 9.6 The Health of Children and Young People in the Wairarapa Report - 2007

The following is taken from the report titled “The Health of Children and Young People in the Wairarapa”. This Report was prepared for the Wairarapa DHB by Elizabeth Craig, Catherine Jackson and Dug Yeo Han on behalf of the New Zealand Child and Youth Epidemiology Service, November 2007. The tables and graphs below are numbered as they appear in the original report.

## 9.7 Individual and Whanau Health and Wellbeing

### 9.7.1 Low Birth Weight: Small for Gestational Age and Preterm Birth

#### Introduction

Low Birth Weight (LBW) defined as a birth weight <2,500g, is determined by two factors, the duration of gestation and fetal growth. Babies are born LBW either because they are preterm (<37 weeks) or because they have failed to grow adequately in utero.

#### Definitions

- Small for Gestational Age: Infants with a birth weight below the 10th percentile for their gestational age.
- Preterm Birth: Infants born at less than 37 weeks gestation

#### Ethnic Differences

In New Zealand during 2002-2006, rates of Small for Gestational Age (SGA) were highest among Asian / Indian and Maori babies and those living in the most deprived areas. During the same period, rates of preterm birth were highest among Maori babies, males and those in the most deprived areas. In the Wairarapa during 1996-2006, numbers made interpretation of ethnic differences in SGA and preterm birth difficult (Figure 94) (Figure 95)

Figure 94. Rates of Small for Gestational Age by Infant's Ethnic Group, the Wairarapa vs. New Zealand Singleton Live Births 1996-2006

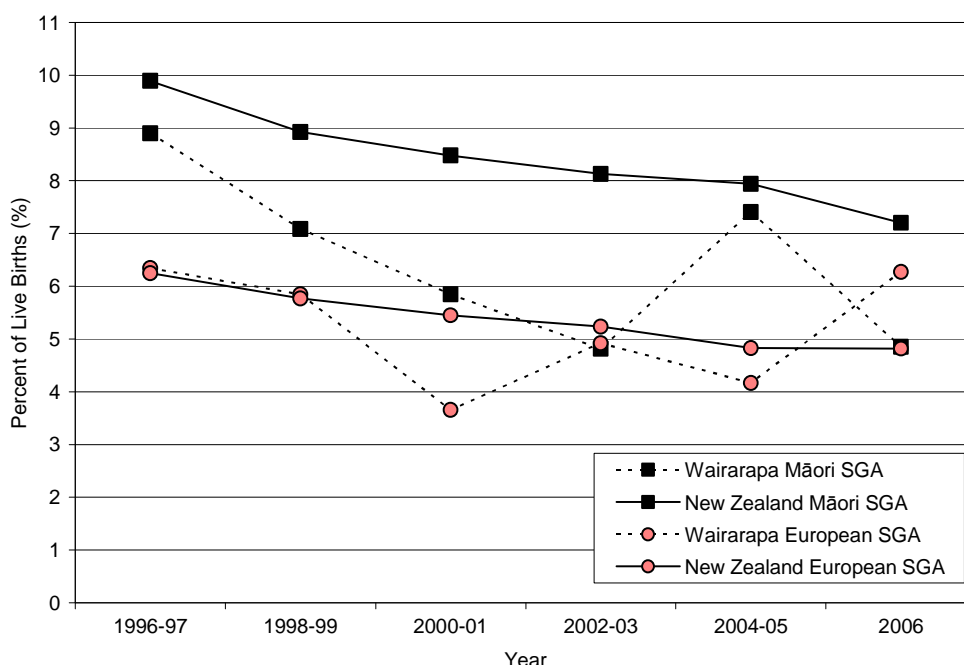
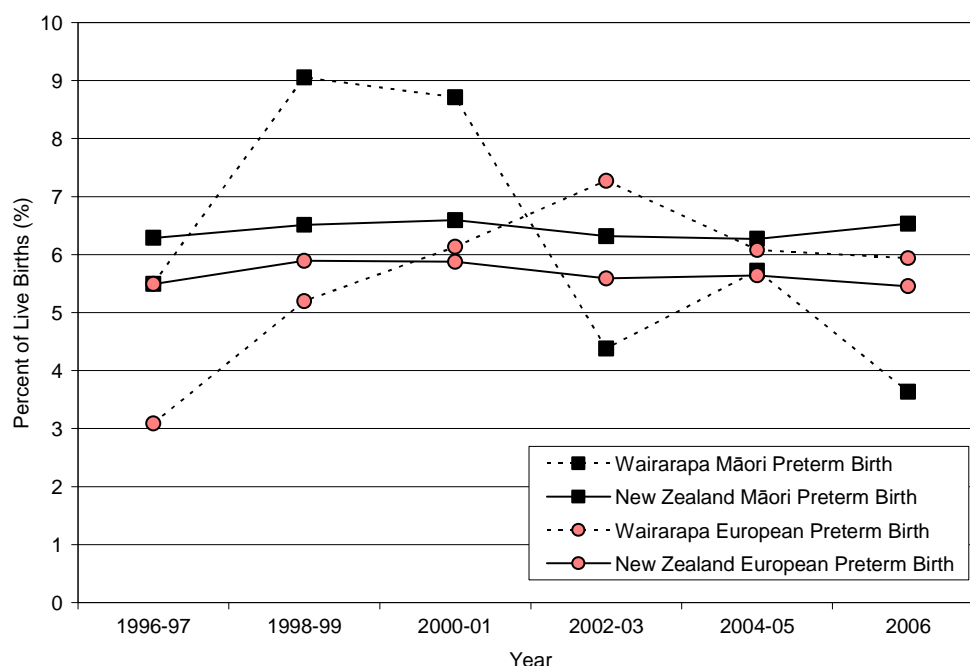


Figure 95. Rates of Preterm Birth by Baby's Ethnic Group, the Wairarapa vs. New Zealand Singleton Live Births 1996-2006



## 9.7.2 Infant Mortality

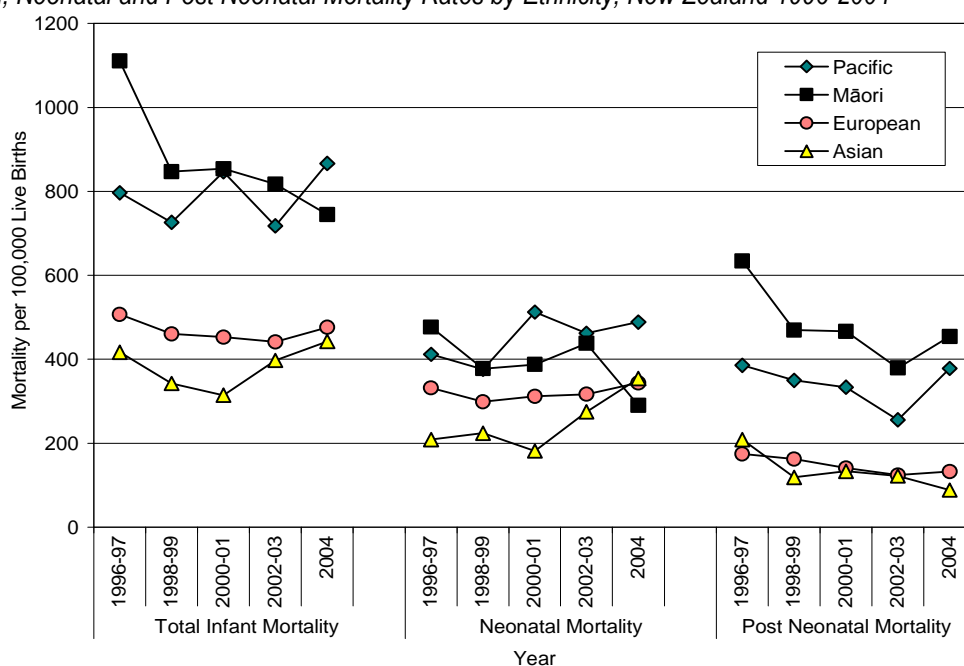
### New Zealand and Wairarapa Distribution and Trends

#### Total Infant Mortality

Mortality during the first year of life is higher than at any other point during childhood or adolescence. In New Zealand during 1990-2004, deaths due to Sudden Infant Death Syndrome (SIDS) and congenital anomalies have continued to decline, while deaths due to extreme prematurity and other perinatal conditions, after initial declines, have seen small increases.

In the Wairarapa during this period, while small numbers made precise interpretation of trends difficult, in general total and post-neonatal mortality rates declined.

Figure 1. Total, Neonatal and Post Neonatal Mortality Rates by Ethnicity, New Zealand 1996-2004



### Neonatal Mortality

In New Zealand during 2000-2004, the most frequent causes of neonatal mortality were extreme prematurity and congenital anomalies, with anomalies of the cardiovascular and central nervous system playing a particularly prominent role. Birth asphyxia however, was also a relatively important cause of neonatal death. In the Wairarapa during this period, the pattern was similar, with extreme prematurity being the leading cause of neonatal mortality (Table 31).

### Post-Neonatal Mortality

In New Zealand during 2000-2004, the most frequent causes of post-neonatal mortality were SIDS, followed by congenital anomalies and injury, although conditions arising during the perinatal period still also played a role. In addition, a large number of babies were identified as dying as a result of suffocation or strangulation in bed, although it is possible that some of these may have been coded as SIDS cases in previous years.

In the Wairarapa during this period, small numbers made precise interpretation of mortality figures difficult (Table 35). Mortality was greatest during the first 6 months of life, with progressively fewer deaths occurring as infants approached 1 year of age. During the same period, risk of Sudden Unexpected Death in Infancy (SUDI) was significantly higher for Maori and Pacific infants and those living in the most deprived areas.

## 9.7.3 Oral Health

### New Zealand and Wairarapa Distribution and Trends

#### Fluoridation Status

During 2006, The School Dental Service data indicate that 43.8% of Wairarapa children aged 5 years had access to fluoridated water. This information is based on the fluoridation status of the child's school however, rather than the area in which they lived.

The School Dental Service was established in 1921 and currently provides basic preventative and restorative dental care for preschoolers and primary and intermediate school children via its team of dental therapists.

#### Ethnic Differences

During 2004-2006, marked ethnic differences in oral health status were also evident in the Wairarapa, with a lower proportion of Maori children being caries free at 5 years, and Maori children having higher mean DMFT scores at 12 years, in both fluoridated and non-fluoridated areas (Figure 109, Figure 110).

Figure 109. Percentage of Children Caries Free at 5 Years by Ethnicity, the Wairarapa vs. New Zealand 2004-2006

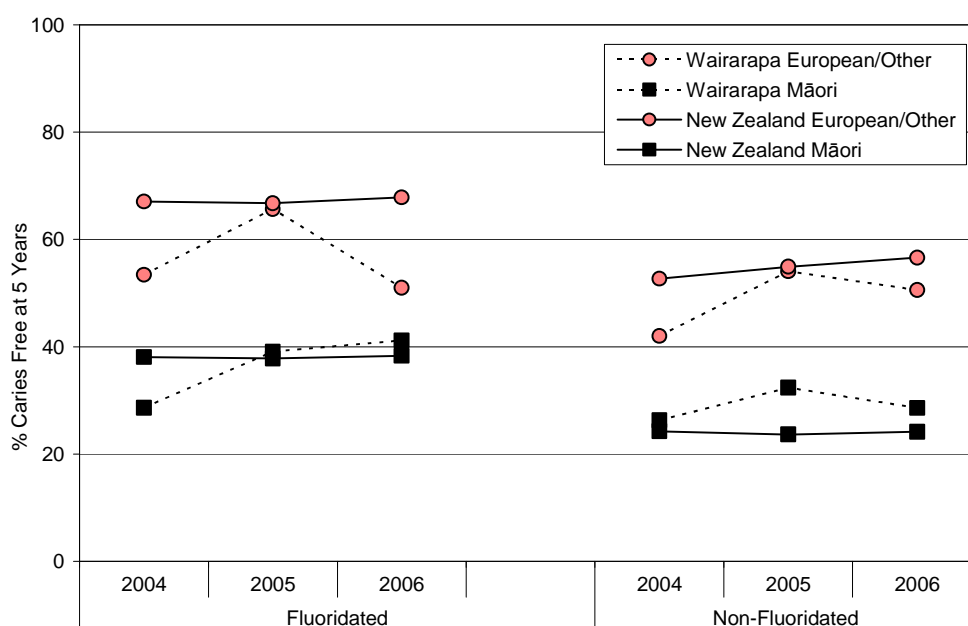
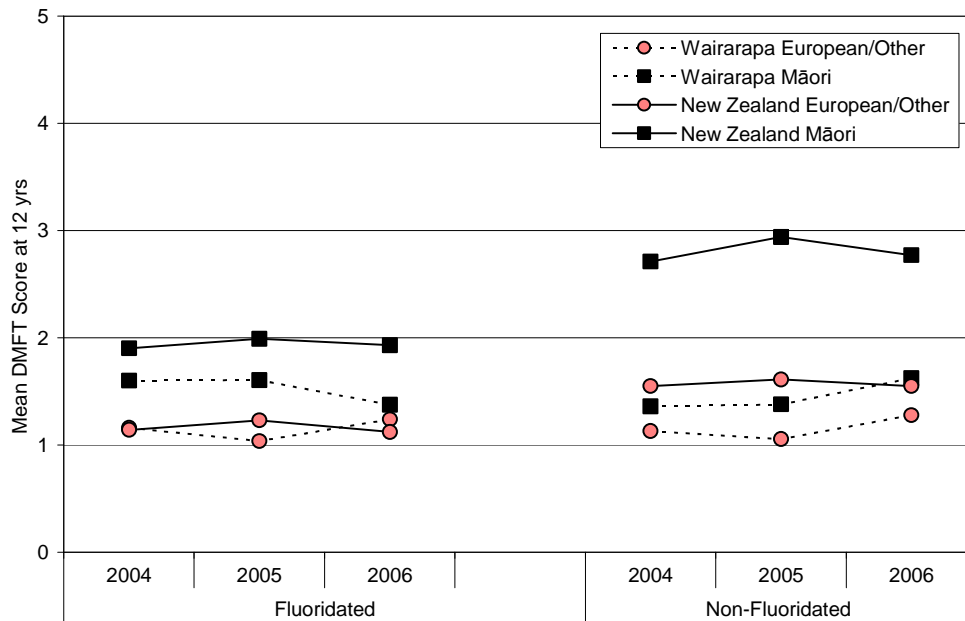


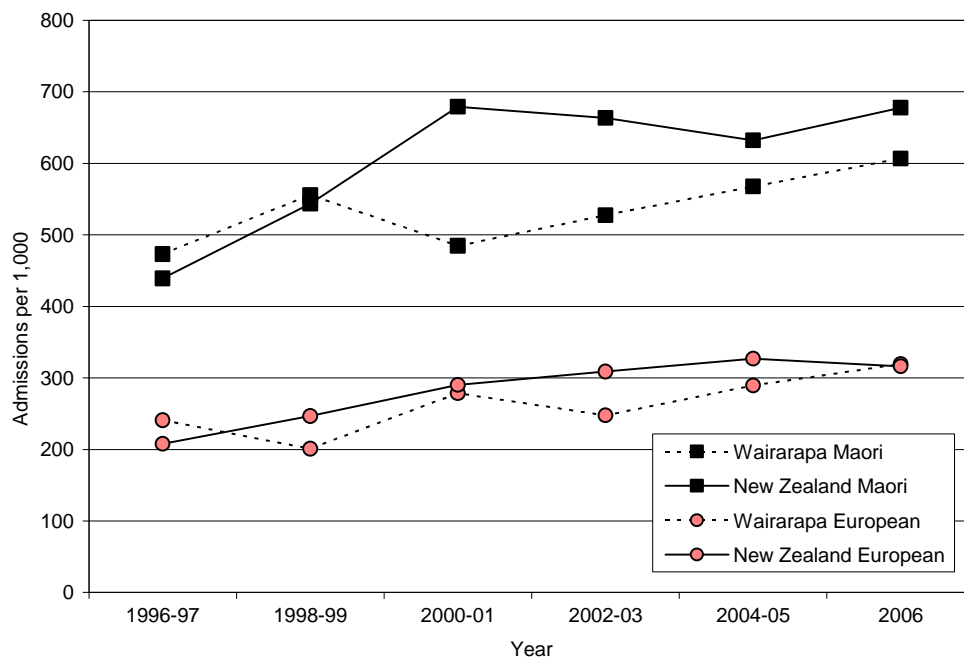
Figure 110. Mean DMFT Scores at 12 Years by Ethnicity, the Wairarapa vs. New Zealand 2004-2006



### 9.7.4 Serious Bacterial Infections

During 1996-2006, while hospital admission rates increased for both Wairarapa Maori and European children and young people, rates remained consistently higher for Maori children and young people during this period (Figure 135).

Figure 135. Hospital Admissions for Serious Bacterial Infections in Children and Young People 0-24 Years by Ethnicity, the Wairarapa vs. New Zealand 1996-2006



## 9.7.5 Lower Respiratory Tract Morbidity and Mortality in Children

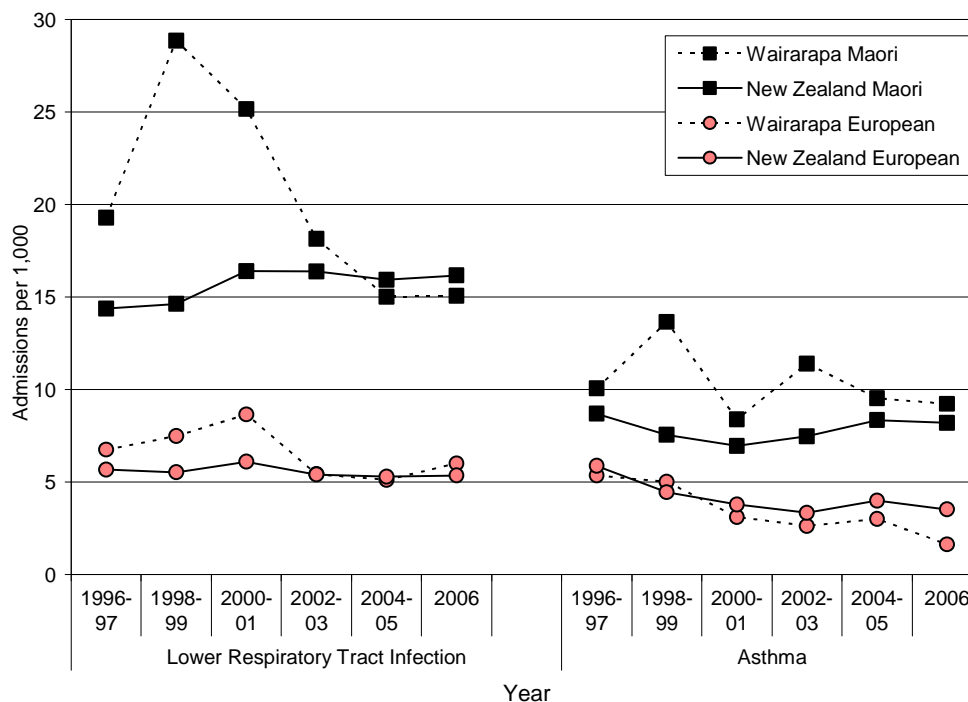
### Introduction

In New Zealand, a recent review has suggested that a large burden of avoidable morbidity and mortality in childhood can be attributed to respiratory diseases, with conditions such as whooping cough, pneumonia, bronchiolitis, TB and smoking related illnesses all being of major concern for New Zealand children and young people. In addition, the same review highlighted the significant contribution poor housing, poverty, poor nutrition, issues with access to primary, secondary and tertiary care, smoking and air pollution make to the burden of childhood respiratory disease in this country.

### New Zealand and Wairarapa Ethnicity Trends

In the Wairarapa during 1996-2006, hospital admissions for both lower respiratory tract infections and asthma were higher amongst Maori children (Figure 161)

Figure 161. Hospital Admissions for Lower Respiratory Tract Infections and Asthma in Children 0-14 Years by Ethnicity, the Wairarapa vs. New Zealand 1996-2006



## 9.7.6 Suicide and Self Harm

Please refer to the Mental Health chapter of the Wairarapa Maori Health Needs Assessment which includes information on Youth Self Harm and Suicide.

## 9.7.7 Teenage Pregnancy

### Introduction

While New Zealand's teenage birth rates have declined in recent years and the number of therapeutic abortions has increased steadily. By 2003 for every woman giving birth in her teenage years, there was one therapeutic abortion. Teenage birth rates are highest amongst Māori, followed by Pacific People and then European women.

### Wairarapa Distribution and Trends

During 1990-2006, the Wairarapa teenage birth rates were higher than the New Zealand average (Figure 202). During 1996-2006, teenage birth rates in the Wairarapa were also higher amongst Māori women, although teenage birth rates for both Wairarapa Māori and European women were similar to their respective NZ ethnic specific averages (Figure 203).

Figure 202. Teenage Birth Rates, the Wairarapa vs. New Zealand 1990-2006

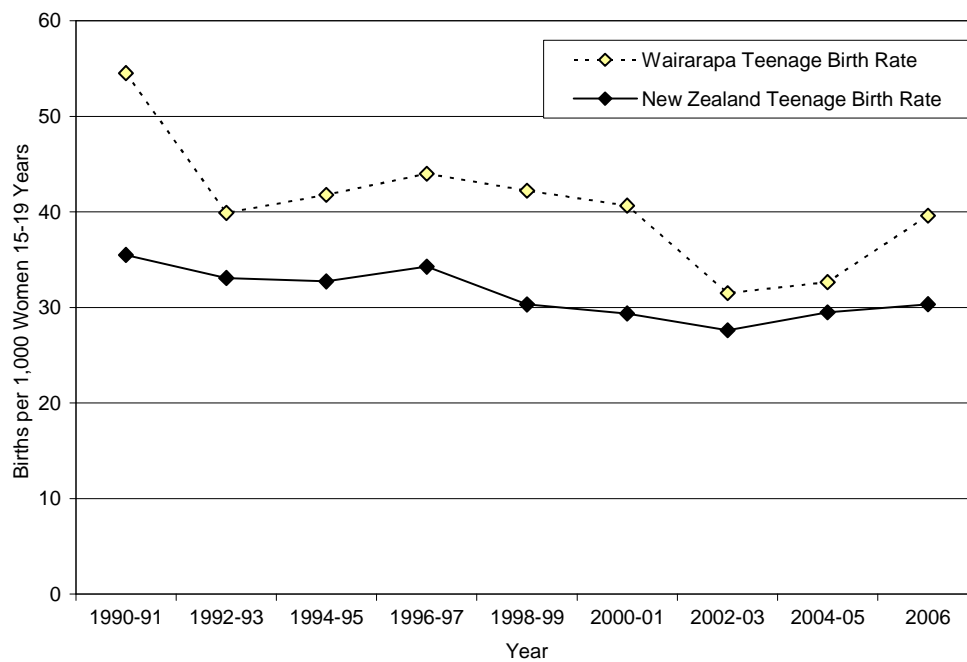
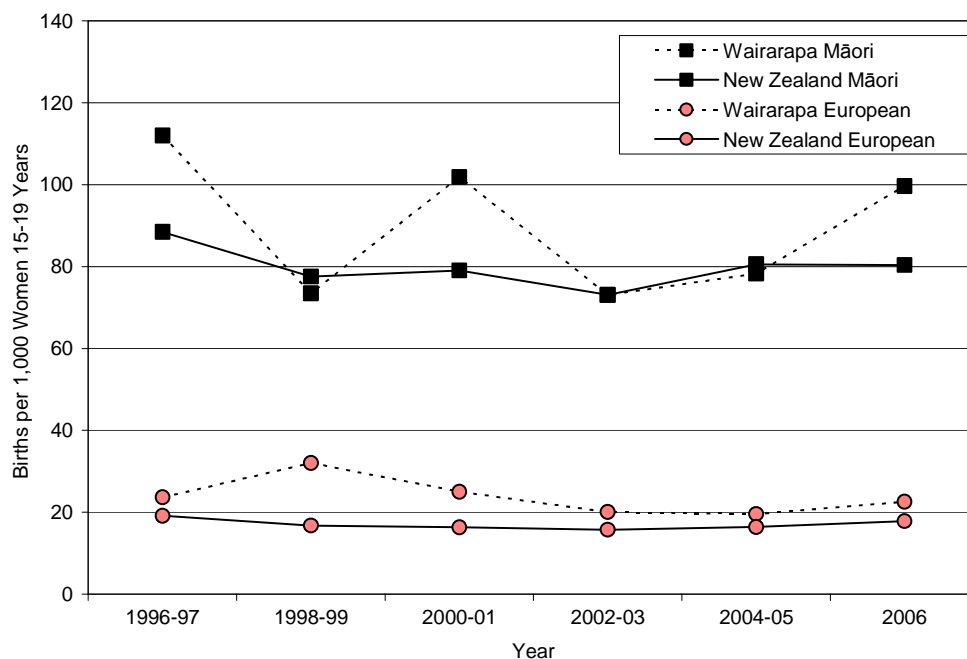


Figure 203. Teenage Birth Rates by Maternal Ethnic Group, the Wairarapa vs. New Zealand 1996-2006



## 9.8 Socioeconomic and Cultural Determinants

### 9.8.1 Enrolments in Kura Kaupapa Maori

#### Introduction

Cultural identity is a critical component of positive Maori development. It has been suggested that if someone identifies as Maori but is unable to access Maori language, custom, land, marae, whanau or community networks then it is unlikely that their cultural identity will be secure. A secure identity in turn is positively linked to health status, educational achievement and emotional and social adjustment [27]. In developing a set of indicators to assess outcomes for Maori, knowledge of whakapapa, use of marae and the practice of Maori values were seen as important cultural elements, but te reo Maori was regarded as fundamental and of sufficient importance to warrant consideration as a separate outcome in its own right. While not all agreed that it was critical for wellbeing, most identified te reo Maori as the single most defining characteristic of being Maori.

In New Zealand, Kura Kaupapa Maori schools are total immersion schools designed by Maori for Maori which follow a curriculum that validates Maori knowledge, structures, processes, learning styles and learning practices. They offer a school environment that is immersed holistically in the Maori language and culture. Kura Kaupapa Maori are regarded as a key part of the strategy to assist in revitalising the Maori language and improving the participation and achievement levels of Maori in schooling. Their origins can be traced back to the 1970s, when aspects of Maori language and culture began to be included in mainstream (English-medium) programmes, although they were usually delivered within the context of a westernised curriculum and in the English language. During the 1980s, schools and bilingual units (classes within schools) became established, with the expectation that they would deliver the curriculum in Maori and English. During this period, Kohanga reo (Maori language and culture preschools) also began to emerge, in response to the perceived need to provide for the regeneration of the Maori language and culture, as well as the autonomy to deliver a curriculum along cultural lines. As the number of Kohanga Reo graduates grew, parental demand resulted in the growth of bilingual and Maori immersion units within the primary and secondary school sector. While early Kohanga Reo and Kura Kaupapa Maori were privately funded, Kura Kaupapa Maori were officially recognised as legitimate schools in 1989 when they were incorporated into the state education system and hence eligible for state funding. Today Maori medium education takes place across the educational spectrum from pre-school to tertiary including:

1. Kohanga reo and other bilingual and immersion programmes in the early childhood sector
2. Kura Kaupapa Maori (Years 1-8) and wharekura (Years 1-13)
3. Immersion and other bilingual programmes in mainstream schools
4. Wananga in the tertiary sector

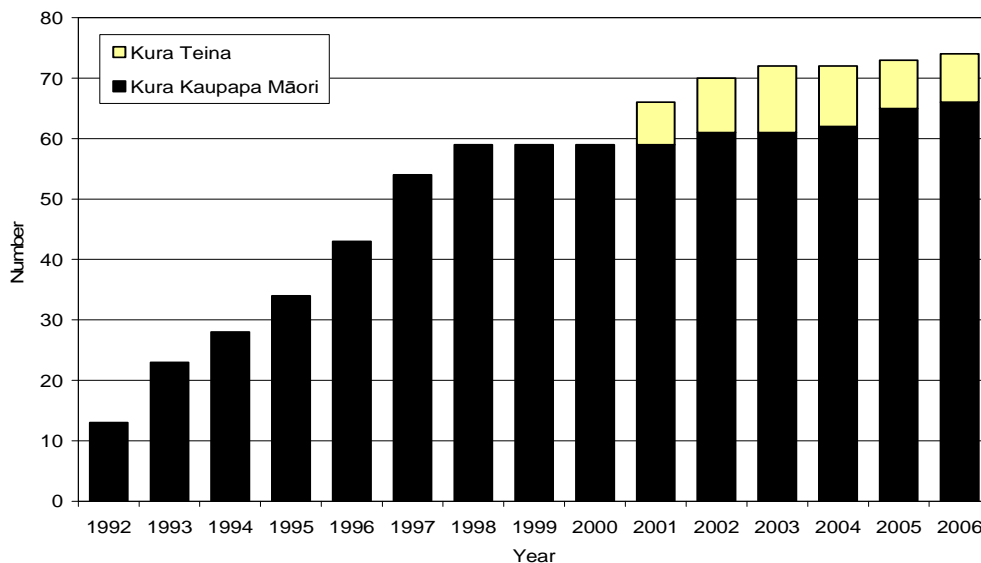
The following section uses Ministry of Education data to explore the number of children and young people enrolled in Maori medium education during 1992-2006. While it is unlikely that monitoring enrolments in Maori medium education captures the full diversity of Maori language proficiency, it is nevertheless hoped that the figures contained in this section will serve as a crude proxy for measuring progress towards improving Maori language proficiency amongst New Zealand's children and young people.

### 9.8.2 Kura Kaupapa Māori and Kura Teina in NZ

Kura kaupapa Maori are schools where the teaching is in the Maori language and the school's aims, purposes and objectives reflect the Te Aho Matua philosophy. Kura teina is an initiative by a community which wants to become a kura kaupapa Maori and has prepared a business case and been formally accepted by the Ministry of Education into the establishment process. During this establishment phase, kura teina are attached to and mentored by an established high performing kura kaupapa Maori. Prior to 2001, kura teina were not counted as separate schools.

In New Zealand since 1992, there has been a 5.7-fold increase in the number of kura kaupapa Maori and kura teina, with numbers increasing from 13 in 1992 to 74 in 2006. The most dramatic increases occurred during the 1990s and since then the rate of growth has slowed, with a 25% increase in the number of schools since 2000 (**Figure 2**). Over the same period, the number of children enrolled in kura kaupapa Maori and kura teina has increased by 24%, from 4,964 in 2000 to 6,160 in 2006. In the Wairarapa during 2005, there was 1 kura kaupapa Maori, which enrolled a total of 110 students (**Table 1**).

Figure 2. Number of Ministry of Education Funded Kura Kaupapa Maori and Kura Teina, New Zealand 1992-2006



Source: Ministry of Education. Note: Prior to 2001 Kura Teina were not counted as separate schools

Table 1. Number of Ministry of Education Funded Kura Kaupapa Māori and Kura Teina by District Health Board, New Zealand 2005

| DHB Region         | Number of Schools  |            | Number of Students |            |
|--------------------|--------------------|------------|--------------------|------------|
|                    | Kura Kaupapa Māori | Kura Teina | Kura Kaupapa Māori | Kura Teina |
| Northland          | 8                  | 0          | 807                | 0          |
| Waitemata          | 4                  | 0          | 379                | 0          |
| Auckland           | 2                  | 0          | 120                | 0          |
| Counties Manukau   | 4                  | 2          | 482                | 60         |
| Waikato            | 8                  | 2          | 921                | 81         |
| Lakes              | 4                  | 1          | 421                | 28         |
| Bay of Plenty      | 8                  | 1          | 634                | 11         |
| Tairāwhiti         | 6                  | 1          | 271                | 51         |
| Taranaki           | 3                  | 0          | 151                | 0          |
| Hawke's Bay        | 5                  | 0          | 434                | 0          |
| MidCentral         | 3                  | 1          | 289                | 20         |
| Whanganui          | 3                  | 0          | 243                | 0          |
| Capital and Coast  | 1                  | 0          | 120                | 0          |
| Hutt               | 1                  | 0          | 185                | 0          |
| Wairarapa          | 1                  | 0          | 110                | 0          |
| Nelson Marlborough | 0                  | 0          | 0                  | 0          |
| West Coast         | 0                  | 0          | 0                  | 0          |
| Canterbury         | 2                  | 0          | 225                | 0          |
| South Canterbury   | 0                  | 0          | 0                  | 0          |
| Otago              | 1                  | 0          | 27                 | 0          |
| Southland          | 1                  | 0          | 111                | 0          |
| <b>NZ Total</b>    | <b>65</b>          | <b>8</b>   | <b>5,930</b>       | <b>251</b> |

Source: Ministry of Education.

### 9.8.3 Maori Medium Education in New Zealand

While kura kaupapa Maori and kura teina offer a Maori language immersion environment, a number of other New Zealand schools offer some of their curriculum in Maori, with the degree of Māori medium learning often being divided

into 4 levels: Level 1: 81-100%; Level 2: 51-80%; Level 3: 31-50%; Level 4(a): up to 30%. Thus a number of New Zealand students also have access to some of their educational curriculum in the Maori language, as a result of attending a bilingual school or an immersion / bilingual class in a primary or secondary school setting.

#### 9.8.4 Kura Kaupapa Maori Summary

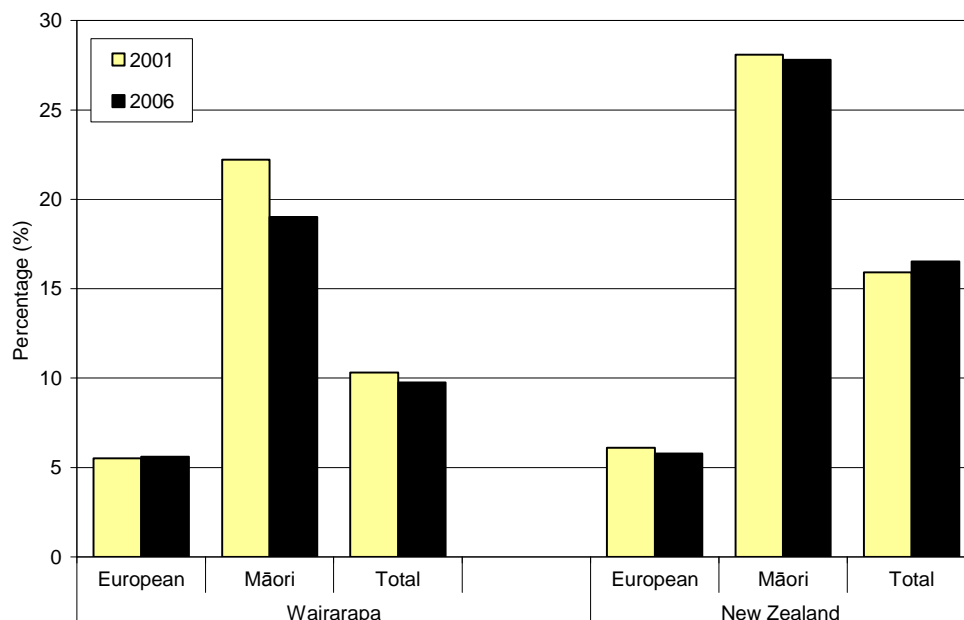
Cultural identity is a critical component of positive Maori development and has been positively linked with health, educational achievement and emotional and social adjustment. In New Zealand, kura kaupapa Maori are total immersion schools which follow a curriculum that validates Maori knowledge, learning styles and practices and are key to revitalising the Maori language and improving the achievement levels of Maori students. Since 1992, there has been a 5.7-fold increase in the number of kura kaupapa Maori and kura teina, with the number of children enrolled increasing from 4,964 in 2000 to 6,160 in 2006. It is hoped that the ongoing growth of kura kaupapa Maori and other schools incorporating Maori language in their teaching will continue to foster the use of Maori language amongst New Zealand children and young people and as a consequence, further enhance positive cultural identity.

#### 9.8.5 House Crowding

The associations between substandard housing and poor health have been known for several centuries, with reports from as early as the 1830s attributing high rates of infectious disease to overcrowded, damp, and poorly ventilated housing. In New Zealand, crowding is strongly correlated with meningococcal disease, while overseas reports also demonstrate correlations with a number of infectious diseases and mental health issues.

In the Wairarapa during 2006, 9.8% of children and young people (0-24 yrs) lived in crowded households, as compared to 16.5% nationally. There were also marked ethnic differences in household crowding in the Wairarapa, with 19.0% of Maori children and young people living in crowded households, as compared to 5.6% of European children and young people. While similar ethnic differences were seen nationally, crowding rates for Wairarapa Maori children and young people were lower than the NZ Maori average (Figure 19).

Figure 19. Proportion of Children and Young People 0-24 Years Living in a Crowded Household by Ethnicity, the Wairarapa vs. New Zealand Census 2001, 2006



Note: Only includes children and young people where crowding status was known

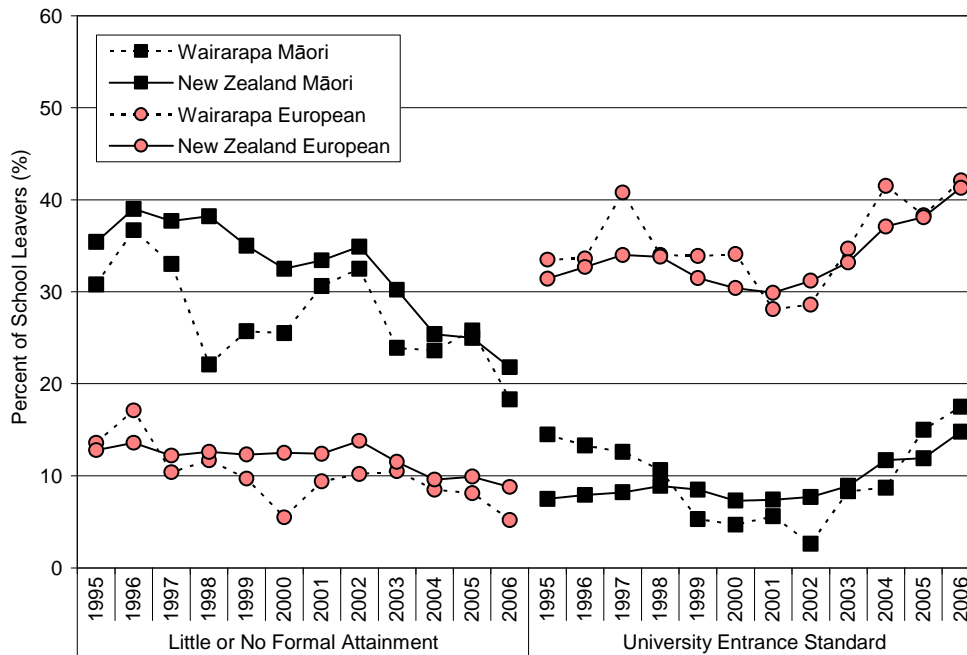
### 9.8.6 Educational Attainment at School Leaving

In New Zealand during the past decade, educational attainment at school leaving has fluctuated, in part as a result of changes in prevailing labour force conditions and the availability of alternative forms of tertiary education. While there have been marked increases in the proportion of students achieving a University Entrance Standard since the introduction of the NCEA, care must be taken when interpreting these trends, as the old and new qualification structures may not be strictly comparable.

#### Ethnic Specific Trends in the Wairarapa

In the Wairarapa during 1995-2006, there were marked ethnic differences in educational attainment at school leaving, with higher proportions of Maori young people leaving school with little or no formal attainment and higher proportions of European young people leaving school with a UE standard. Again interpretation of time series data must take into account the staged introduction of the NCEA, which began during 2002 (Figure 36).

Figure 36. Highest Attainment of School Leavers by Ethnic Group, the Wairarapa 1995-2006



For the Wairarapa these findings have significant implications, as unless such disparities can be addressed it is likely that interventions aimed at addressing health inequalities amongst the next generation of Wairarapa children and young people will fail to achieve long term success.

## 9.8.7 Primary Health Care Provision and Utilisation

### Introduction

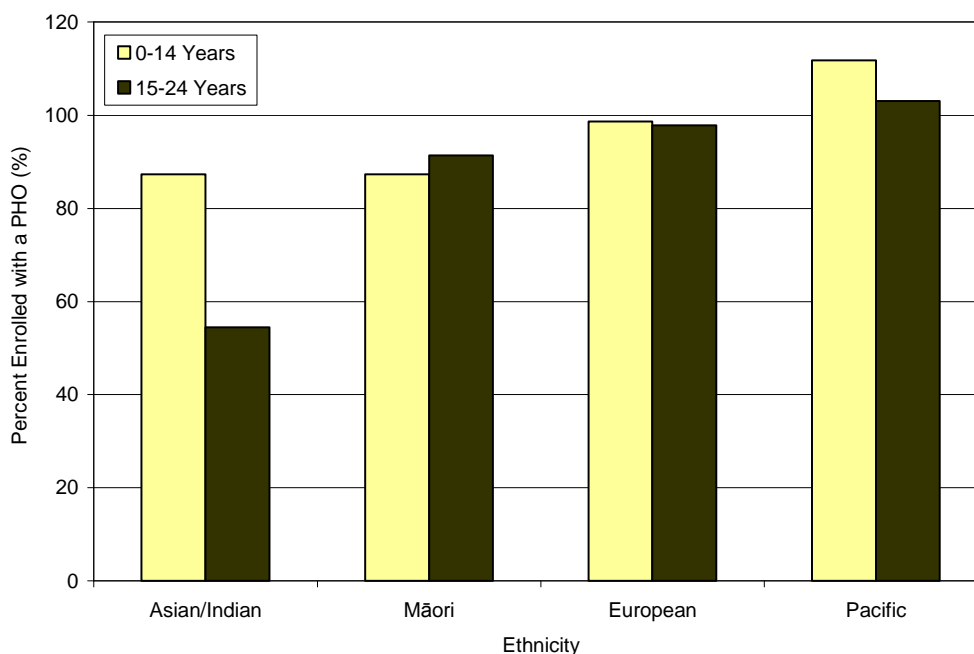
New Zealand's Primary Health Care Strategy identifies a strong primary health care system as being central to improving the health of New Zealanders and tackling inequalities in health. Its vision is for people to become a part of local primary health care services that improve their health, are easy to get to, and that co-ordinate their ongoing care. This vision involves a new direction for primary health care with a greater emphasis on population health and the role of the community and which includes a shift to funding based on population needs rather than fees for service.

### Primary Health Organisation Enrolment

In the last quarter of 2007, children aged <1 year of age had the lowest PHO enrolment rate (75.0%). Enrolment rates were lower in young people than in children, dropping from close to 100% in those aged 1-9 years old, to 91.8-94.8% in 20-24 year old women and 83.9-89.1% in 20-24 year old men. Prior to age 16 years, PHO enrolment rates in males and females were similar. In addition, at this time, PHO enrolments were higher in Pacific > European > Māori > Asian/Indian children and young people. Enrolment rates were lowest in Asian/Indian young people 15-24 years (54.4%) (**Figure 48**).

The Wairarapa Community PHO has been operational from 1 January 2004. The Wairarapa has only one PHO which includes all general practices and offers services to all of the Wairarapa District Health Board's population. Since July 2005 there has been a steady increase in enrolments with almost all of the Wairarapa population being enrolled.

Figure 48. Proportion of Children and Young People 0-24 Years Enrolled with a PHO by Age and Ethnicity, New Zealand 2006



### Summary (PHO)

Primary Health Organisations (PHOs) have become the primary vehicle through which first-level health services are accessed. Enrolment with a PHO is voluntary, however confers the benefits of continuity of care and is likely to be associated with lower consultation costs.

The most common barrier to accessing a GP in children and young people was cost. Participation in Well Child visits is optional, but recommended by the New Zealand Ministry of Health. No register of Well Child visits exists; therefore the proportion of New Zealand children who attend Well Child visits is unknown. Plunket is the leading Well Child Provider in New Zealand and enrolls over 90% of infants born in New Zealand. Of those children enrolled with Plunket, Māori and Pacific children and those living in the more deprived areas are less likely to attend core Well Child visits, with participation also decreasing with increasing age. Those living in the most deprived areas, however, attend more additional visits, and on average receive a greater total number of Well Child visits than those living in more affluent areas. The Well Child Framework is currently under review with a view to evaluating its implementation, and considering future directions and improvement of linkages with primary health care and other related services.

## 9.9 Risk and Protective Factors

### 9.9.1 Breastfeeding

Breastfeeding meets a term infant's nutritional needs for the first 4-6 months of life, as well as providing protection against a wide range of infections and non-infectious diseases. In New Zealand breastfeeding rates were high during the 1920s and 1930s, but progressive declines during the 1940s, 1950s and 1960's, saw rates reached their lowest point in the late 1960s.

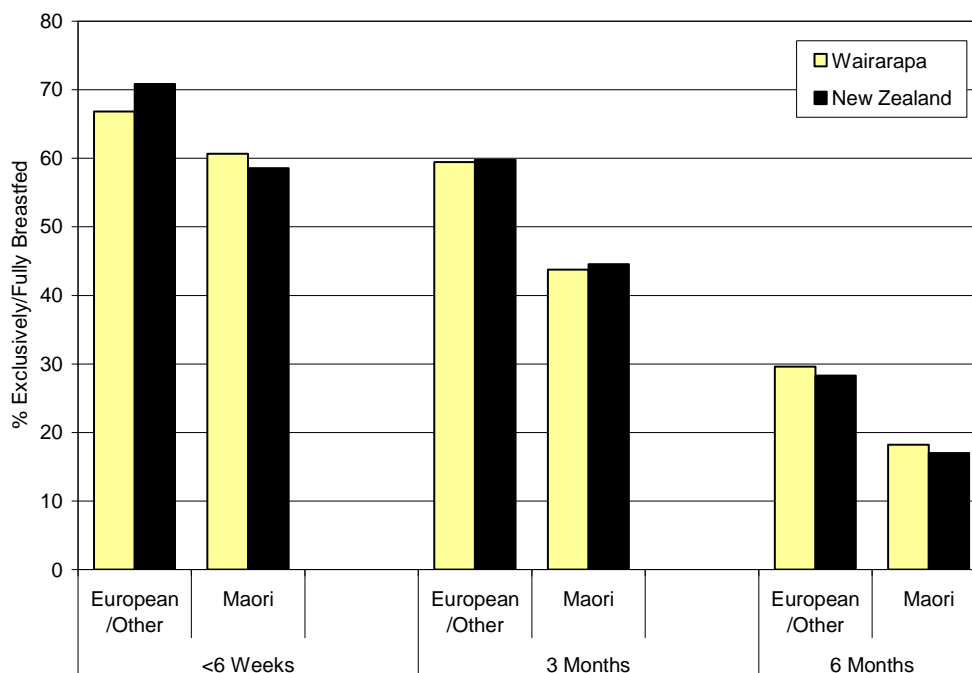
During 2006, breastfeeding rates at <6 weeks were highest amongst European / Other women and lowest amongst Asian women. At 3 and 6 months however, breastfeeding rates were highest for European / Other women and lowest for Maori women, with a marked tapering off in exclusive / full breastfeeding rates for all ethnic groups as infants age increased. There were also marked socioeconomic differences in the proportion of babies exclusively or fully breastfed during this period, with rates at all three ages being higher for babies living in the most affluent areas.

#### Breastfeeding Rates in the Wairarapa

The "Baby Friendly Community" pilot programme, one of six in New Zealand, has opened up new rooms for breastfeeding in Masterton and Wairarapa DHB.

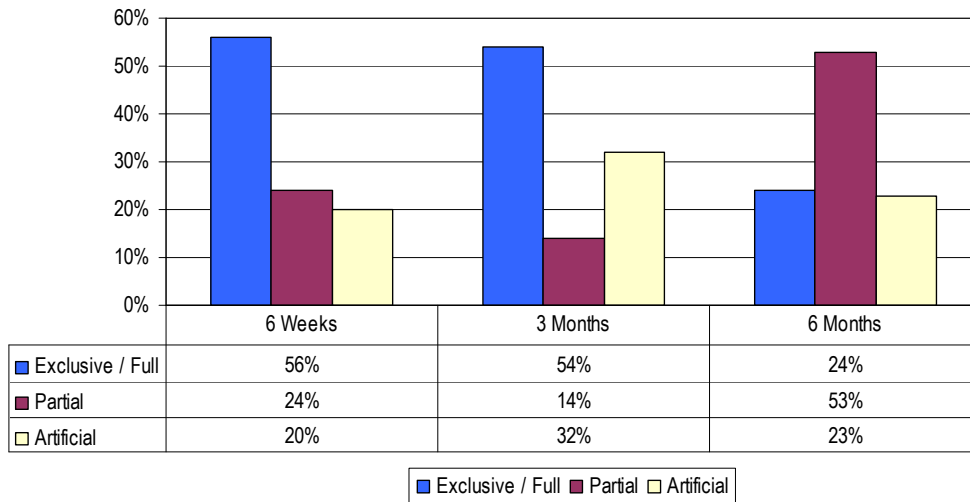
During the June 2005-2006 year, breastfeeding rates at 6 weeks, 3 months and 6 months in the Wairarapa were higher amongst European women, although rates for both of Wairarapa's largest ethnic groups were similar to their respective NZ ethnic specific averages. In addition, there was a marked tapering off in exclusive / full breastfeeding rates for both ethnic groups as infant's age increased. Thus during 2005-2006, none of the Wairarapa's largest ethnic groups achieved the MOH's 2005 breastfeeding targets of 74% at 6 weeks, although European women achieved the MOH's targets of 57% at 3 months and 21% at 6 months of age.

Figure 57 . Percentage of Plunket Babies who were Exclusively or Fully Breastfed by Age and Ethnicity, the Wairarapa vs. New Zealand in the Year Ending June 2006



The following graph shows percentage of Wairarapa Maori Plunket Babies who were Exclusively, Fully or Partially Breastfed or artificially fed by age between July and December 2007.

**Plunket Breastfeeding Rates - Wairarapa Maori**  
July to December 2007 inclusive



## 9.9.2 Overweight and Obesity

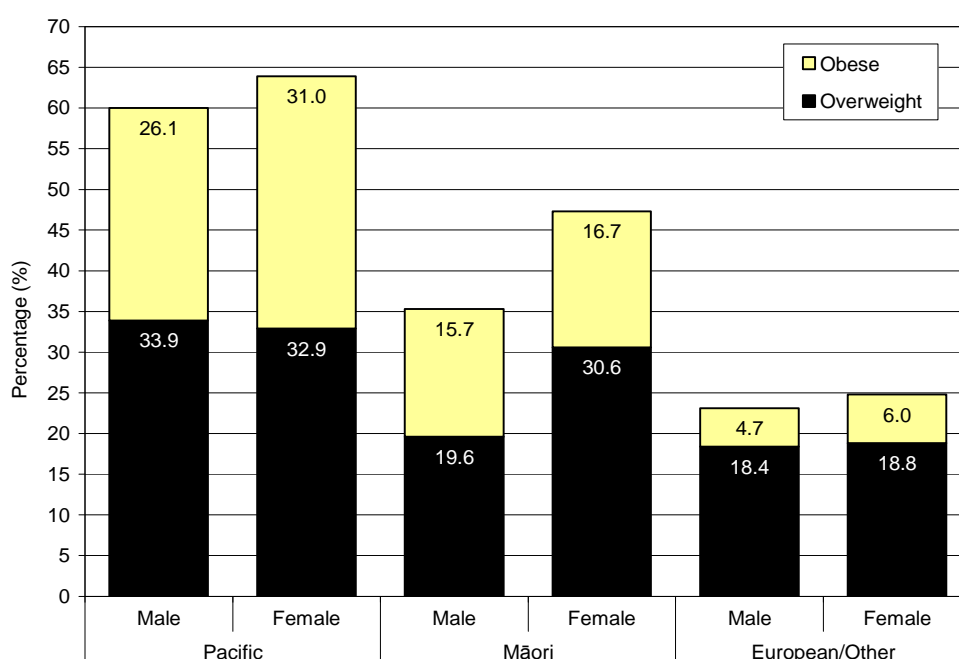
### Introduction

There is no routine surveillance of overweight and obesity in New Zealand children and young people at present (a situation which may change with the institution of the NZ Children's Health Survey), and information is collated from one off surveys and research project reports.

Obesity has been associated with a variety of adverse health outcomes including ischaemic heart disease, stroke, diabetes and cancer. There remains strong evidence to suggest that being obese as a child increases the risk of adult obesity. In addition, obesity has been shown to run in families, with genetic predisposition being seen as accounting for a significant proportion familial clustering, once the effects of shared environmental conditions are taken into account. In population health terms, while it remains unclear which of these risk factors has made the greatest contribution to the current obesity epidemic, it is likely that interventions which address both sides of the energy equation (e.g. high fat diets, increased portion sizes vs. reductions in the amount of energy expended on transport, housework and leisure time activities) will be necessary, if the current obesity epidemic is to be addressed.

### The National Children's Nutrition Survey

Figure 59. Proportion of Children Aged 5-14 Years Who Were Either Overweight or Obese, by Gender & Ethnicity, New Zealand National Children's Nutrition Survey 2002



Source: NZ Food, NZ Children: Key Results of the 2002 National Children's Nutrition Survey

### 9.9.3 Summary and Policy Implications

1. **Prevalence:** While estimates vary from study to study, NZ data collected since 2000 suggests that  $\approx 20\%$  of NZ children are overweight and  $\approx 10\%$  are obese.
2. **Trends over Time:** Of the 2 studies which have tracked the pace of the obesity epidemic amongst New Zealand children and young people, both suggest that it is progressing relatively rapidly, with the proportion of children who are overweight or obese increasing 2-3 fold over the past decade.
3. **Ethnic Disparities:** All of the New Zealand studies reviewed demonstrated higher rates of overweight and obesity amongst Pacific > Māori > European children and adolescents.
4. **Socioeconomic Disparities:** The New Zealand Children's Nutrition Survey suggests that obesity may exhibit a modest socioeconomic gradient, with rates being higher amongst those in the most deprived areas.

These findings suggest that the current levels of overweight and obesity amongst New Zealand children and adolescents are a significant public health concern and that unless sound policies and strategies are put in place to address this issue, the socioeconomic and ethnic disparities in overweight and obesity seen amongst New Zealand children and young people, will lead to disparities in chronic disease burden, as this generation reaches maturity.

## 9.9.4 Exposure to Cigarette Smoke in the Home

### Introduction

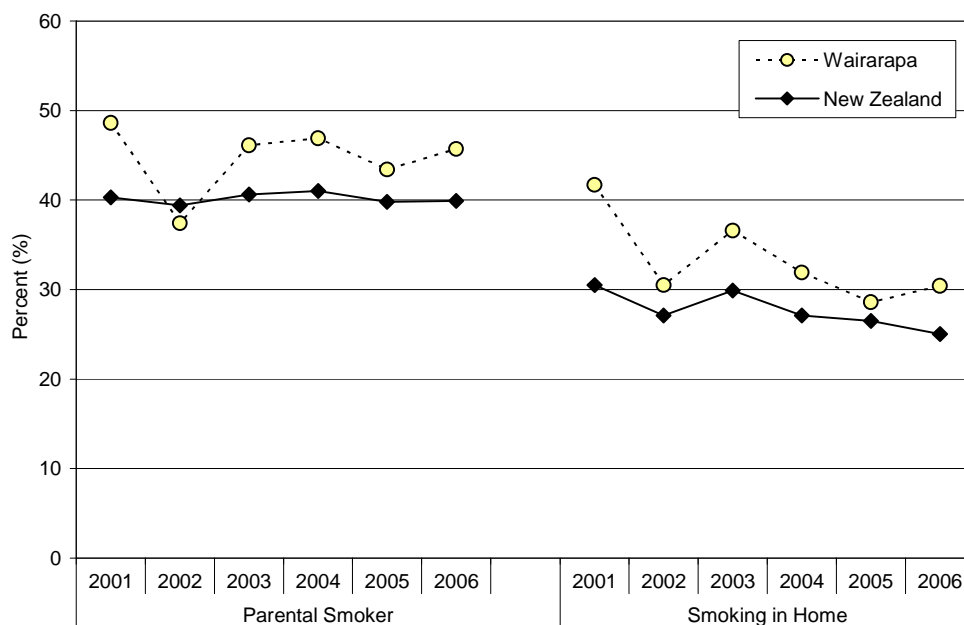
In New Zealand each year, it has been estimated that exposure to second hand smoke results in:

- 500 hospital admissions for chest infections in children <2 years
- 15,000 episodes of childhood asthma
- 27,000 GP consultations for asthma and respiratory problems
- 1,500 operations to treat glue ear
- 50 cases of meningococcal disease

### Parental and Household Smoking Behaviour in the Wairarapa

In the Wairarapa during 2001-2006, the proportion of Year 10 students who reported at least one parent smoking remained relatively static (48.6% in 2001→ 45.7% in 2006), while the proportion who reported living in homes where people smoked inside declined (41.7% in 2001→ 30.4% in 2006). Both parental smoking rates and exposure to household tobacco smoke were higher than the New Zealand average during this period and trends were consistent with those occurring nationally (Figure 77).

Figure 77. Proportion of Year 10 Students with Parents Who Smoke and Who Live in Homes with Smoking Inside, the Wairarapa vs. New Zealand, ASH Surveys 2001-2006

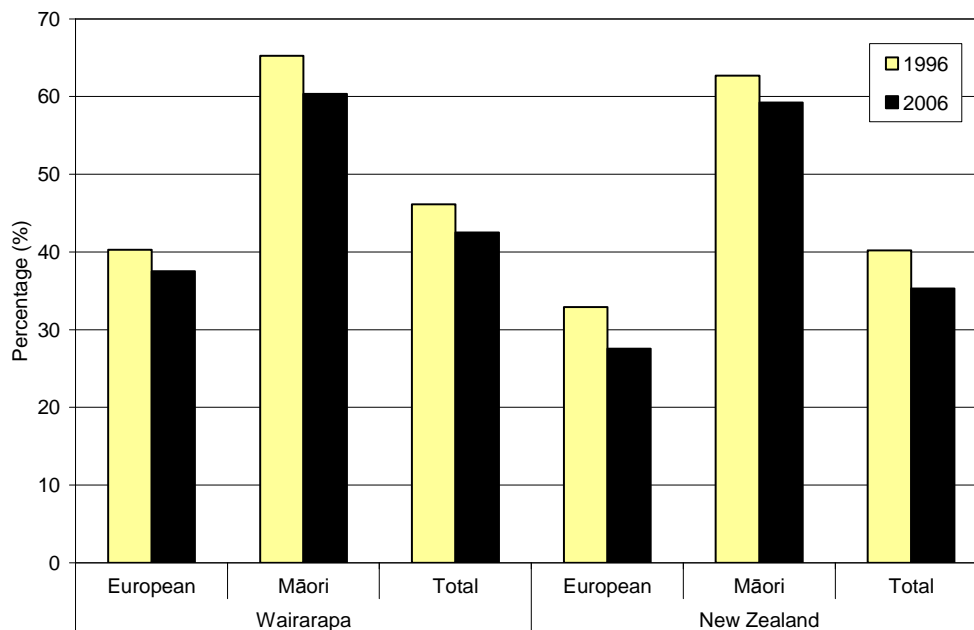


## 9.9.5 Exposure to Cigarette Smoke in the Home: Census Data

### Total Smoking Exposure and Ethnic Differences

In the Wairarapa during 2006, 42.5% of children (0-14 yrs) lived in a household with a smoker, as compared to 35.3% nationally. These rates are lower than those in 1996, when 46.1% of Wairarapa children (0-14years) lived in a household with a smoker as compared to 40.2% nationally. During 2006, marked ethnic differences were also evident, with 60.3% of Maori children living in a household with a smoker, as compared to 37.5% of European children. While these differences were similar to those occurring nationally, the proportion of Wairarapa European children living in a household with a smoker was higher than the NZ European average (Figure 78).

Figure 78. Proportion of Children 0-14 Years Living in a Household with a Smoker by Ethnicity, the Wairarapa vs. New Zealand at the 1996 and 2006 Censuses



Given the significant associations between passive smoking and outcomes such as SIDS, bronchiolitis, and pneumonia during childhood, it is likely that exposure to second hand cigarette smoke has made a significant contribution to disparities in child health outcomes in the Wairarapa.

### 9.9.6 Immunisation

#### Introduction

Immunisation is among the most successful and cost-effective public health interventions. Immunisation not only protects individuals, but through the effect of 'herd immunity' benefits the whole community. A major benefit from immunisation is the potential to reduce socioeconomic disparities which are evident in vaccine preventable disease.

The New Zealand Childhood Immunisation Schedule offers free immunisations protecting against nine vaccine preventable diseases; Diphtheria, Tetanus, Pertussis (whooping cough), Poliomyelitis, Hepatitis B, Haemophilus influenzae type b, Measles, Mumps and Rubella. In addition, the Schedule offers publicly funded immunisation to those at risk of influenza, tuberculosis, and pneumococcal disease. Epidemic strain Meningococcal B immunisation is offered as a special programme.

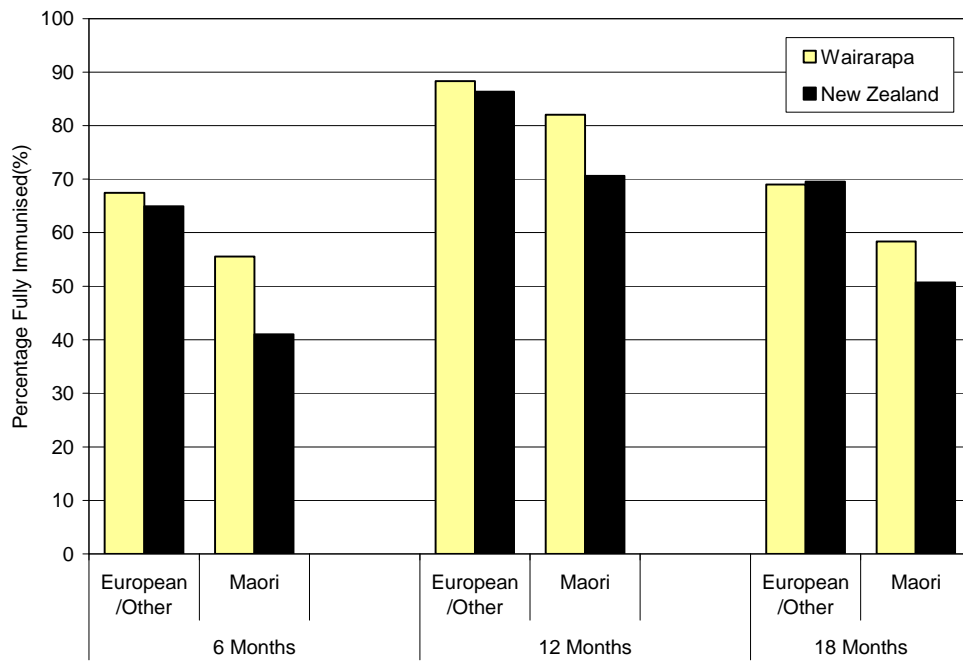
#### Immunisation Coverage: National Immunisation Register

Immunisation coverage is measured at the 'milestone ages' of 6 months, 12 months, 18 months, 24 months, 5 years and 12 years old. If a child has received all of their age appropriate immunisations by the time they have reached the milestone age they are fully immunised. The National Immunisation Register began collecting data for the Wairarapa data in October 2005, so data is only available for the 6, 12 and 18 month milestone ages.

#### Immunisation Coverage in the Wairarapa

During the second quarter of 2007, there were ethnic differences in the proportion of Wairarapa children who were fully immunised at 6, 12 and 18 months of age, with coverage rates being higher for European children. Immunisation coverage rates for Maori children in the Wairarapa were higher than the NZ Māori average (Figure 104).

Figure 104. Immunisation Coverage for Children Enrolled on the National Immunisation Register by Milestone Age and Ethnicity, the Wairarapa vs. New Zealand, 1 April 2007 - 1 July 2007



## 10 OLDER MAORI PERSONS HEALTH (65 Years of age and over)

### Key Findings for the Wairarapa

- The Older Wairarapa Maori population aged 65 years and over is projected to more than double during the 2006 and 2026 period.
- Wairarapa Maori females have a longer life expectancy than Wairarapa Maori males. Wairarapa Maori females live on average to the age of 77 years, while Wairarapa men live to the age of 68 years.
- While 5% of the Wairarapa Maori population is 65 years of age or older this group accounted for 10% of the entire Wairarapa population hospitalisations.
- The main reason for hospitalisations of Older Wairarapa Maori people was Respiratory System disease.
- Cancer was the leading cause of mortality for Older Wairarapa Maori people between 1994 and 2004.
- Circulatory system disease was the leading cause of avoidable mortality for older Wairarapa Maori people between 1994 and 2004. The two main causes being heart attack (Acute myocardial infarction) and chronic ischaemic heart disease.
- The second most common cause of death of avoidable deaths for Older Wairarapa Maori, affecting slightly more than twice as many females than males was due to Lung cancer.
- The use of residential care by Maori remains very minimal. It is likely that Older Wairarapa Maori people that require care would be cared for by their Whanau.
- No Wairarapa Maori people were hospitalised due to Dementia during this period.

### 10.1 Demographics

At the time of the 2006 Census there were 273 Maori people aged 65 years and over living in the Wairarapa. The Wairarapa Older Maori population increased by 57 people, or 20.9%, in this age group since the 2001 census. Overall, there were a total of 6,315 people (all ethnicities) aged 65 years and over living in the Wairarapa at the time of the 2006 census. The Maori proportion of this equates to 4% of the Wairarapa older people population.

#### Population Aged 65 years and over by Territorial Authority 2001 to 2006 Census

| Locations              | 2001       | 2006       | Change 2001 – 2006 |              |
|------------------------|------------|------------|--------------------|--------------|
|                        |            |            | Number             | %            |
| South Wairarapa        | 66         | 60         | -6                 | -10%         |
| Carterton              | 21         | 36         | 15                 | 41.7%        |
| Masterton              | 129        | 177        | 48                 | 27.1%        |
| <b>Total Wairarapa</b> | <b>216</b> | <b>273</b> | <b>57</b>          | <b>20.9%</b> |

The total Wairarapa Maori population increased by 1.7% between the 2001 and 2006 census. However, the Wairarapa population aged 65 years and over increased by 20.9% between the two censuses. Projections are for the total Wairarapa Maori population total to increase by 20% between 2006 and 2026. However, the Wairarapa Older Maori population aged 65 years and over is projected to more than double during the same period.

#### Projected Population Aged 65 years and over 2006 - 2026

| Location            | 2006 | 2011 | 2016 | 2021 | 2026 |
|---------------------|------|------|------|------|------|
| Wairarapa           | 270  | 330  | 410  | 500  | 620  |
| Percentage Increase | Base | 22%  | 24%  | 22%  | 24%  |

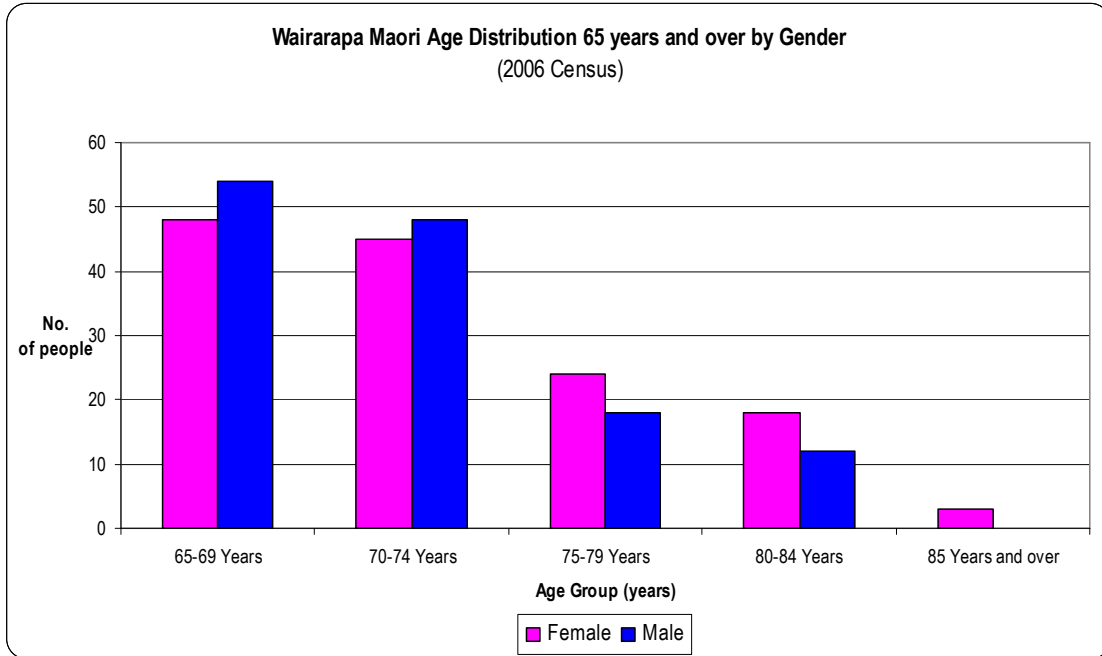
#### Projection Notes:

2006 Actual Census totals

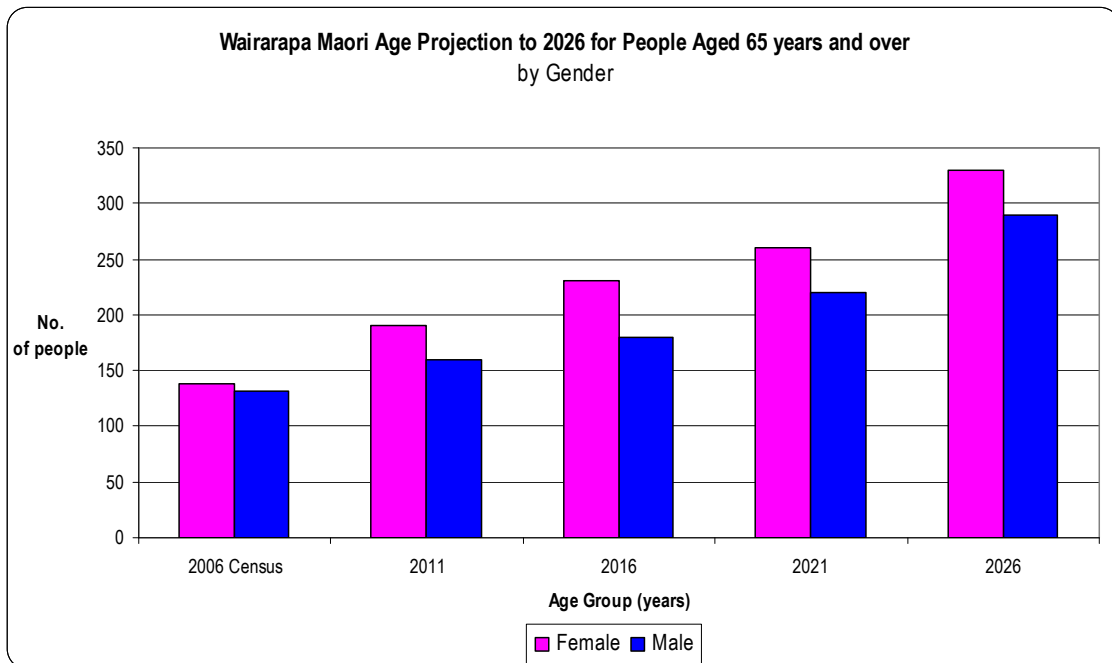
2011 – 2026 based on Stats NZ Projections

## 10.2 Gender Group Population

The following graph shows the gender breakdown across the age bands for Wairarapa Maori people aged 65 years and over, taken from the 2006 Census. Although there were fewer females than males in the 65-74 year age band, Wairarapa Maori females have a longer life expectancy than Wairarapa Maori males. Wairarapa Maori females live on average to the age of 77 years, while Wairarapa men live to the age of 68 years.



The following graph shows the Wairarapa Maori age projection for people 65 years and over, by gender. This projection shows that as the overall population increases, it is expected that there are always more females than males in this age group.



**Projection Notes:**  
 2006 Actual Census totals  
 2011 – 2026 based on Stats NZ Projections

### 10.3 Hospitalisations

Between the year 2000 and 2006 there were a total of 993 hospitalisations of Wairarapa Maori people within this age group. At the time of the 2006 census, Wairarapa Maori people aged 65 years and over made up 5% of the Wairarapa Maori population. Hospitalisations of Wairarapa Maori people in this age group accounted for 10% of the entire Wairarapa Maori population hospitalisations between the year 2000 and 2006. The overall gender breakdown is the same at 47 for females and 53% for males, however as shown in the tables below this varies by age band and condition.

The main reason for hospitalisations of Older Wairarapa Maori was Circulatory System diseases, accounting for 19% of the total within this age group. Heart Failure, Atrial fibrillation and flutter and Acute myocardial infarction accounted for 63% of Circulatory System diseases hospitalisations of Wairarapa Maori people aged 65 years and over.

The second most common reason for hospitalisations of Wairarapa Maori people aged 65 years and over was due to Respiratory system diseases between the year 2000 and 2006. Other chronic obstructive pulmonary disease (COPD) and Pneumonia were the two main diagnoses, making up 69% of the total in this category.

The following three tables show details of the top five reasons for hospitalisations for Wairarapa Maori people aged 65 years and over, between the year 2000 and 2006.

#### Older Maori People Aged 65-74 Years

| International Classification of Disease (ICD10) Chapter | Wairarapa               |            |            |
|---|-------------------------|------------|------------|
|   | No. of Hospitalisations | Female     | Male       |
| Respiratory system                                      | 142                     | 52         | 90         |
| Circulatory system                                      | 135                     | 34         | 101        |
| Digestive system  | 67                      | 30         | 37         |
| Injury & poisoning                                      | 56                      | 19         | 37         |
| Cancer - Malignant                                      | 50                      | 35         | 15         |
| Other Causes  | 266                     | 137        | 129        |
| <b>Total</b>  | <b>716</b>              | <b>307</b> | <b>409</b> |

#### Older Maori People Aged 75-84 Years

| International Classification of Disease (ICD10) Chapter | Wairarapa               |            |            |
|---|-------------------------|------------|------------|
|   | No. of Hospitalisations | Female     | Male %     |
| Circulatory system                                      | 44                      | 19         | 25         |
| Respiratory system                                      | 38                      | 27         | 11         |
| Digestive system  | 23                      | 9          | 14         |
| Eye & adnexa  | 20                      | 11         | 9          |
| Factors influencing health                              | 20                      | 14         | 6          |
| Other Causes  | 110                     | 65         | 45         |
| <b>Total</b>  | <b>255</b>              | <b>145</b> | <b>110</b> |

#### Older Maori People Aged 85 + Years

| International Classification of Disease (ICD10) Chapter | Wairarapa               |           |          |
|---|-------------------------|-----------|----------|
|   | No. of Hospitalisations | Female    | Male     |
| Circulatory system                                      | 5                       | 2         | 3        |
| Injury & poisoning                                      | 5                       | 4         | 1        |
| Cancer - Malignant                                      | 3                       | 3         | 0        |
| Respiratory system                                      | 3                       | 2         | 1        |
| Endocrine, metabolic & immunity                         | 2                       | 1         | 1        |
| Other Causes  | 4                       | 4         | 0        |
| <b>Total</b>  | <b>22</b>               | <b>16</b> | <b>6</b> |

## 10.4 Mortality

Between the year 1994 and 2004 there were a total of 136 deaths of Wairarapa Maori people over the age of 65 years.

The main cause of death of Older Wairarapa Maori was Circulatory System diseases, accounting for 41% of the total within this age group. Acute myocardial infarction and Chronic ischemic heart disease accounted for 64% of Circulatory System disease related deaths of Wairarapa Maori people aged 65 years and over.

The second most common cause of death of Wairarapa Maori people aged 65 years and over, between 1994 and 2004, was due to Cancer. Lung cancer was the most common cause, accounting for 35% of the cancer deaths of Wairarapa Maori in this age group.

The following three tables show details of the top five causes of death for Wairarapa Maori people aged 65 years and over, between the years 1994 and 2004.

### Older Maori People Aged 65-74 Years

| International Classification of Disease (ICD10) Chapter | Wairarapa     |           |           |
|---|---------------|-----------|-----------|
|   | No. of Deaths | Female    | Male      |
| Cancer - Malignant                                      | 30            | 19        | 11        |
| Circulatory system                                      | 28            | 14        | 14        |
| Endocrine, metabolic & immunity                         | 10            | 3         | 7         |
| Respiratory system                                      | 3             | 3         | 0         |
| Digestive system  | 2             | 0         | 2         |
| Other Causes  | 1             | 0         | 1         |
| <b>Total</b>  | <b>74</b>     | <b>39</b> | <b>35</b> |

### Older Maori People Aged 75-84 Years

| International Classification of Disease (ICD10) Chapter | Wairarapa     |           |           |
|---|---------------|-----------|-----------|
|   | No. of Deaths | Female    | Male      |
| Circulatory system                                      | 21            | 11        | 10        |
| Respiratory system                                      | 10            | 6         | 4         |
| Cancer - Malignant                                      | 9             | 2         | 7         |
| Endocrine, metabolic & immunity                         | 1             | 0         | 1         |
| External causes   | 1             | 0         | 1         |
| Other Causes  | 3             | 2         | 1         |
| <b>Total</b>  | <b>45</b>     | <b>21</b> | <b>24</b> |

### Older Maori People Aged 85 Years and over

| International Classification of Disease (ICD10) Chapter | Wairarapa     |           |          |
|---|---------------|-----------|----------|
|   | No. of Deaths | Female    | Male     |
| Circulatory system                                      | 7             | 5         | 2        |
| Cancer - Malignant                                      | 4             | 2         | 2        |
| External causes   | 2             | 2         | 0        |
| Respiratory system                                      | 1             | 1         | 0        |
| Genitourinary system                                    | 1             | 1         | 0        |
| Other Causes  | 2             | 1         | 1        |
| <b>Total</b>  | <b>17</b>     | <b>12</b> | <b>5</b> |

## 10.5 Avoidable Mortality

Between 1994 and 2004, a total of 66 Wairarapa Maori people aged 65 years and over died due to causes that are considered potentially preventable through population-based interventions (e.g.) health promotion) and preventable and curative interventions at an individual level.

The following table shows that Circulatory system diseases were the main cause of The two main causes were due to heath attack (Acute myocardial infarction) and Chronic ischaemic heart disease.

The second most common cause of death of avoidable deaths, affecting slightly more than twice as many females than males was due to Lung cancer.

### Avoidable Deaths - Older Maori People Aged 65 Years and over

| International Classification of Disease (ICD10) Chapter | Wairarapa     |           |           |
|---|---------------|-----------|-----------|
|   | No. of Deaths | Female    | Male      |
| Circulatory system                                      | 26            | 13        | 13        |
| Cancer - Malignant                                      | 25            | 16        | 9         |
| Endocrine, metabolic & immunity                         | 10            | 3         | 7         |
| Respiratory system                                      | 3             | 3         | 0         |
| Digestive system  | 1             | 0         | 1         |
| External causes   | 1             | 0         | 1         |
| <b>Total</b>  | <b>66</b>     | <b>35</b> | <b>31</b> |

### Total Deaths vs Avoidable Deaths Older Maori People Aged 65 Years and over

|                                       | Total      | Female     | Male       |
|---------------------------------------|------------|------------|------------|
| Total Deaths                          | 136        | 72         | 64         |
| Avoidable Deaths                      | 66         | 35         | 31         |
| <b>Percentage of Avoidable Deaths</b> | <b>49%</b> | <b>49%</b> | <b>48%</b> |

## 10.6 Dementia – Older Wairarapa Maori

Dementia is a term that covers a number of diseases that occur as a result of physical changes in the structure of the brain. These changes are caused by specific conditions, and result in impairment of memory, thinking and skills, sometimes accompanied by altered emotional expression and sensory perception. Dementia is almost always progressive, which means the symptoms will gradually get worse.

Dementia predominantly affects people aged over 65 years and becomes more common with advancing age. Estimates of the prevalence of dementia range from 1% for those aged 60-64 years. This rises at a rate of about 1 to 2% per year of age, to around 30% of those aged 85 years and older.

In New Zealand, the majority of people (at least 50%) with mild dementia (i.e. minimal functional and cognitive limitations) are cared for in the community, some with good support systems, although this is by no means uniform across the country.

Care in the community is frequently provided predominantly by one family member. The ability of people with dementia to remain in their own homes is determined by a number of different factors including:

- availability of family/other carer support
- availability and accessibility of relevant community services
- extent of disability and functional impairment
- behavioural complications
- psychotic symptoms.

Between the year 2000 and 2006 there were no Wairarapa Maori people over the age of 65 years hospitalised due to Dementia. It is likely that if Older Wairarapa Maori were diagnosed with Dementia they would be cared for by their Whanau. For Maori, the Whanau is the unit that provides care, identity, purpose and a sense of belonging.

| Wairarapa Maori          | No. of Hospitalisations | Female | Male |
|--------------------------|-------------------------|--------|------|
| Dementia (ICD F00 – F03) | 0                       | 0      | 0    |

## 10.7 Hip and Knee Replacements

Hip replacement and knee replacement are surgical options for the treatment of severe arthritis. Osteoarthritis is the most common of over 100 known forms of arthritis. Obesity is an important and modifiable risk factor for arthritis. Due to the expected demographic ageing of the New Zealand population, the number of people with arthritis will increase further, as more people move into the older age groups where arthritis is more prevalent.

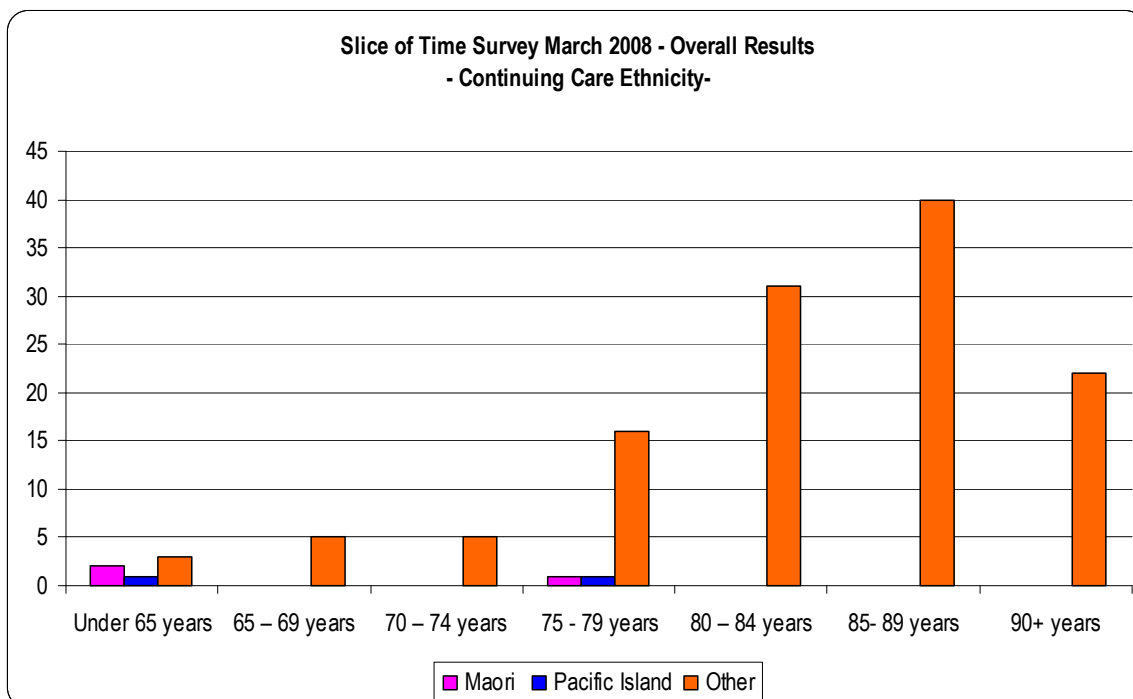
The following table shows the number of hip and knee replacements done for Wairarapa Maori people aged 65 years and over during the 2004/05 and 2007/08 (up to and including January 2008).

| Financial Year | Hip Replacements | Knee Replacements |
|----------------|------------------|-------------------|
| 2004/05        | 9                | 3                 |
| 2005/06        | 4                | 3                 |
| 2006/07        | 7                | 1                 |
| 2007/08        | 5                | 3                 |
| <b>Total</b>   | <b>25</b>        | <b>10</b>         |

## 10.8 Residential Care

The following graph shows the ethnicity of people in residential care. The use of residential care by Pacific Island people (1) and Maori (5) remains very minimal. 98.4% of all residents are in the 'other' category.

It is likely that Older Wairarapa Maori people that require care would be cared for by their Whanau. For Maori, the Whanau is the unit that provides care, identity, purpose and a sense of belonging.



## 11 DISABILITY

### Key Findings for the Wairarapa

- 5% of Maori children had special education needs and this was the most common type of disability for Maori children.
- Almost all Maori with a disability lived in households (99%) and less than 1% lived in residential facilities.
- Of Maori adults, 19% had a disability. The most common causes of disability for Maori adults were disease or illness.
- For those Maori adults with a disability, 38% had a single disability and 62% had multiple disabilities.

The following section was sourced from the 2006 Disability Survey results, published by Statistics New Zealand<sup>1</sup>.

The 2006 Disability Survey provides information on children and adults living in households and adults living in residential facilities. Focus was placed on measuring disability among children, adults, and older people and for Maori and Pacific peoples.

### 11.1 Definition of a disability

A functional concept of disability was described in the 2006 Disability Survey:

*“... any restriction or lack (resulting from impairment) of ability to perform an activity in the manner or within the range considered normal for a human being.” (World Health Organisation)*

This is the World Health Organisation (WHO) definition that was used in the 1996–1997 and 2001 disability surveys. It was used again in 2006 so the data would be comparable. Using this concept, a disability was defined as any limitation in activity resulting from a long-term condition or health problem. The focus was, therefore, not on identifying the nature of the disorder or disabling condition, but rather the limitation resulting from it.

People were not considered to have a disability if an assistive device (such as glasses) completely eliminated their limitation. A concept of time was included as an additional filter; the disability must have lasted or be expected to last for six months or more.

Disability was determined by responses to a series of questions that assessed difficulties performing certain day-to-day activities. Answers reflected respondents' own perception of their situation and were, therefore, subjective.

### 11.2 Children (aged 0-14 years) with Disabilities

#### Disability Types

Disability types for children are defined as:

- Sensory – includes children with hearing and/or seeing disabilities
- Use of technical equipment – includes children who use specialised or technical equipment
- Intellectual – includes children with an intellectual disability
- Psychiatric / Psychological – includes children with a psychiatric or psychological disability
- Chronic health problem – includes children who have a chronic condition
- Other – includes children with speaking disabilities and/or disabilities classified above as other or special education

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<sup>1</sup> The 2006 Disability Survey results can be viewed on web page:

<http://www.stats.govt.nz/products-and-services/hot-off-the-press/social-conditions/2006-disability-survey-hotp.htm?page=para001Master>

## Disability Causes

Disability causes for children are defined as:

- Disease or Illness
- Existed at Birth
- Accident or injury
- Other cause

### 11.3 Adults (aged 15 years and over) with Disabilities

Disability types for adults are defined as:

- Sensory – includes people with hearing and/or seeing disabilities
- Physical – includes people with mobility and/or agility disabilities
- Intellectual – includes people previously defined as having intellectual disability
- Psychiatric / Psychological – includes people previously defined as having psychiatric or psychological disability.
- Other – includes people with speaking disabilities and/or disabilities classified above as other.

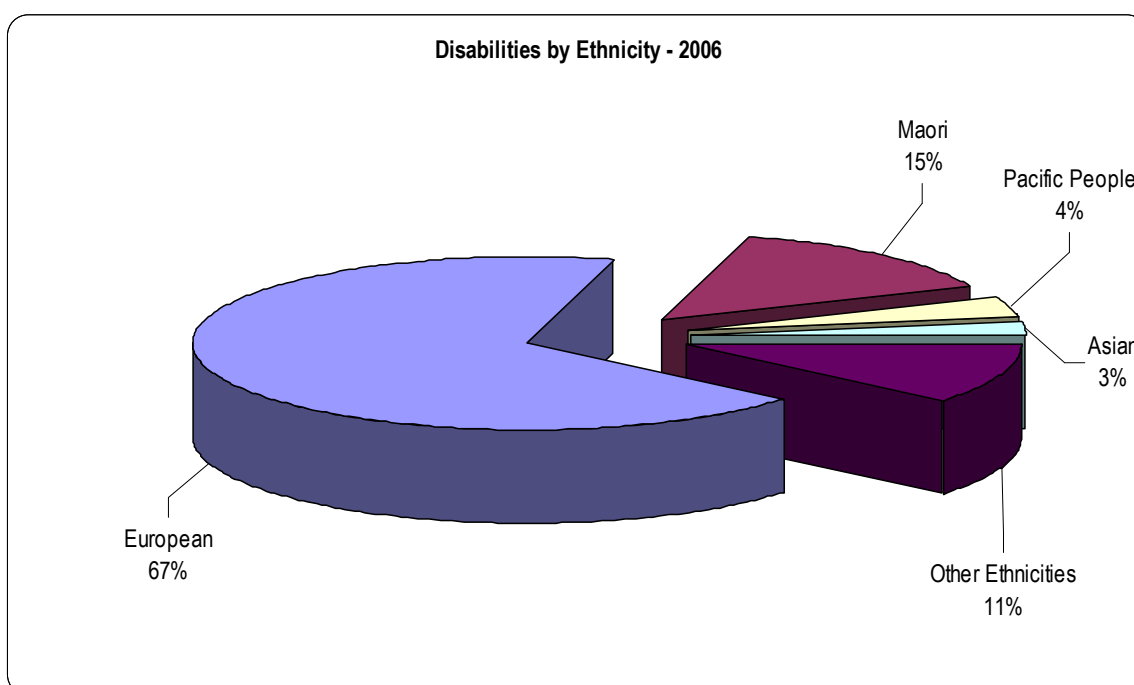
## Disability Causes

Disability causes for adults are defined as:

- Disease or Illness
- Existed at Birth
- Accident or injury
- Other cause

### 11.4 Disabilities by Ethnicity

The 2006 Disability Survey did not collect data to a territorial authority level. The following graph therefore represents the estimated breakdown by ethnicity of Wairarapa people with disabilities, based on the national data.



The 2006 Disability Survey reported that almost all Maori with a disability lived in households (99%) and less than 1% lived in residential facilities. An estimated 14% of Maori children had a disability. 5% of Maori children had special education needs and this was the most common type of disability for Maori children. Other common disability types were chronic conditions or health problems (5% of Maori children) and psychiatric or psychological disabilities (3% of Maori children).

Of Maori adults, 19% had a disability. The most common causes of disability for Maori adults were disease or illness (34% of Maori adults with disability) followed by accidents or injuries (32%). The most common types of accidents or injuries occurred in the workplace or at home, or involved motor vehicle accidents.

For those Maori adults with a disability, 38% had a single disability and 62% had multiple disabilities.

## 12 INJURIES AND ACCIDENTS

### Key Findings for the Wairarapa

- Road traffic injuries and Suicide were the most common reasons for accident / injury related hospitalisations of Wairarapa Maori people between the year 2000 and 2006, accounting for 71% of this total.
- Wairarapa Maori males account for (68%) of the hospitalisations due to Road traffic injuries.
- The percentage of accident / injury hospitalisations for Wairarapa Maori males between the ages of 15-24 was 18%, compared to 10% for Wairarapa Maori females in the same age group.
- Between 1994 and 2004, 92% of accidental deaths of Wairarapa Maori were due to either transport accidents or Suicide.

### 12.1 Serious or Fatal accidents

Between 1994 and 2004, 92% of accidental deaths of Wairarapa Maori were due to either transport accidents or Suicide.

Since 2004, the approach to road safety advertising has aimed to increase demand from New Zealand society for a change in behaviour from dangerous drivers who put the rest of us at risk.

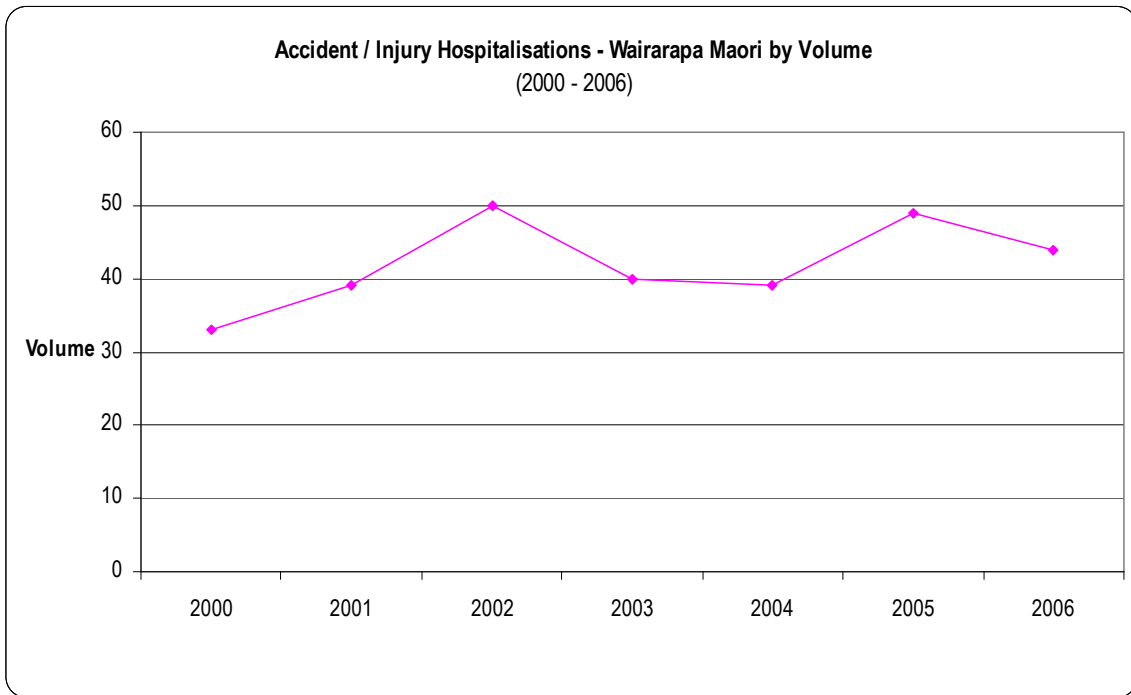
The Accident Compensation Corporation (ACC) is responsible for managing the national personal injury insurance scheme. Nearly everyone who is injured in an accident in New Zealand, including overseas visitors and foreign diplomats, is covered for treatment in New Zealand for personal injury caused by accident, regardless of fault. ACC does not cover illness. It only covers injuries that happen in New Zealand and treatment received here.

### 12.2 Accident / Injury Hospitalisations

Between the year 2000 and 2006, there were 294 accident / injury related hospitalisations of Wairarapa Maori people. Road traffic injuries and Suicide were the most common reasons for hospitalisations, accounting for 71% of this total.

The following table showing the Wairarapa Maori versus New Zealand Maori accident hospitalisation percentages between the year 2000 and 2006 indicates there is no significant difference from the New Zealand percentage. However, the Wairarapa Maori had a higher percentage of hospitalisations in relation to Suicide.

| Accident / Injury Conditions    | Wairarapa Maori         |             | New Zealand Maori |
|---------------------------------|-------------------------|-------------|-------------------|
|                                 | No. of Hospitalisations | %           | %                 |
| Road traffic injury             | 138                     | 47%         | 50%               |
| Suicide                         | 70                      | 24%         | 19%               |
| Falls from playground equipment | 38                      | 13%         | 15%               |
| Poisoning                       | 28                      | 10%         | 11%               |
| Burns and scalds                | 11                      | 4%          | 3%                |
| Indeterminately caused injuries | 9                       | 3%          | 2%                |
| <b>Total</b>                    | <b>294</b>              | <b>100%</b> | <b>100%</b>       |



### 12.3 Accidents by age grouping and gender grouping

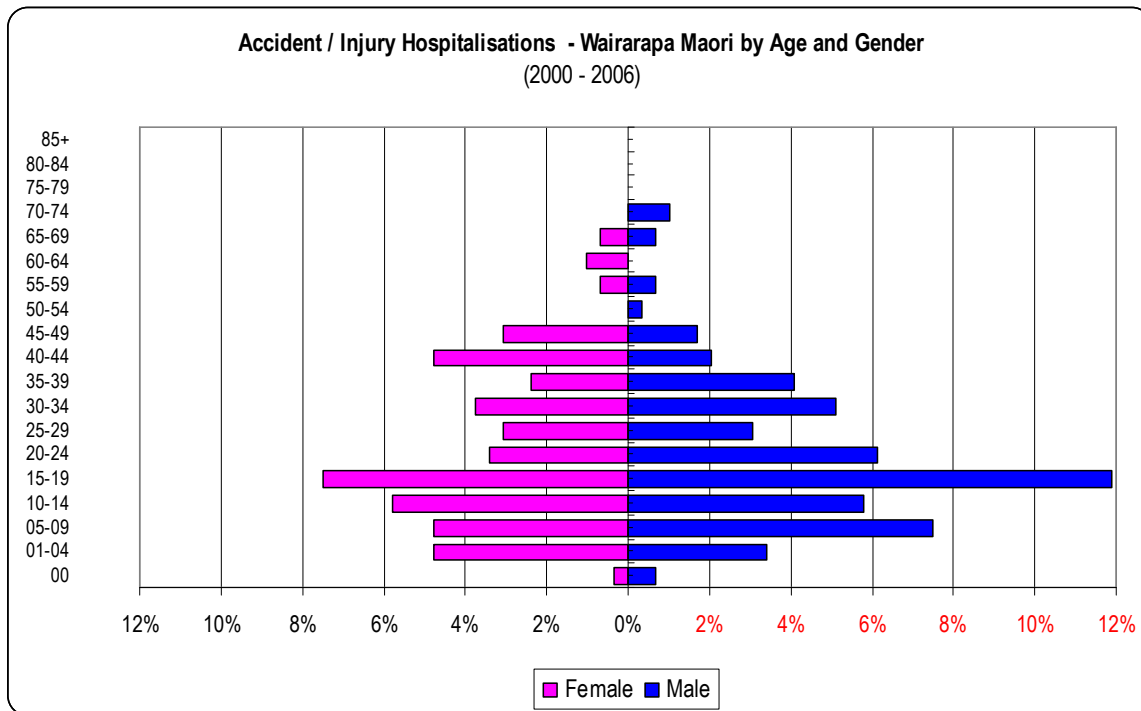
Accident / Injury related hospitalisations were higher for Wairarapa Maori males at 159, compared to 135 for Wairarapa Maori females during the year 2000 to 2006 period.

| Accident / Injury Hospitalisations | Wairarapa Maori |        |      |
|------------------------------------|-----------------|--------|------|
|                                    | Total           | Female | Male |
| Number of Hospitalisations         | 294             | 135    | 159  |
| Percentage of Hospitalisations     | 100%            | 46%    | 54%  |

Of the accident / injury related hospitalisations, 138 (47%) were due to Road traffic injuries during the year 2000 to 2006 period. Wairarapa Maori males account for 94 (68%) of the hospitalisations due to Road traffic injuries. The following table shows the condition breakdown for accident / injury related hospitalisations by gender for Wairarapa Maori people.

| Accident / Injury Hospitalisation Conditions | Wairarapa Maori |            |            |
|--|-----------------|------------|------------|
|  | Total           | Female     | Male       |
| Burns and scalds                             | 11              | 8          | 3          |
| Drowning                                     | 0               | 0          | 0          |
| Falls from playground equipment              | 38              | 17         | 21         |
| Indeterminately caused injuries              | 9               | 2          | 7          |
| Poisoning                                    | 28              | 14         | 14         |
| Road traffic injury                          | 138             | 44         | 94         |
| Suicide                                      | 70              | 50         | 20         |
| Swimming pool accidents                      | 0               | 0          | 0          |
| <b>Total</b>                                 | <b>294</b>      | <b>135</b> | <b>159</b> |

The following graph shows that the percentage of accident / injury related hospitalisations overall were higher for Wairarapa Maori males than Wairarapa Maori females. The percentage of accident / injury hospitalisations for Wairarapa Maori males between the ages of 15-24 was 18%, compared to 10% for Wairarapa Maori females in the same age group.



The following tables show the volumes of accident / injury related hospitalisations by gender for each age group.

|                                | Accident / Injury Conditions    | No. of Hospitalisations | No. Female | No. Male  |
|--------------------------------|---------------------------------|-------------------------|------------|-----------|
|                                | <b>Children Aged 0-14 Years</b> | Burns and scalds        | 5          | 4         |
|                                | Falls from playground equipment | 37                      | 16         | 21        |
|                                | Poisoning                       | 15                      | 7          | 8         |
|                                | Road traffic injury             | 32                      | 14         | 18        |
|                                | Suicide                         | 8                       | 5          | 3         |
|                                | <b>Total</b>                    | <b>97</b>               | <b>46</b>  | <b>51</b> |
| <b>Youth Aged 15-24 Years</b>  | Burns and scalds                | 3                       | 3          |           |
|                                | Indeterminately caused injuries | 2                       | 2          |           |
|                                | Poisoning                       | 4                       |            | 4         |
|                                | Road traffic injury             | 44                      | 8          | 36        |
|                                | Suicide                         | 32                      | 19         | 13        |
|                                | <b>Total</b>                    | <b>85</b>               | <b>32</b>  | <b>53</b> |
| <b>Adults Aged 25-44 Years</b> | Burns and scalds                | 3                       | 1          | 2         |
|                                | Falls from playground equipment | 1                       | 1          |           |
|                                | Indeterminately caused injuries | 7                       |            | 7         |
|                                | Poisoning                       | 5                       | 4          | 1         |
|                                | Road traffic injury             | 41                      | 13         | 28        |
|                                | Suicide                         | 26                      | 22         | 4         |
|                                | <b>Total</b>                    | <b>83</b>               | <b>41</b>  | <b>42</b> |

|   |                                     |                                    |                       |                     |
|---|-------------------------------------|------------------------------------|-----------------------|---------------------|
| <b>Adults Aged<br/>45-64 Years</b>          | <b>Accident / Injury Conditions</b> | <b>No. of<br/>Hospitalisations</b> | <b>No.<br/>Female</b> | <b>No.<br/>Male</b> |
|   | Poisoning                           | 2                                  | 2                     |                     |
|   | Road traffic injury                 | 16                                 | 8                     | 8                   |
|   | Suicide                             | 4                                  | 4                     |                     |
|   | <b>Total</b>                        | <b>22</b>                          | <b>14</b>             | <b>8</b>            |
| <b>Older People<br/>Aged 65 Years<br/>+</b> | <b>Accident / Injury Conditions</b> | <b>No. of<br/>Hospitalisations</b> | <b>No.<br/>Female</b> | <b>No.<br/>Male</b> |
|   | Poisoning                           | 2                                  | 1                     | 1                   |
|   | Road traffic injury                 | 5                                  | 1                     | 4                   |
|   | <b>Total</b>                        | <b>7</b>                           | <b>2</b>              | <b>5</b>            |
| <b>Grand Total</b>                          |                                     | <b>294</b>                         | <b>135</b>            | <b>159</b>          |

## 12.4 Accident / Injury Mortality

Between 1994 and 2004 there were 13 Wairarapa Maori people died due to accident / injury related events. The majority of these were Wairarapa Maori males.

| <b>Accident / Injury Conditions</b> | <b>No. of Deaths</b> | <b>No. Female</b> | <b>No. Male</b> |
|-------------------------------------|----------------------|-------------------|-----------------|
| Poisoning                           | 1                    | 0                 | 1               |
| Road traffic injury                 | 8                    | 2                 | 6               |
| Suicide                             | 4                    | 0                 | 4               |
| <b>Total</b>                        | <b>13</b>            | <b>2</b>          | <b>11</b>       |



