

# **Health of Older People in Counties Manukau: Population Health Needs Analysis**

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Counties Manukau District Health Board  
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## Abbreviations

ADHB	Auckland District Health Board
ALOS	Average length of stay
ASH	Ambulatory Sensitive Hospitalisations
CAU	Census area unit
CM	Counties Manukau
CMDHB	Counties Manukau District Health Board
DHB	District Health Board
DRG	Diagnostic Related Group
DSS	Disability Support Services
HNA	Health Needs Assessment or Analysis
HOP	Health of Older People
ICD	International Classification of Diseases
LE	life expectancy
MHSOP	Mental Health Services for Older People
MMH	Middlemore Hospital
MOH	Ministry of Health
NMDS	National Minimum Data Set (inpatient data)
NZ	New Zealand
NZDep01	New Zealand Deprivation Index 2001
NZHC	New Zealand Housing Corporation
NZHIS	New Zealand Health Information Service
PAH	Potentially Avoidable Hospitalisation
PAM	Potentially Avoidable Mortality
PBFF	Population Based Funding Formula
PHO	Primary Health Organisation
SCID	Service Coordination Information Database
SES	Socioeconomic status
SNZ	Statistics New Zealand
TA	Territorial Authority (eg Manukau City, Franklin District)
UN	United Nations
WDHB	Waitemata District Health Board
WHO	World Health Organisation

# Key themes – challenges and opportunities for health gain

This report presents a range of key indicators of the demographic profile and health of Counties Manukau adults aged 65 years and over.

A summary of the key findings from each section follows. The potential implications for health planning to maximise health gain for older people living in CMDHB are discussed.

## **Demographic changes**

### ***Increasing numbers and relative proportion of the 65 year and above age group***

CMDHB currently has a youthful population relative to other NZ DHBs, with the lowest proportion of its population aged 65 years and over (8.9% in CM vs. 12% nationally). However, it has the fifth largest absolute numbers of adults aged 65 years and over, with a diverse ethnic and socioeconomic mix.

Based on Statistics NZ medium growth assumptions, the CMDHB population is predicted to increase between 2001 and 2026 by 50% overall, equating to some 589,000 people. The largest proportional increase is evident in the over 65 year age group, with an increase of over 170% from 33,800 to 92,000 people in this time period. These increases are driven by increasing life expectancies and changing migration patterns.

In the next 10 years the baby boomer cohort will start reaching retirement age. This group is on average healthier than its predecessors and as such it is anticipated the largest impact on health service demand will be not be seen until around 2030 when this age group reaches their 80s. However the impact of the growing obesity epidemic on subsequent cohorts when they reach older age is less certain.

### ***Persisting gender imbalance***

The average life expectancy of females exceeds that of men, leading to a preponderance of older females. This is projected to persist through to 2026 and beyond.

### ***Increasing ethnic diversity***

In Counties Manukau in 2004, Māori are estimated to comprise 5% of the population 65+, followed by Asian 8%, Pacific 9% and Others 78%. CMDHB can anticipate increasing diversity of its older population, in part reflecting increasing life expectancy of Māori and Pacific peoples and recent migration patterns. The fastest growth will be seen in the proportion of the older population identifying as Asian, followed by Māori, Pacific and then Other. There are clear ethnic disparities in socioeconomic status within the CM region. The overall pattern is persistent across all age bands, with Pacific, followed by Māori, and then Others (here referring to all non-Māori, non-Pacific) residing in the areas with lowest socioeconomic status as defined by NZDep01.

### ***Changing societal norms***

There is evidence that societal norms are changing, with people marrying later and having fewer children, being more likely to separate and live alone and more likely that their wider family will be geographically dispersed. Thus smaller more mobile families mean fewer older people will be able to rely on their children as care-givers.

This trend is compounded by the pattern of increasing labour force participation of both traditional family and informal caregivers and also amongst people aged 65 and over themselves, thus placing pressure on family and informal support networks for older people, reducing those available for volunteer work and unpaid care giving.

### **Adding years to life**

Overall the older population in CM has a life expectancy (LE) close to the NZ average, but marginally below that for neighbouring Auckland and Waitemata DHBs. In CM, females at age 65 at current age-specific mortality rates may expect to live a further 20 years, equating to 3.2 additional years above that for a similarly aged CM male (at 16.8 years). Ethnic

disparities in LE persist for LE at age 65 years, with Māori or Pacific males aged 65 expected on average to live 3 years less than non-Māori, non-Pacific males and Māori females to live between 3.3 - 3.7 years less than for Pacific and non-Māori, non-Pacific females respectively.

In 2001 the Counties Manukau population aged 65 and over comprised 8.6% of the total Counties Manukau population, but accounted for 70% of the all deaths (1,507 out of 2,162). Mortality rates for the older CM population increase with age, and the rate of all cause mortality in CM is higher for males compared with females.

The four major causes of death across age groups and genders are cancer (all-cause), ischaemic heart disease (IHD), chronic obstructive respiratory disease (CORD), and cerebrovascular diseases. Approximately 60-69% of all deaths for CM adults aged 65 years and over are categorised as 'potentially avoidable' or PAM. The leading causes of PAM include IHD, CORD, stroke, lung and colorectal cancer and diabetes – all amenable to population-based primordial, primary and secondary prevention strategies.

### **Adding life to years**

Comparing age-standardised hospitalisation rates across DHBs, Counties Manukau has higher rates of admission compared to Auckland, Waitemata, and NZ as a total, and lower rates than Northland for all age groups.

In CM, approximately 31% of all hospitalisations and 42% of all inpatient bed days for adults with medical or surgical conditions in 2004 were for adults aged 65 years and over. Hospitalisation rates increase with age amongst the 65+ year old cohort. Males have consistently higher rates of hospitalisation for all the older age groups. There is considerable variation in hospitalisation rates by ethnic group for older adults. The highest rates of hospitalisation in 2004 in CM were for Maori, followed by Pacific, Other and Asian peoples.

Of the total number of hospitalisations for adults aged 65+ between 36% - 41% would be considered potentially avoidable. The leading causes of potentially avoidable hospitalisation for this age group include those for IHD, CORD, diabetes, congestive heart failure, and stroke. Creating socio-economic, socio-cultural and physical environments that favour prevention of smoking, improvements in nutrition and physical activity and facilitate timely access to quality primary care throughout the life course are needed to address these leading potentially amenable causes of morbidity and to not exacerbate gender and ethnic disparities.

Increasing life expectancy could either extend the period a person suffers from ill health and disability during their lifetime, or could lead to a person being healthy for most of their life, with ill-health and disability compressed into the last few years of life. At present it seems both trends are occurring – for every 2 years of life expectancy gained roughly one additional year is spent in ill-health or a disabled state. The obesity epidemic and associated increase in diabetes and its complications are likely to increasingly influence the health of older people, with resulting increases in ill-health and disability and demand for services.

### **Māori and Pacific experience a greater burden of disease and thus have the greatest potential for health gain.**

A disproportionate burden of morbidity and mortality is seen for Maori and Pacific in CM across the life course. This is likely to partially reflect intergenerational effects of inequality in distribution of the determinants of health, and differential access to and through health services at all ages.

### **Address the underlying structural determinants of lifestyle behaviours – avoid victim blaming**

Healthy lifestyles throughout the life course are advocated. It is important to recognise the underlying socio-economic, socio-cultural and environmental structural determinants of these lifestyle patterns. Intersectoral population-based and targeted strategies are needed for primordial and primary prevention of the main disease burdens on our older population, namely cardiovascular, respiratory, musculoskeletal diseases, injury and cancers. There is good evidence that keeping physically active can reduce the likelihood or slow progression of these main illnesses, reduce fall related injuries and promote social interaction and protect mental health. Physical environments that enable mobility (walking, safe and accessible public and/or private transport) and permit regular communication and social contact are thus

important. The proposed development of the suburb and town centre at Flat Bush is a strong example of a planned enabling physical environment.

### **Tobacco exposure**

While the proportion of the older NZ population who smoke is declining (with the WWII cohort the peak), there is ongoing evidence of the differential exposure to tobacco throughout the life course manifest through cancer (in particular lung, throat, colorectal), cardiovascular and respiratory disease incidence and prevalence. Maori are particularly impacted. Health benefits can accrue from stopping smoking at any age, no matter how long the smoking period has been.

### **Keeping physically active and maintaining optimal nutrition**

Many older New Zealanders have low levels of physical activity, with an estimated 26% of those aged 75 years and over sedentary. Maintaining physical activity has an important role in diabetes, CHD, respiratory disease, and fall prevention. It has additional benefits on mental health. Under nutrition is as big an issue as over-nutrition (obesity) in this age group.

### **Housing has important role in assisting older people to age in place**

Housing is also an important mediator of the ability to maintain health and age in place. Home ownership is typically higher in the older population. However with increasing life expectancy and longer periods spent experiencing disability the pressure on existing residential care beds will be exponential. Thus the importance of developing housing interventions and a range of appropriate and acceptable housing options in conjunction with policies for health and social services for an ageing population is pivotal.

### **Use of selected health services**

The older population are high users of health services. However in terms of demand on health service expenditure, demand is not related as strongly to age per se as to chronic illness and disability and to the last year of life. As life expectancy rises and the age at death pushes out, so too does the demand for services, and the cost-effectiveness of preventive measures in the older age groups also improves.

### **Primary care**

The older population are more likely to have consulted a GP in the previous 12 months and more likely to have a higher frequency of visits annually (with exception of females in reproductive age range) than the under 65 year old population. The most common problems of people aged 65 years and over managed in general practice, by disease group, were cardiovascular, respiratory and musculoskeletal. The reported unmet need to see a GP is lower for the older age groups. In CMDHB there are 8 PHOs and the over 65 population comprise approximately 8% of the enrolled population (marginally less than the approximately 8.9% proportion of the total population). Currently, there are no CM PHO Health Promotion Plans that specifically target older people. However, several Health Promotion projects underway that have the capacity to benefit older people include the Walking Bus Programmes (exercise, social interaction, and increasing connectivity with community) and those with an explicit focus on increasing physical activity and healthy nutrition. There is potential for expansion of the role of PHOs in health promotion over the life course but also targeted at the older population.

### **Health sector challenges**

1. workforce capacity
2. technological advances
3. managing consumer and provider expectations
4. information limitations
5. the right mix of residential vs home care support
6. meeting the growing demand for community-based disability support services and residential care.

A key challenge, well recognised by the sector, is that of workforce capacity. Literature highlights need for: (1) more practitioners (2) more specialist services to deal with age-associated conditions such as cataracts and hip replacements (3) more expertise in older people's health due to prevalence of chronic and multiple co-morbidities (4) more support services for older people. Securing and retention of carers/care-assistants for home-based

support and residential services is particularly problematic due to a lack of career progression, minimal wages, and often difficult working conditions including unfavourable working hours. This also raises the question of quality of care provided given lack of industry structure and regulations and high staff turnover.

With the increasing diversity of our older population the need for Māori and Pacific specific services will increase. Support should be given to both ethnic specific services and also ensuring mainstream services are responsive and accountable for Māori and Pacific health gain. The demographic trends will drive the need for innovative approaches to provide residential care and home support services. A key challenge for both the Ministry and DHB will be to manage both community and provider expectations.

Technological advances are major drivers of health expenditure. Expected increases in the range of treatments that are available and increased people's expectations to access to these services are likely. Technological advances also have the potential to change patterns of morbidity in future cohorts.

## **Summary**

The profile provided illustrates the diversity of the current cohort of people aged 65 years and over. In general the current CM older population has life expectancy and mortality rates similar to overall NZ figures, but slightly below those for Auckland and Waitemata. Hospitalisation rates tend to be higher, particularly for IHD and diabetes.

The outlook for CMDHB older persons is very positive. It is anticipated that the population aged 65 years and over will live longer and be increasingly characterised by ongoing independence, continued participation in work, home and community, and health for a longer proportion of their older age than their predecessors. The increasing numbers of older people aged 85 years and over, increasing numbers of Asian, Maori and Pacific peoples, the high proportion of women in older age and likely increase in demand on health services are principal policy considerations for CM.

There is considerable scope for health gain and this data will help to inform the local HOP strategy to best meet the current and projected CM older population health

# 1 Introduction

This report provides an overview of the current and projected health needs of the older population in Counties Manukau District Health Board (CMDHB). This entails summarising demographic characteristics of the population, current and projected trends in health status, patterns of health care utilisation and considering the broader determinants of these trends. In addition a brief review of central government and district policies and documents has been undertaken to extract key principles, and priority action areas to develop a context for action. The completeness, accuracy, representativeness, timeliness and availability of data has been documented.

The key purpose of this review is to inform the District Health Board (DHB) strategic planning process to enable CMDHB to be responsive to the local health needs of the older population. It is envisaged that this review will support (1) the ongoing development and implementation of the local Health of Older People Strategy (2) the District Strategic Plan (DSP) and (3) District Annual Plans (DAP), through which we seek to maximise health gain and reduce inequalities for the population of CMDHB.

## 1.1 Background

Over the next several decades, the population of New Zealand will undergo a demographic transition characterised by rapid population ageing. The proportion of the New Zealand population aged over 65 years is projected to increase steadily from around 2010, reflecting the ageing of the large baby-boom cohort of the 1950-1970s, and the impact of sub-replacement fertility and longevity gains. This transition, from a younger to older age structure, is referred to as 'population ageing' and is a phenomenon common to much of the developed world [1].

Population projections indicate that in Counties Manukau, the population aged 65 years and over is expected to increase from 33800 in 2001 (39500 currently) to reach 76000 by 2021. The highest growth rates for this period are projected for those over 85 years [1-4]. Increases in the proportion of Māori, Pacific and Asian older people will be especially significant, contributing to an older population that is increasingly diverse in ethnicity, health status and health service needs [5].

The consensus from literature on age-related disease and service utilisation trends concurs that population ageing will result in significant increases in the demand for and delivery of health and disability services[5, 6].

In response to these trends and the recognition that current health for older people services were somewhat fragmented, the Ministry of Health instigated The New Zealand Health of Older People (HOP) Strategy. The primary aim of which is to provide a framework for DHBs and other associated agencies in the development and implementation of an integrated continuum of care for older people to promote positive ageing.

Key objective of the National Strategy are:

1. Older people, their families and whanau are able to make well-informed choices about options of healthy living, health care and/or disability support needs.
2. Policy and service planning will support quality health and disability support programmes integrated around the needs of older people
3. Funding and service delivery will promote timely access to quality integrated health and disability support services for older people, family, whanau, and carers
4. the health and disability support needs of older Māori and their whanau will be met by appropriate, integrated health care and disability support services
5. Population-based health initiatives and programmes will promote health and wellbeing in older age.
6. Older people will have timely access to primary and community health services that proactively improve and maintain their health and functioning

7. Admissions to general hospital services will be integrated with any community-based care and support that an older person requires
8. Older people with big and complex health and disability support needs will have access to flexible, timely and coordinated services and living options that take account of family and whānau care needs [3].

The development and implementation of a CMDHB HOP strategy is viewed as a pivotal step towards maximising health gain for our ageing population. This needs analysis has been conducted to ensure that the strategy will best meet the current and projected needs of our local population.

## **1.2 Treaty of Waitangi - Te Tiriti o Waitangi**

The Treaty of Waitangi establishes the unique relationship between Māori as tangata whenua (first peoples of the land) and the Crown. As a Crown agency, Counties Manukau District Health Board considers the Treaty of Waitangi principles of partnership, participation and active protection of Maori Health interests, respect, cooperation and utmost good faith, to be implicit conditions of the nature in which the internal organisation of Counties Manukau District Health Board responds to maximise Maori Health gain and promote equity, and economic and cultural security. In accordance with the New Zealand Public Health and Disability Act 2000, Part 1, section 4 DHBs must work to improve Māori Health gain through the provision of: “mechanisms to enable Māori to contribute to decision –making on and to participate in the delivery of health and disability services”.

CMDHB has identified the following concepts to guide the enactment of this:

- Māori health is everyone’s responsibility
- Māori health gains will be addressed through sustainable solutions
- Māori will enjoy the same level of health as non-Māori
- Whānau health gain is integral to Māori health gain

## **1.3 Report structure**

The report is set out in the following sections:

Key themes – summarises the report and considers the challenges and opportunities for health gain

Chapter 1 describes the project objectives and principles under which these were achieved.

Chapter 2 outlines the methods undertaken, including an overview of the geographical boundaries of CMDHB, data sources, and the rationale and process of Health Needs Assessment.

Chapter 3 provides a demographic profile of the current and projected older population of CMDHB

Chapter 4 documents indices of health status for the population aged 65 years and over including life expectancy, mortality, hospitalisations, selected disease prevalence and incidence, protective/risk factors and disability

Chapter 5 explores the wider structural issues impacting on health including socioeconomic status, transport, housing, age discrimination and social isolation.

Chapter 6 benchmarks patterns of service utilisation by those aged 65 years and over in CMDHB

Chapter 7 conclusion

## 1.4 Objectives and principles

This needs analysis is being undertaken as part of body of work to inform the CMDHB Health for Older People Strategy and Implementation Plan and DHB DAP and DSP.

### Objectives

- To describe the current and projected health and disability support needs of the local CMDHB population aged 65 years and older
- To describe the existing and planned service provision
- To discuss barriers to meeting health care needs. For example: availability/-accessibility/affordability/acceptability of health services (e.g. cultural appropriateness of services).
- To discuss the wider socio-economic, socio-cultural and environmental determinants of health (e.g. housing, transport sectors)
- To review national and international health and disability support sector responses that are effective, (policies/strategies, evidence-based best models of practice, population based initiatives, levels of prevention)
- Highlight any gaps between current and projected health care needs and (1) existing and planned services and (2) evidence based models of best practice.
- Discussion/Recommendations – to guide local strategy and implementation plan.

### Key principles

*“to facilitate the wellbeing of older people, their control over their lives and their ability to participate and contribute to social, family, whanua and community life.”*

- Fostering a positive attitude to growing older
- Working within the framework of the Treaty of Waitangi to address issues for Maori. Recognising the Maori are tangata whenua. Acknowledging that many Maori have holistic view of hauora and the unique position of the kaumatua in New Zealand.
- Using a holistic person-centred approach that empowers older people, caregivers and family and or whanau to make informed choices about health care
- Supporting caregivers in ways that strengthen the older person's family, whanua and informal support networks
- Working with other key sectors to reduce barriers to positive ageing and increase service integration of the benefit of older people
- Recognising and responding to cultural and social diversity and health inequalities among Pacific and other ethnic and social groups.
- Providing timely, equitable needs-based access to comprehensive and integrated continuum of good-quality care with an emphasis on promoting wellness
- Encouraging personal responsibility for maintaining health, while providing appropriately for older people who are disadvantaged through ill health, difficulty accessing services or socioeconomic circumstances
- Responding to changing individual and community health needs in ways that are innovative, collaborative and flexible
- Best practice and supported by research
- Being affordable to the individual and the state.

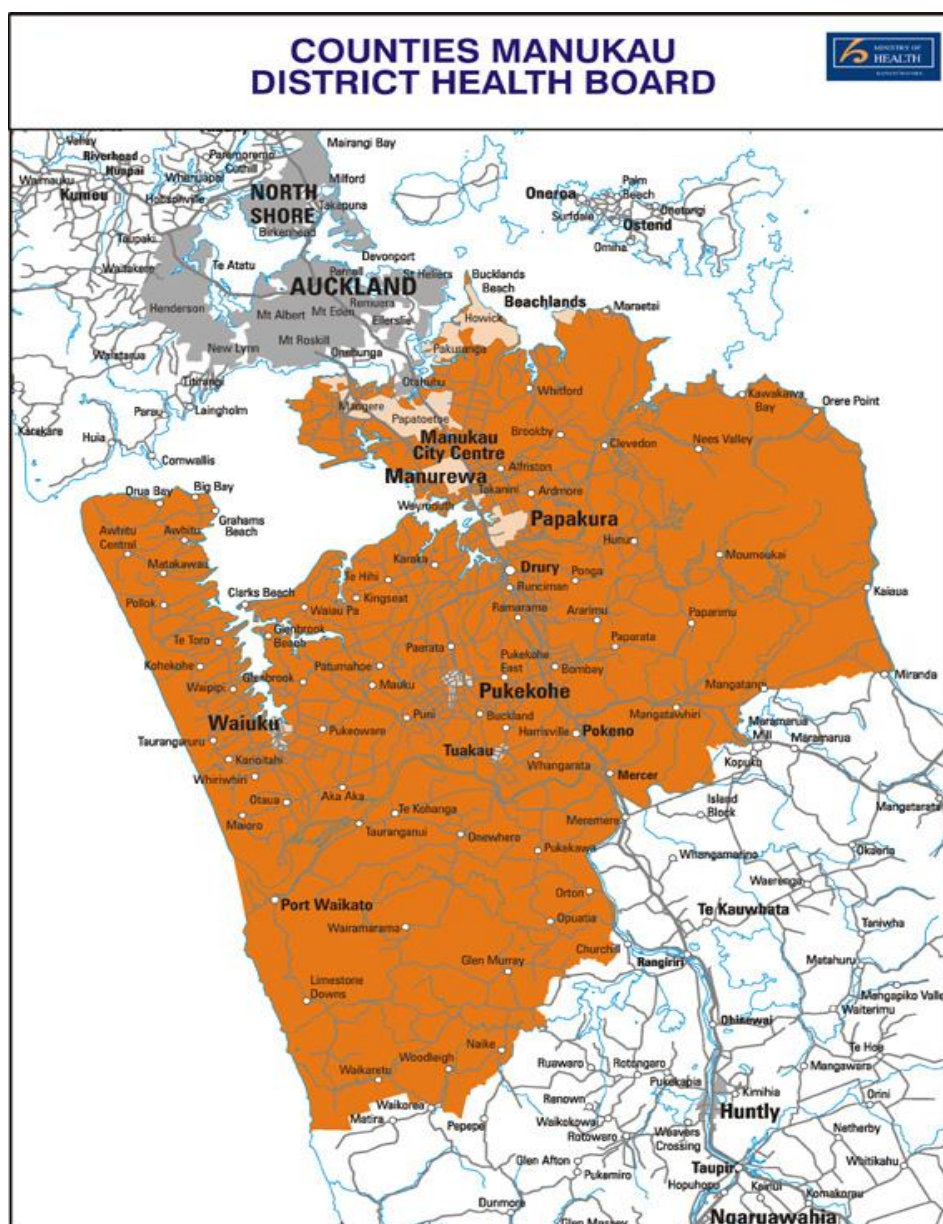


## 2 Methodology

### 2.1 Geographical boundaries

Counties Manukau DHB encompasses the territorial authorities (TA) of Manukau City, and Districts of Papakura and Franklin (Figure 3).

Figure 3: Geographical boundaries of CMDHB, 2005



Manukau City was reported as being the third largest city in NZ at time of the 2001 Census and one of the most ethnically diverse. It is predominantly urban TA, comprising seven wards: Pakuranga, Howick, Clevedon, Mangere, Otara, Manurewa and Papatoetoe. In contrast, Franklin District is largely rural with two main townships of Waiuku and Pukekohe. Papakura District is situated between Manukau City and Franklin District and has become increasingly urban as the wider Auckland urban area grows southward.

The tangata whenua of the Counties Manukau area are Tainui.

To the north of the CMDHB is lies the Auckland, Waitemata and Northland DHBs, and to the south the Waikato DHB. Throughout this report the profile of CMDHB older population has been benchmarked against the total New Zealand Population, and where applicable to other DHBs - notably those closest geographically to Counties Manukau comprising those listed above Central Auckland, Waitemata, Northland and Waikato. This provides some inter-DHB contrast been socio-economic differentials and urban/rural and ethnic diversity.

## **2.2 Data sources and methods of analysis**

The key data sources and generic statistical methods used throughout the report are described in this section. The availability, completeness, accuracy, relevance and timeliness of data used to inform this report is summarised in Appendix 1.

### **2.2.1 Population census**

Population denominator data is derived from the NZ Population Census (unless otherwise specified). The New Zealand Population Census is undertaken every 5 years and provides an official count of the population and dwellings in New Zealand at a single point in time [7]. The last census was held in 2001 and the next census will take place in 2006. The denominator data used to calculate disease rates in this report are thus based on the usually resident population in 2001 and the latest projections, as outlined in the next section.

### **Population projections**

This report uses population and ethnic-specific projections from Statistics NZ prepared for the MOH (released October 2004), based on 2001 Census data for the resident population. Statistics NZ formulate assumptions for fertility, mortality and migration rates which guide these projections following analysis of short and long-term historical trends, government policy, and other relevant local strategic plans. The cohort component method is used to derive projections. Three alternative series (designated low, medium and high) are produced for each area using different fertility, mortality and migration assumptions. The medium projection series is considered the most suitable for assessing the future population change for the purpose of this project. However it should be noted that projections are subject to uncertainty. This is especially so for projections of ethnicity as people can identify with more than one ethnicity and this can change over time, and there is less certainty about future patterns of fertility and mortality of different ethnicities[8, 9].

The assumed fertility rates are based on the registered births for each area during the period 2002-2004 and change consistent with the medium fertility variant of the National population projections. Under the medium fertility assumption, the total fertility rate at the national level is assumed to increase from 1.97 births per woman in 2001 to 2.01 in 2004-2005, decrease to 1.85 in 2016 and then remain constant[8, 9].

The assumed mortality rates for each area are based on the registered deaths for each area during the period 2002-2004 and change consistent with the medium mortality variant of the national population projections. Under the medium mortality assumption, life expectancy at birth at the national level is assumed to increased form 76.1 years for males and 81.0 years for females in 2001 to 81.5 years form males and 85.4 years for females in 2026[8, 9].

Migration at the sub-national level has both an internal and external component. The assumed net migration for each area is based on a consideration of observed net migration during each five-year period from 1981-2001, the capacity of the area for further growth (for areas with net inflow), whether historical outflows can be sustained (for areas with net outflow), the desirability of the area to new migrants and information about local current and future developments which may impact on population change[8, 9].

## 2.2.2 Socioeconomic deprivation

NZDep01 is a small area based index of deprivation, with a relative deprivation score assigned to each meshblock in New Zealand based on the 2001 Census. A meshblock is the smallest geographic unit defined by Statistics New Zealand and contained a median of 90 people in 2001. The index is compiled of 9 census variables that reflect social and material deprivation. These are listed in order of importance in the table below.

The NZDep01 scale of deprivation from 1 to 10 divides New Zealand into tenths of the distribution of the first principal component scores. For example, a value of 10 indicates that the meshblock is in the most deprived 10 percent of areas in New Zealand [10, 11]. This scale can also be aggregated into quintiles (1-5) where quintile 5 equates to the most deprived 20 percent of areas in New Zealand.

As the NZDep index is an area based measure it is useful in illustrating the contextual as well as compositional variables affecting socio-economic status. However due to probable heterogeneity within meshblocks, caution must be exercised when this index is used as a proxy for individual socio-economic status. When NZDep01 is used in this way any socioeconomic gradient present will likely be under-estimated [10, 11].

**Table 1: Census Variables combined in the NZDep01**

Census Variable combined in the NZDep01 (listed in order of decreasing weight in the index)	
Income	People aged 18-59 receiving a means tested benefit
Employment	People aged 18-59 unemployed
Income	People living in equivalised* households with income below an income threshold
Communication	People with no access to a telephone
Transport	People with no access to a car
Support	People aged <60 living in a single parent family
Qualifications	People aged 18-59 without any qualifications
Living Space	People living in equivalised* households below a bedroom occupancy threshold
Own Home	People not living in own home

\*Equivalisation: methods used to control for household composition.

## 2.2.3 Definition of ethnicity

The concept of ethnicity adopted by Statistics New Zealand is a social construct of group affiliation and identity [12]. The present statistical standard for ethnicity states that 'ethnicity is the ethnic group or groups that people identify with or feel they belong to. Thus, ethnicity is self-perceived and people can belong to more than one ethnic group.'

The definition of ethnicity used by Statistics New Zealand is:

'A social group whose members 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.' [12, 13].

NZHS recommends the use of Level 2 ethnicity data [12], however much of the data currently available is prioritised to Level 1 (Māori, Pacific, European, Asian, Other Ethnic Group) or Level 0 (Māori, Pacific, European, Other). Where people indicate multiple ethnic affiliations, they are prioritised to a single 'prioritised ethnic group' according to the following protocol:

- (1) if identify as Māori, assigned to Māori
- (2) if do not identify as Māori, and self-identify as one of the Pacific groups, then assigned to Pacific
- (3) if do not identify as Māori or Pacific, then assigned to non-Māori/non-Pacific otherwise referred to as Other.

## 2.2.4 International classification of disease

International classification of diseases (ICD) is the World Health Organisations internationally accepted classification of disease, injuries and causes of death. ICD codes were used to extract data from NMDS datasets. ICD-9-CM was replaced by ICD-10-AM for hospitalisations from July 1999 and for mortality from January 2000. ICD-9 codes were mapped to ICD-10 codes using standard NZHIS protocols where data required crossed coding periods. Specific codes used in each analysis in this report are given within tables and are listed in Appendix 2.

## 2.2.5 Mortality data

Mortality data, based on death certificate data, was obtained from NZHIS for years 2000 & 2001. As ICD 10 coding replaced ICD 9 in 2000, only data from 2000 and 2001 were sourced.

Overall the completeness and accuracy of death registration and certification in New Zealand, compares favourably to that achieved in other OECD countries. However coding of ethnicity prior to 1995 was based on a different definition to the census denominator data, contributing to the so called “numerator-denominator bias” which meant underestimation of mortality for Māori. Data since 1995 is considerable improved. The quality of the cause of death in mortality data for older age groups is also thought to be less robust arising from the tendency for multifactorial aetiologies and a higher threshold for diagnostic tests or autopsy[14].

## 2.2.6 Hospital data

Hospital inpatient data is sourced from the National Minimum Data Set (NMDS), based on a download from NZHIS in May 2005. Only public hospital inpatient episodes have been included. Calendar years have been used with the latest complete coding available for 2004.

Incidence rates were based on hospital discharge data for specific chronic conditions classified by ICD9 and 10 codes where only the first admission for each individual is counted.

Hospitalisations are counts of the number of episodes of care, not of individual patients. Day cases are included but attendances at outpatient clinics or emergency departments (unless the visit exceeds 3 hours) are not included. Hospitalisations are strictly ‘hospital separations’, however the terms hospitalisation or discharge are used synonymously in this report.

## 2.2.7 Primary care data

The information available on primary care is limited. While PHO enrolment data is reported centrally, the details of the GP interaction (often held electronically within GP Patient Management Systems) are not available centrally or analysed in a systematic way.

Primary care data was sourced from:

PHO enrolment data by age (65+), ethnicity (Māori/Pacific Is grouped, non-Maori/non-Pacific) and gender was sourced from HealthPac in form of Northern Region Quarterly PHO Capitation Reports.

The number of active GPs per 100,000 population was sourced from the Medical Council of New Zealand Workforce Survey, 2003.

National Primary Medical Care Survey (NatMedCa), 2003. This is a nationwide survey undertaken to describe primary health care in New Zealand, including characteristics of providers, practices and patients, the problems presented and management offered. A series of reports provides insight into private general practice, community-governed organisations (e.g. Healthcare Aotearoa), Māori providers of primary care, Accident and Medical clinics, and Hospital emergency departments at a national level with some limited data available by age.

National Survey Data: NZ Health Survey 2002/2003, National Nutrition Survey, and NZ Health of Older People Survey 2000.

## 2.2.8 Community data

The following NGOs were contacted for age-specific data:

- Age-Concern
- Blind Foundation
- Alzheimer's Society
- Stroke Foundation

## 2.2.9 Population surveys

National Health and Disability Surveys

- NZ Health Survey 2002/2003
- NZ Disability Survey
- National Consultation on HOP Strategy
- 2000 New Zealand Survey of Older People in 2000, Statistics NZ.

Local

- Draft HOP strategy Focus Group Consultation

### Analysis

Estimates throughout the document have been rounded, so discrepancies may occur between sums of the component items and totals. Descriptive analysis was carried out using Microsoft Excel.

### Calculating rates

Rates are calculated as the proportion of the population associated with the indicator compared to the total population. The rates are expressed in this report as a rate per 100 (%) or per 100,000. This report primarily uses age-specific rates. Age-specific rates are calculated by dividing the total number of the indicator (e.g. deaths, hospitalisations) by the total population in that age (taken from census data). Rates can be adjusted by a number of variables such as age, gender, and ethnicity. Some graphs include 95% confidence intervals to assist in the interpretation of rate differences.

$$\text{rate (for time period z)} = \left[ \frac{\text{total number of events for indicator x (for period z years)}}{\text{total population at risk *z}} \right] \times 100,000$$

## 2.3 Health needs assessment

### 2.3.1 Rationale for health needs assessment

DHBs face difficult decisions in allocating scarce resources to meet the health needs of their resident populations. It is therefore essential to have a transparent process of determining what the health needs are for the DHB population and of dividing up funding according to priorities. This needs assessment project identifies needs in the DHB region for a specific sub-section of the population. The process of prioritisation is a separate part of the DHB planning cycle, which draws on the needs assessment, and also involves consideration of community views, current services, and cost-benefit analyses.

### 2.3.2 Defining need

Need can be defined as the 'capacity to benefit' [15]. Implicit within this definition is that health status may improve when specific services are provided to meet that need [16]. Four different aspects of need have been classified by Bradshaw (1972):

- *Normative need* is defined by experts and corresponds to what experts want for the community (eg, completed childhood vaccinations, breastfeeding rates, the NZHS 13 priority population health objectives).
- *Expressed need* is need expressed by action - can be inferred from observing how people use services (so measurement of services and their utilisation is taken to be an indicator of expressed need).
- *Comparative need* is that derived from comparing one group of people with another (e.g. measured by inter-regional comparisons).

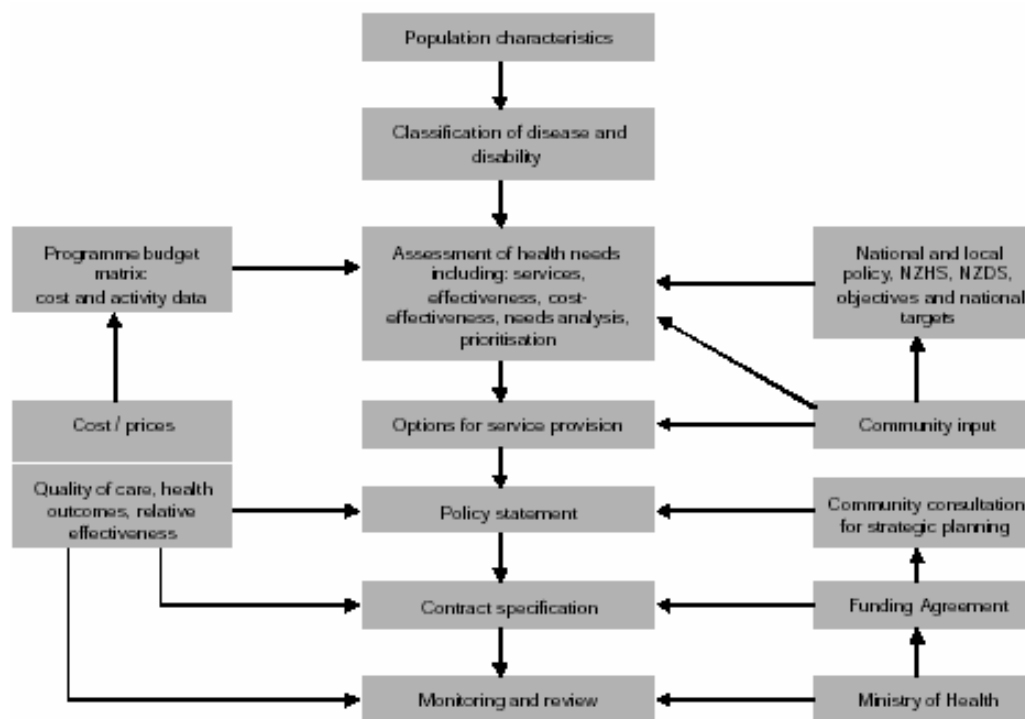
- *Felt need* is what people say is a need, problem or concern for them (measured by qualitative and social research approaches)[15].

A second framework for understanding health need is that proposed by Buetow and Coster (2000). This states that two sets of criteria must hold for individuals or groups to 'need' healthcare. First the care must avoid 'harm'. Second individuals or groups (a) must have a right to care, (b) must want it and (c) some experts much believe they ought to be able to access it.

There is also tension between individual and population need. The interpretation of need is in part contextual.

Each type of need has validity. This project will take a broad approach, considering all four of Bradshaw's concepts of need. Health needs may be measured in many ways. Together with the pragmatic focus on indicators of illness, it is important to bear in mind holistic concepts of wellbeing, and also to look beyond illness status to the determinants of health. By understanding the distribution of social and economic factors within populations it is possible to predict resulting levels of health and illness. Socioeconomic status is recognised as a major source of health needs, incorporating variables such as income, education, employment and deprivation. Ethnicity is another important factor in itself. These combined together with an understanding of the organisational culture of the delivery mechanisms provide an opportunity to develop and plan services that are appropriate and accessible to the population as a whole.

**Figure 4: Schematic outlining process for health needs assessment**



Source: Adapted from Ferguson and Ryder 1991

Notes: NZHS = New Zealand Health Strategy; NZDS = New Zealand Disability Strategy.

Health needs include the wider social, cultural, economic and environmental determinants of health such as deprivation, housing, diet education and employment.

The mandate for a DHB is to protect, improve and maintain the health of their geographical population. Since health is determined by many factors outside of the health sector, it is important to be cognisant of the impact of these wider determinants of health for the region's population and to establish intersectoral collaborations with appropriate agencies.

### **3 Demographic profile of older people in Counties Manukau**

In common with other developed, industrialised countries, New Zealand is undergoing a demographic transition characterised by a gradual increase in the proportion of the population who are aged 65 years and over, so called population ageing [17]. This ageing of the population is driven by declining fertility, the ageing of the “baby boom generation” and an increase in average life expectancy [2, 18]. New Zealand’s population aged 65 years and over, represented 12% of the total population in 2002 [2, 18]. This was similar to Australia (12.7%), the United States (12.3%) and Canada (12.7%), but lags behind Japan (18.4%), Sweden (17.2%) and the United Kingdom (15.9%) who are further advanced in the demographic transition [19].

This chapter describes the current and projected demography of the population of older people residing in the geographical boundaries of Counties Manukau DHB. Where data is available, it explores the differences in demographic composition between the three Territorial Authorities that comprise CMDHB (Franklin, Papakura and Manukau), and with regional and national populations.

The profile provided illustrates the diversity of the current cohort of people aged 65 years and over. In general the older population is characterised by limited ethnic diversity, a higher proportion of females, low incomes, a high rate of home ownership and a high proportion of urbanisation. The number of older people is expected to increase by 172% by 2026. The rate of growth will accelerate after 2010 when the post-war baby boom generation begin turning 65. The population aged 65 years and over, will live longer and be increasingly characterised by ongoing independence, continued participation in work, home and community and health for a longer period of their older age than their predecessors. The increasing numbers of older people aged 85 years and over, increasing numbers of Maori and Pacific peoples, and the high proportion of women in older age are key factors for policy considerations. This chapter explores the impact that projected demographic changes to the older population will have on CMDHB planning and policy development.

#### **3.1 Population size in 2004**

Overall, Counties Manukau Population is characterised by relative youthfulness, and high numbers of Māori and Pacific people. In 2004, it is estimated there are 37,920 people aged 65 years and over comprising 8.9% of the total resident CMDHB population. This compares with a figure of 12.0% for the NZ population as a whole. The proportion of each DHB’s population composed of those over 65 years of age ranges from 8.9% in Counties Manukau to 17.6% in South Canterbury. Overall the South Island DHBs have older populations than the North Island DHBs (13.8% vs 11.5% respectively). In common with other neighbouring DHBs, and NZ as a whole, the largest component of the older population in Counties Manukau is comprised of those in the 65-74 age group, the so called ‘young-old’, reflecting the post-war baby boom generation. Counties Manukau DHB has the lowest proportion of its population in the 75-84 and 85+ age groups in comparison with individual DHBs and NZ as a whole, indicative of its relative youthfulness and high numbers of Māori and Pacific Peoples (Table 2). However in absolute numbers, CMDHB has the fifth largest population aged 65 years and over.

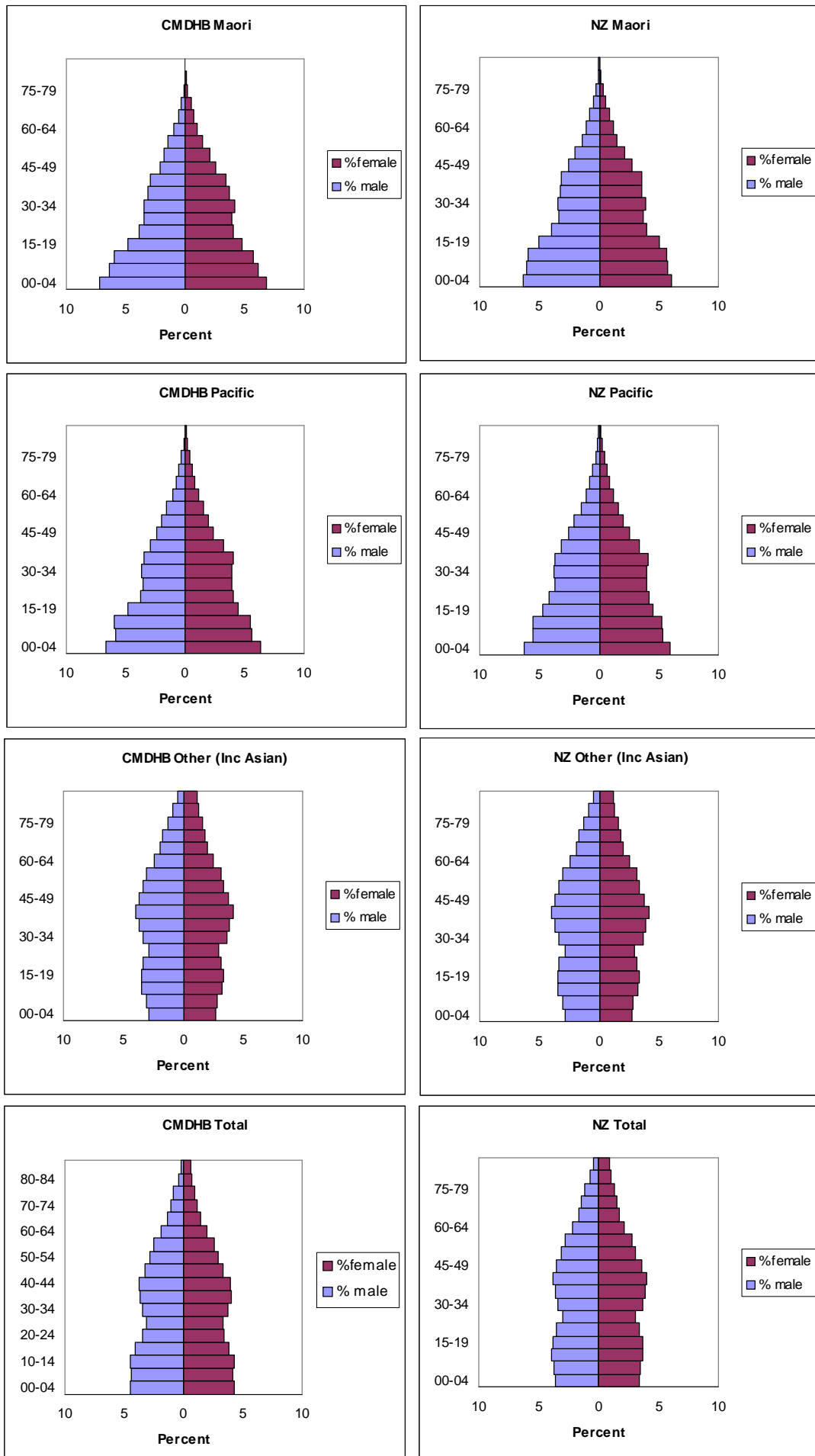
**Table 2: Number and percentage of people in older age groups by DHB, 2004**

Age Group	65-74		75-84		85+		Total 65+		Total
	No	%	No	%	No	%	No	%	No
<b>North Island DHBs</b>									
Auckland	20,310	4.8%	14,120	3.4%	5,690	1.4%	40,120	9.5%	420,490
Bay of Plenty	15,660	8.1%	10,620	5.5%	3,010	1.6%	29,290	15.2%	193,160
Capital Coast	14,670	5.4%	9,730	3.6%	3,120	1.2%	27,520	10.2%	270,610
Counties Manukau	21,870	5.1%	12,410	2.9%	3,640	0.9%	37,920	8.9%	426,780
Hawkes Bay	10,750	7.2%	7,280	4.9%	2,290	1.5%	20,320	13.5%	149,970
Hutt Valley	8,240	6.0%	5,190	3.7%	1,670	1.2%	15,100	10.9%	138,410
Lakes District	6,730	6.6%	3,900	3.8%	1,140	1.1%	11,770	11.5%	101,960
Midcentral	11,700	7.2%	7,860	4.8%	2,420	1.5%	21,980	13.5%	162,660
Northland	11,880	8.0%	6,850	4.6%	1,850	1.3%	20,590	13.9%	147,845
Tairāwhiti	2,830	6.3%	1,820	4.1%	530	1.2%	5,180	11.5%	44,930
Taranaki	7,960	7.6%	5,570	5.3%	1,790	1.7%	15,330	14.5%	105,470
Waikato	22,350	6.6%	14,210	4.2%	4,330	1.3%	40,890	12.1%	338,140
Wairarapa	3,350	8.5%	2,270	5.8%	680	1.7%	6,310	16.0%	39,380
Waitemata	27,820	5.7%	18,360	3.8%	5,700	1.2%	51,880	10.7%	484,700
Whanganui	5,010	7.8%	3,340	5.2%	1,090	1.7%	9,450	14.8%	63,890
<b>South Island DHBs</b>									
Canterbury	31,440	6.8%	22,750	4.9%	7,320	1.6%	61,510	13.3%	463,400
Nelson Marlborough	9,840	7.4%	7,000	5.3%	2,170	1.6%	19,020	14.3%	132,670
Otago	13,450	7.3%	9,550	5.2%	2,980	1.6%	25,980	14.2%	183,010
South Canterbury	4,910	9.1%	3,440	6.4%	1,110	2.1%	9,460	17.6%	53,780
Southland	7,620	7.0%	4,870	4.5%	1,430	1.3%	13,925	12.9%	108,270
West Coast	2,370	7.7%	1,470	4.8%	400	1.3%	4,245	13.8%	30,700
North Island Total	191,150	6.2%	123,550	4.0%	38,950	1.3%	353,657	11.5%	3,088,410
South Island Total	69,645	7.2%	49,085	5.1%	15,410	1.6%	134,141	13.8%	971,850
<b>NZ Total</b>	<b>260,795</b>	<b>6.4%</b>	<b>172,640</b>	<b>4.3%</b>	<b>54,360</b>	<b>1.3%</b>	<b>487,795</b>	<b>12.0%</b>	<b>4,060,260</b>

Source: Statistics NZ – Census 2001, projected figures for 2004, resident population.

Examining the population pyramids by ethnicity for Counties Manukau highlights the relative youthfulness of Māori and Pacific populations in comparison with Other (inc Asian) (Figure 5). This is evident in the typically pyramid shaped charts of Māori and Pacific in comparison with the bimodal elongated chart for Other (incl Asian). The age distributions by ethnicity for Counties Manukau approximate those for New Zealand. However, when comparing the pyramids for the total CMDHB and NZ, the predominance of CMDHB population less than 40 years of age, particularly children less than 15 years is evident. As shown by the age-sex distributions by ethnicity, females dominate in the older age groups, particularly amongst those of non-Maori, non-Pacific ethnicity.

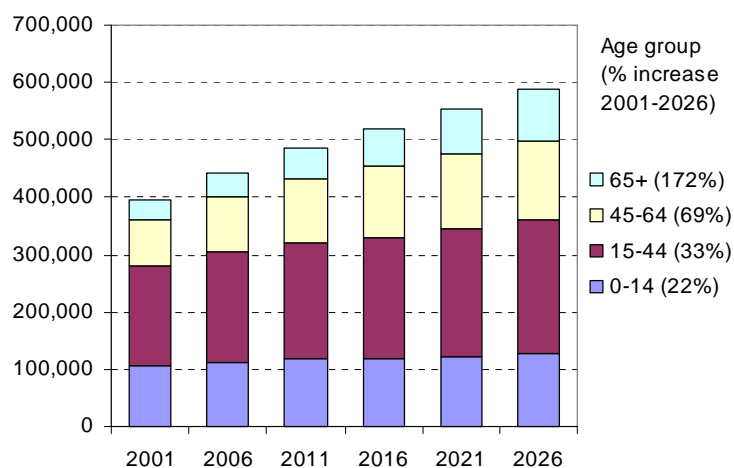
Figure 5: Population pyramids for Counties Manukau and NZ, by ethnicity, 2004



## 3.2 Population growth

Counties Manukau continues to be one of the faster growing DHBs, with an average increase in population of approximately 2-3% per annum. Based on Statistics NZ medium growth assumptions, the CMDHB population is predicted to increase between 2001 and 2026 by 50% overall, equating to some 589,000 people. The largest proportional increase is evident in the over 65 year age group, with a nearly 3-fold increase (172%) from 33,790 to 92,020 people in this time period (Table 3, Figure 4). The large projected increase, particularly from about 2010 onwards, correlates to the baby boom generation reaching 65 years. It is important to be mindful that the precision of projections decrease the further they go into the future, because the assumptions around fertility, net migration and mortality on which they are based are best estimates [2].

**Figure 6: Projected change in CMDHB population by age group, 2001-2026**



**Table 3: CMDHB projected population growth by age group 2001-2026**

Year	0-14	15-44	45-64	65+	Total
2001	104,480	174,410	81,030	33,790	393,710
2006	113,300	191,750	96,980	41,140	443,170
2011	117,160	203,590	112,940	50,390	484,080
2016	119,720	211,150	124,660	63,170	518,700
2021	122,390	222,030	132,950	76,410	553,780
2026	127,710	232,040	137,230	92,020	589,000
% change 2001-26	22%	33%	69%	172%	50%

Source: Statistics NZ ethnic-specific medium projections Jun 2004 produced for MOH

Within the population 65+ the greatest increase will be in the 85+ age group – a nearly 3.5 fold increase over this time period (244%) (Table 4). In comparison, the total CM population aged 65 years and over will increase by 172%, and the total CM population by 50% (Table 4). The larger increase in the very old reflects both increasing longevity and the baby boom generation nearing 85 around 2030. Thus, as well as growth of the population aged 65+, CM will experience a dramatic increase of those aged 85 years and over.

**Table 4: CMDHB projected population growth by age, 65 years of age and over**

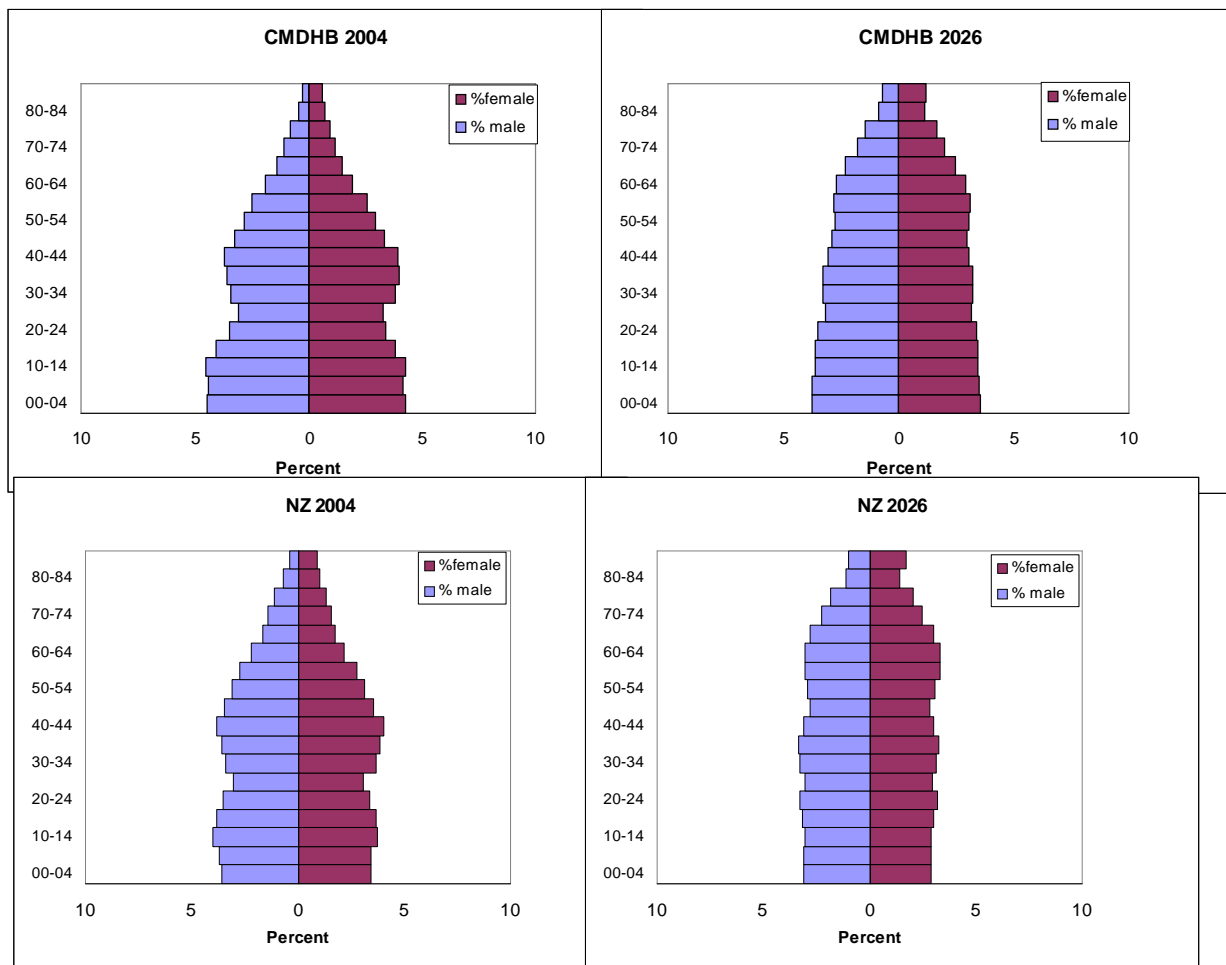
Year	65-74		75-84		85+		Sub-total 65+		Total
	No.	%#	No.	%#	No.	%#	No.	%#	No.
2001	19,560	5.0%	10,940	2.8%	3,290	0.8%	33,790	8.6%	393,710
2006	23,850	5.4%	13,160	3.0%	4,130	0.9%	41,140	9.3%	443,170
2011	29,940	6.2%	15,080	3.1%	5,370	1.1%	50,390	10.4%	484,080
2016	37,560	7.2%	18,670	3.6%	6,940	1.3%	63,170	12.2%	518,700
2021	44,130	8.0%	23,710	4.3%	8,570	1.5%	76,410	13.8%	553,780
2026	50,520	8.6%	30,170	5.1%	11,330	1.9%	92,020	15.6%	589,000
% Change 2001-2026	158%		176%		244%		172%		50%

# % of total population all ages.

Source: SNZ medium growth assumptions Sept 2004, produced for MOH

Projected changes in the population age composition are summarised in Figure 7 below.

**Figure 7: Population pyramids for CMDHB and NZ by gender, 2004 and 2026.**



### 3.3 Gender

Currently the average life expectancy of females exceeds that of males, leading to a preponderance of older females [4] (Table 5). However, at a population level, this preponderance is decreasing as a result of convergence of mortality rates for aetiologies such as lung cancer and greater relative improvement in life expectancy for older males in comparison with females[2].

The Statistics NZ 2004 estimate of the 65 and over population of Counties Manukau is 21,090 females and 16,830 males, corresponding to 56% and 44% of the 65+ population respectively. By 2026, it is projected that females will comprise 55% (N=50,330) and males 45% (N=41,690) (Table 5).

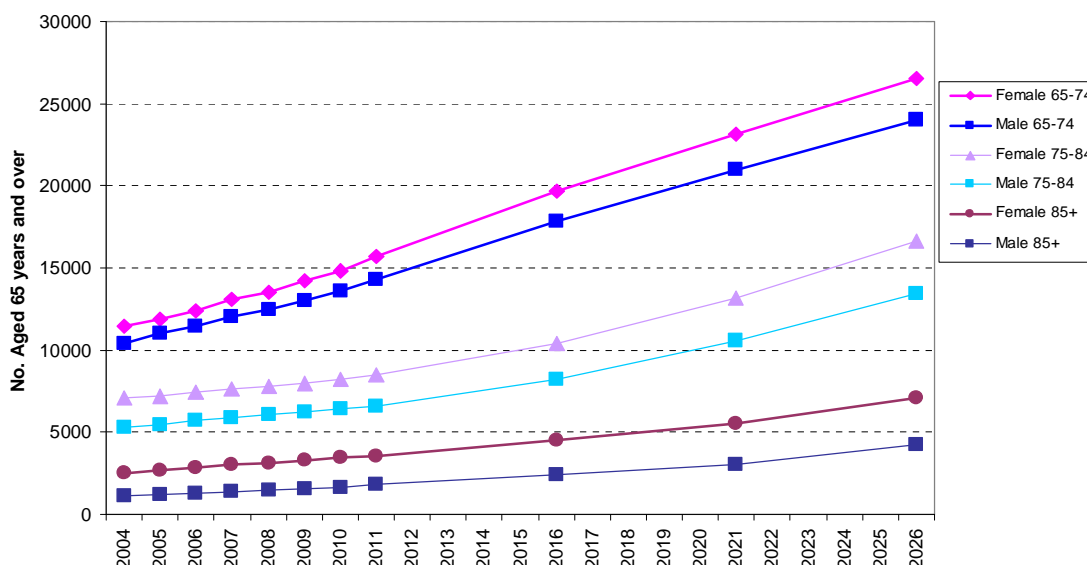
Figure 8 illustrates the increase in absolute numbers of the population aged 65 and over, by age groups.

**Table 5: Projected CM population aged 65+ by gender, 2004-2026**

Year	Population Aged 65 Years and Over				Total
	Females		Males		
	No.	% <sup>#</sup>	No.	% <sup>#</sup>	
2004	21,090	55.6	16,830	44.4	37,920
2005	21,850	55.3	17,630	44.7	39,480
2006	22,740	55.3	18,400	44.7	41,140
2007	23,740	55.2	19,270	44.8	43,010
2008	24,520	55.1	20,010	44.9	44,530
2009	25,550	55.1	20,860	44.9	46,410
2010	26,590	55.1	21,710	44.9	48,300
2011	27,760	55.1	22,630	44.9	50,390
2016	34,540	54.7	28,630	45.3	63,170
2021	41,820	54.7	34,590	45.3	76,410
2026	50,330	54.7	41,690	45.3	92,020

<sup>#</sup> % of population aged 65+ years

**Figure 8: CM population aged 65 years and over, by age group and gender, 2004-2026.**



### 3.4 Ethnicity

In Counties Manukau in 2004, Māori are estimated to comprise 5% of the population 65 years of age and over, followed by Asian 8%, Pacific 9% and Others 78%. These figures are based on self-reported ethnicity that has been prioritised according to Statistics NZ protocols (see section 2.2.3 for details).

The relative youthfulness of CM Māori, Pacific and Asian peoples is reflected in the small numbers in older age groups, particularly those over 85+ years of age (Table 6). For example, of the total CM population (all ages and ethnicities), 2% are Māori aged 65-74, 0.5% are Māori aged 75-84 and 0.1% are Māori aged 85 years and over.

**Table 6: CM population aged 65+, number and percentage by ethnicity, 2004**

Year	65-74		75-84		85+		Total - 65+		Total - all
	No.	%	No.	%	No.	%	No.	%	No.
Māori	1,480	2.0%	350	0.5%	40	0.1%	1,870	2.5%	73,350
Pacific	2,340	2.7%	940	1.1%	170	0.2%	3,450	4.0%	85,700
Asian	2,390	3.8%	680	1.1%	110	0.2%	3,190	5.0%	63,600
Other	15,650	7.7%	10,430	5.1%	3,320	1.6%	29,410	14.4%	204,120
CMDHB total	21,870	5.1%	12,410	2.9%	3,640	0.9%	37,920	8.9%	426,780
NZ total	260,790	6.4%	172,640	4.3%	54,360	1.3%	487,790	12.0%	4,060,260

Source: SNZ medium projection for MoH, Sept 2004.

### 3.4.1 Ethnic diversity projections for CM older population

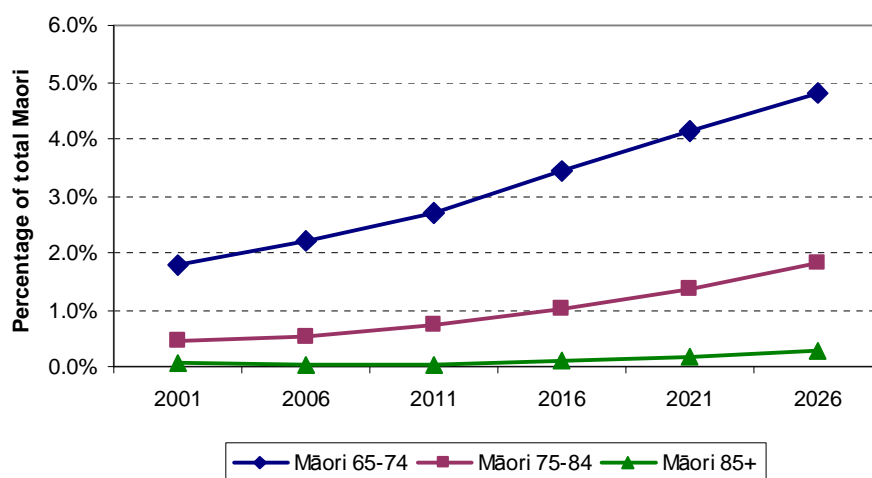
The ethnic diversity amongst older New Zealanders will increase with population ageing, given increasing life expectancy for Māori, Pacific and Asian Peoples and recent immigration trends. Significant increases in the number of older Maori, Pacific and Asian peoples are projected [2]. The largest increases in the proportion of CM population over 65 years will occur in those affiliated to Asian ethnic groups (272%), followed by Māori (167%), Pacific (141%) and then Other (66%) (for period 2001-2016) (Table 7, & Figure 10 & 6). For the population overall (all ages) the largest percent change in projected population growth for this period will be for Asian (101%), followed by Pacific (46%), Māori (30%) and Other (8%).

#### 3.4.1.1 Projected growth in CM Maori population over 65 years

In 2004, Statistics NZ projected 1870 (2.5%) of a total 73,350 Maori in Counties Manukau were aged 65 or over. Maori comprise a much smaller proportion of the population aged 65+ (5%) than they do for the total CM Maori population (17.2%). This is attributed to both higher fertility rates but also to higher mortality rates in earlier age groups for Maori, resulting in a more youthful age structure (Figure 4) [2].

The total Māori population in CM is projected to increase to 105,570 by 2026, equating to 18% of the total CM population. Approximately 8% of the CM population aged 65+ will self-identify as Māori (n=7,280) and Māori 65+ will comprise 7% of the total CM Māori population. There is projected to be a 52% increase in the total number of Māori in CM between 2001-2026 and a 349% increase (4-fold) in the number of Māori aged 65 years and over within this period. Māori aged 65-74 will still be the greatest proportion of Māori aged 65+ (69.5%) but increasing numbers will be living to older ages (Table 7 & Figure 9).

**Figure 9: Projected increase in the percentage of Māori aged 65+ as a proportion of total Māori population in Counties Manukau, 2001-2026.**

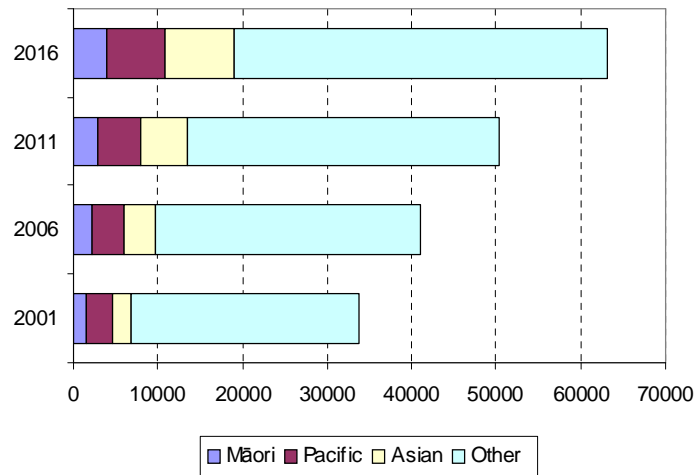


**Table 7: Estimated size of projected population growth from 2001-2016 for each prioritised ethnic group**

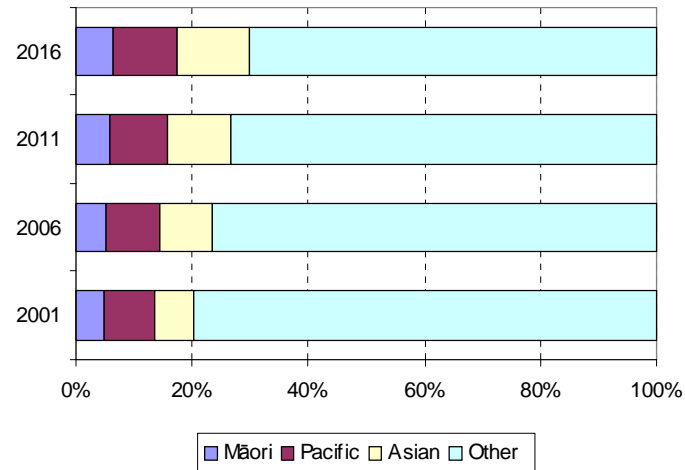
Year	65-74				75-84				85+				Total 65+					Grand Total
	Māori	Pacific	Asian	Other	Māori	Pacific	Asian	Other	Māori	Pacific	Asian	Other	Māori	Pacific	Asian	Other	Total	
2001	1250	2000	1740	14570	320	780	500	9340	50	160	80	3000	1620	2940	2320	26910	33790	393710
2006	1680	2600	2828	16743	400	1050	813	10898	40	180	130	3780	2120	3830	3770	31420	41140	443170
2011	2220	3470	4133	20118	620	1360	1188	11913	40	270	190	4870	2880	5100	5510	36900	50390	484080
2016	3070	4580	6018	23893	920	1830	1729	14191	80	400	277	6183	4070	6810	8020	44267	63170	518700
Change No.'s 2001-16	1820	2580	4278	9323	600	1050	1229	4851	30	240	197	3183	2450	3870	5700	17357	29380	124990
% Change 2001-16	156%	138%	272%	67%	231%	141%	272%	50%	69%	185%	272%	112%	167%	141%	272%	66%	90%	31%

Source: SNZ, projections for MOH, 2004

**Figure 10: Projected number of the CM population aged 65 years and over, by ethnicity (2001-2016)**



**Figure 11: Projected proportion of the CM population aged 65 years and over by ethnicity (2001-2016)**



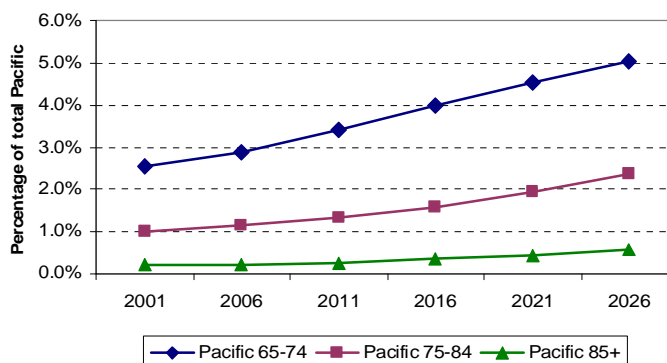
### 3.4.1.2 Projected growth in CM Pacific population over 65 years

Pacific peoples are also a youthful population with only 4.0% (n=3450) of the total estimated 85,700 (20%) CM Pacific population aged 65 years or over in 2004 (Table 7, Figure 4). The youthful age structure reflects the higher mortality at younger ages, higher fertility rates, predominance of younger immigrants and evidence of return migration of some older Pacific peoples [2]. Re-migration for social or medical care may be balancing or even out-weighing this more recently.

It is projected that the CM Pacific population aged 65 and over will increase in absolute numbers from 2,940 to 11,350 Pacific people aged 65 years and over from 2001 to 2026, a more than 3-fold increase of 286%. Older Pacific peoples (≥ 65 years) are projected to comprise 8% of the total CM Pacific population (all ages) by 2026, and 12.3% of the total CM population (all ethnicities)

65 years and over, compared to 3.7% and 8.7% respectively in 2001. The largest proportion of the Pacific population 65 years and over is aged 65-74, but the numbers and proportion of those in older age groups is increasing. The percent change for the period 2001-2026 will be greatest for those aged 75-84 (332%) and 85+ (413%) in comparison to those 65-74 (258%) (Table 7 & Error! Reference source not found.).

**Figure 12: Pacific aged 65+ as a proportion of total Pacific population, CM, 2001-2026**

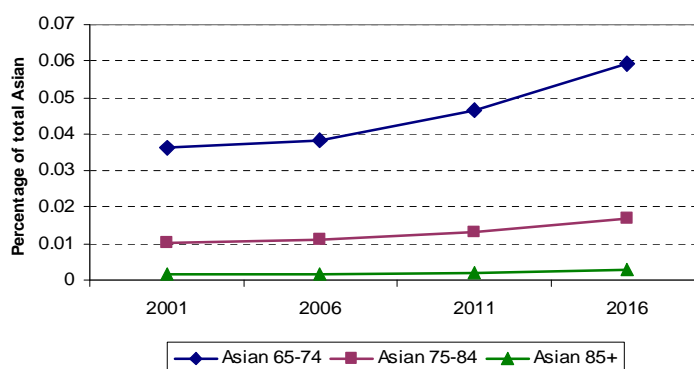


### 3.4.1.3 Projected growth in CM Asian population over 65 years

In 2001 2320 people aged 65 years and over self-identified in the Census as belonging to an Asian ethnic group – Chinese and Indian being the main representatives.

Population projections for Asian peoples extend to 2016 only currently as there is larger uncertainty about future migration patterns [2] and as the absolute numbers are small. By 2016, the number of people identifying as one of the Asian ethnicities is projected to increase to 8,023. This increase represents a 3-fold (272%) change from 2001 to 2016 (Table 7). Older Asian people will make up an increasing proportion of the CM Asian community (4.8% in 2001 → 7.9% in 2016) and an rapidly increasing proportion of the total CM population aged 65 years and over (6.9% in 2001 → 12.7% in 2016). Nationally, older Asian will increase from 4.3% of the total NZ Asian population in 2001, to comprise 7.1% by 2016 (Error! Reference source not found.).

**Figure 13: Projected increase in the percentage of Asian aged 65+ as a proportion of total Asian population in Counties Manukau, 2001-2016**

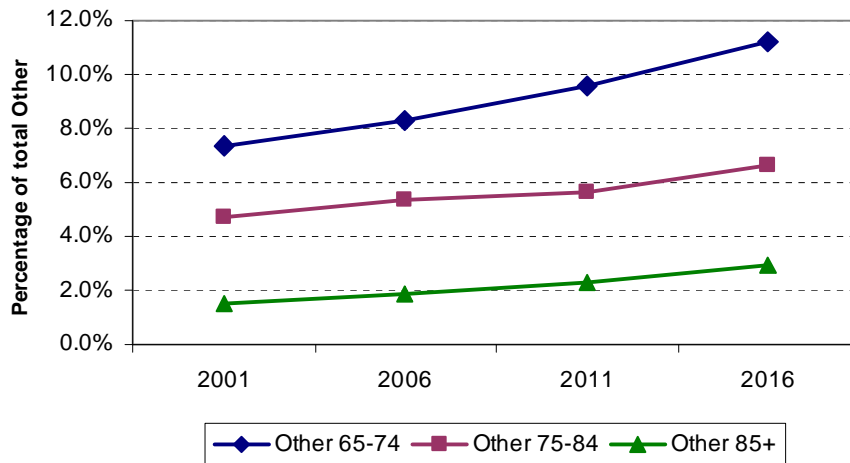


### 3.4.1.4 Projected growth in CM Other population over 65 years

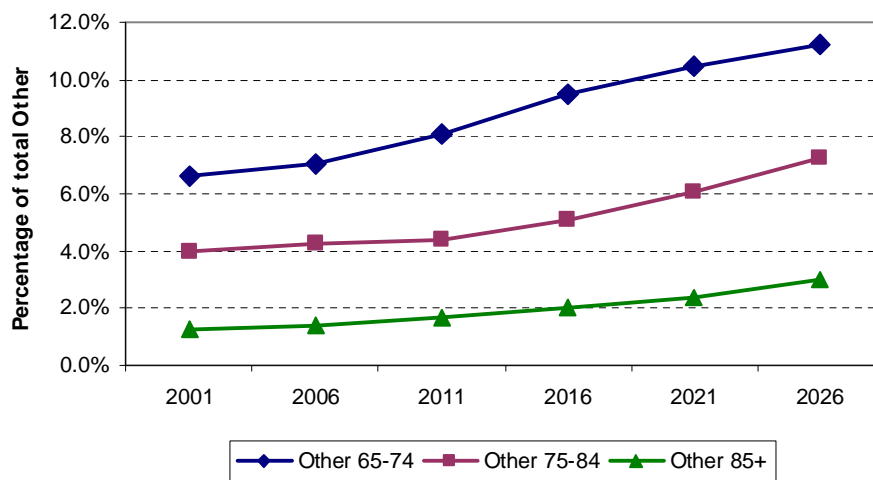
Older Other (excl Asian) peoples make up the largest proportion of the CM population aged 65 years and over, and are mainly of European extraction. The number of people classified

as Other aged 65 years and over is projected to increase in absolute numbers from 26,910 in 2001 to 44,267 in 2016. Older Other adults comprised one in seven (13.6%) of the total population in 2001, but will be one in five of the CM population by 2016 (20.8%). This represents a total change of 64% for the Other group over the period 2001-2016, less than Māori (151%), Pacific (132%) and Asian (246%) peoples, for the equivalent period (**Error! Reference source not found.** & Figure 15).

**Figure 14: Other (exclusive of Asian) aged 65+ as a proportion of total Other population in Counties Manukau, 2001-2026.**



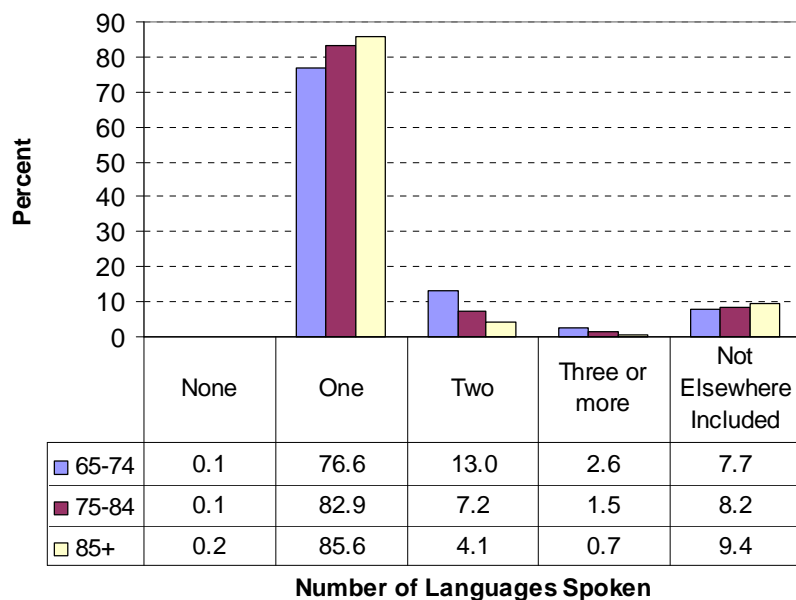
**Figure 15: Other including Asian aged 65 years and over as a proportion of total Other population in Counties Manukau, 2001-2026.**



### 3.5 Languages spoken

Language data is available for 89% of the CM population aged 65+ who completed the 2001 Census. In line with national statistics, the majority of older people in CM are English language speakers. Of the population aged 65-74 in CM, approximately 70% speak 'English only', 11% 'English and Other (non Māori)', 3.3% 'Māori and English', 0.2% 'Māori only' and 8.5% 'Other only'. In the older age-band cohorts, namely 75-84 and 85+ years, the proportion of each age band speaking 'English only' increases, while the proportion of bi and multilingual speakers decreases. A small proportion of all older people in Counties Manukau (aged 65+) were Māori language speakers in 2001 (approximately 3%) (Table 8).

**Figure 16: Spoken language, CM population percentage, Census 2001**



Source: Statistics NZ, 2001 Census of Population and Dwellings

**Table 8: Number and percentage of people fluent in language by age group, as a proportion of population in the age group who responded.**

Language	Age group							
	65-74		75-84		85+		Total 65+	
	No.	%	No.	%	No.	%	No.	%
Māori only	30	0.2	3	0.0	0	0.0	33	0.1
English only	12,882	68.5	8,274	78.2	2,646	82.4	21,303	72.0
Māori & English	624	3.3	114	1.1	24	0.7	742	2.5
Māori & other (Not English)	27	0.1	18	0.2	0	0.0	45	0.2
English & other (not Māori)	2,079	11.1	663	6.3	114	3.5	2,759	9.3
Māori, English, & other	99	0.5	39	0.4	6	0.2	139	0.5
Other only (not M or E)	1,602	8.5	576	5.4	117	3.6	2,192	7.4
No language	15	0.1	18	0.2	3	0.1	33	0.1
Not elsewhere included	1,449	7.7	873	8.3	303	9.4	2,338	7.9
Total responses	18,807	96.7	10,578	98.5	3,213	101.5	29,585	88.7
Total population	19,455	100.0	10,740	100.0	3,165	100.0	33,360	100.0

Source: Statistics NZ, 2001 Census of Population and Dwellings

A similar pattern is seen when looking at the total number and percentage of people who speak English, Māori, Samoan, NZ Sign, and Other languages by age groups (Table 9). Here the proportion of people who are documented as having no language increases in the oldest cohort of those 85+ years.

**Table 9: Number and percentage of older people in CM who can communicate in English, Māori, Samoan, NZ Sign, and other languages, 2001**

Language	Age group							
	65-74		75-84		85+		Total 65+	
	No.	%	No.	%	No.	%	No.	%
English	15,681	80.6	9,141	85.1	2,793	88.2	27,615	82.8
Māori	774	4.0	219	2.0	33	1.0	1,026	3.1
Samoan	774	4.0	258	2.4	51	1.6	1,083	3.2
NZ Sign	87	0.4	39	0.4	18	0.6	144	0.4
Other	3,006	15.5	1,032	9.6	177	5.6	4,215	12.6
None	18	0.1	21	0.2	30	0.9	69	0.2
Total population	19,455	100.0	10,740	100.0	3,165	100.0	33,360	100.0

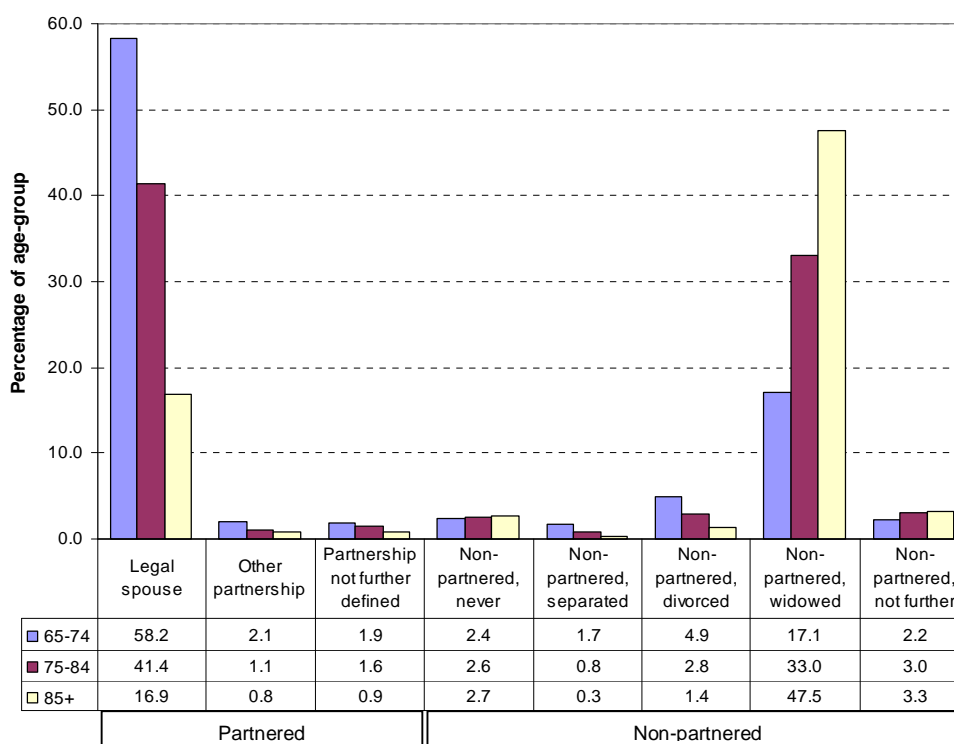
Source: Statistics NZ, 2001 Census of Population and Dwellings. Includes people stating one or more languages or none

### 3.6 Marital status

Marital status is defined by Statistics New Zealand as a person's reported status with respect to the marriage laws or customs of the country. There are two types of marital status reported: Legal Marital Status and Social Marital Status. Legal Marital Status is a person's status with respect to registered marriage. Social Marital Status is a person's status with respect to consensual union. People who are in a consensual union are partnered; people who are not in a consensual union are non-partnered. For the purpose of this report social marital status will be discussed as it better represents the breadth of relationship types for the population.

Data on social marital status is available for 32,623 adults aged over 65+ years in CM who completed Census 2001. Not unexpectedly the proportion of the population who are partnered decreases with age (Figure 17).

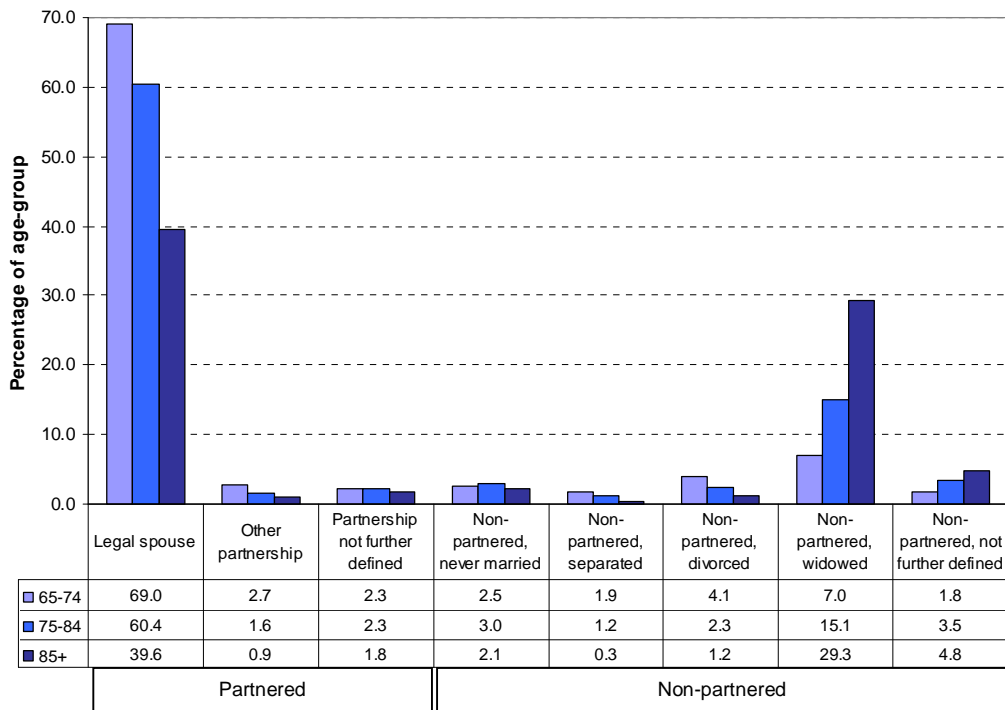
**Figure 17: Social marital status by age-group, for adults aged 65+ in CM, 2001**



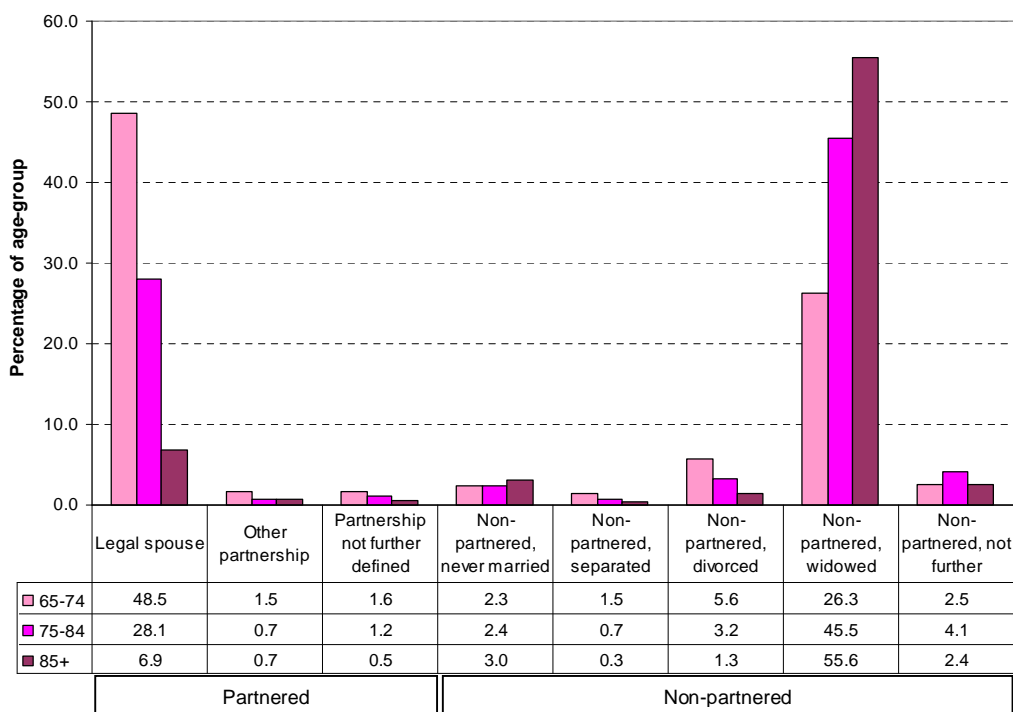
Source: Statistics NZ, 2001 Census of Population and Dwellings

With life expectancy of females exceeding that of males, there are clear differences in the social marital patterns for each age group by gender. For both males and females the proportion of the population within each age group who are partnered decreases with age. Conversely the proportion of the population within each age group who are non-partnered widowed increases with age. The proportion of the population within each age-group who are non-partnered, separated or divorced also decreases with age. The most striking difference between males and females is that a higher proportion of males compared to females are in legally married within each age group, and a higher proportion of females are widowed (Figure 17 & Figure 18).

**Figure 18: Social marital status by age-group, for males aged 65+ in CM, 2001**



**Figure 19: Social marital status by age-group, for females aged 65 + in CM, 2001**



Source: Statistics NZ, 2001 Census of Population and Dwellings

### 3.7 Socioeconomic status

An adequate and stable income is fundamental determinant of the ability to age in a positive and productive way [3, 4, 20, 21]. The government faces mounting fiscal challenges in meeting the needs of an increasingly ageing population. And there are significant implications on the working age population to both support the retired members of our community and save for their own retirement.

The Super 2000 Taskforce initiated research on the living standards of older people suggests that material wellbeing in old age is not only a reflection of their current net annual income, but an accumulation of factors characterising the individual's current circumstances and previous life course [22]. In addition the absence of political consensus towards retirement funding, adds to insecurity about future government entitlements.

The older population tends to be “income poor, asset rich”, reflected in relatively low income levels, but higher levels of home ownership.

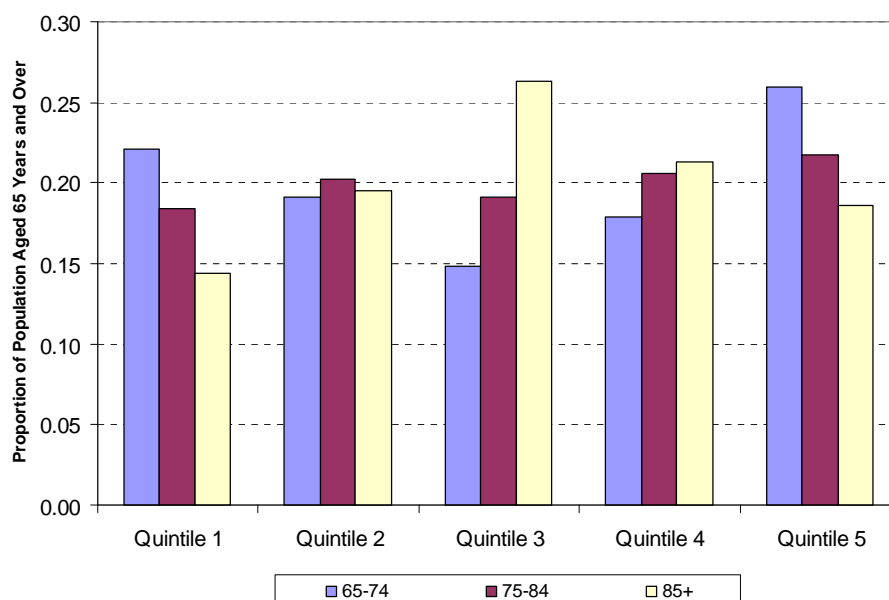
There is strong evidence that socioeconomic status impacts in a predictable way on the health and wellbeing of a population. A persistent socioeconomic gradient is seen for most aetiologies, with those with greatest levels of socioeconomic deprivation more likely to have poorer health [20, 23, 24].

There are a number of measures of socioeconomic status. The following discourse will examine an area-based measure, NZDep01 and also personal level indicators such as income level, employment, home ownership, access to telephone and transport.

#### 3.7.1 Socioeconomic status by NZDep01

Figure 20 shows the proportion of adults aged 65-74, 75-84, 85+ by NZDep01 quintiles. The distribution of people in the 65-74 age group is U-shaped with a higher proportion of people in the lowest and highest quintiles and fewer in the middle quintiles. This may reflect the increasing number of people remaining in the workforce past the age of 65 years. The pattern for the 75-84 year old age group is more uniformly distributed across quintiles. The distribution of those aged 85 years and older has a ‘normal’ distribution with peak in the middle quintile.

**Figure 20: Proportion of older adults usually resident in CM by NZDep01 quintiles**



A comparison of the NZDep01 measure of area-based deprivation for people aged 65 years and over in CM with other Auckland regional DHBs and national values is presented below in Table 10 and

Figure 21. Counties Manukau has 7710 people aged 65 years or over (24% of the CM population 65+ years of age) resident in quintile 5 (by definition the 20% of New Zealand people living in the most deprived areas). This is the second highest absolute number after Waikato (8595) and the 6<sup>th</sup> highest proportion after Midcentral (24%), Lakes (27%), Whanganui (29%), Northland (32%), and Tairāwhiti (40%). Concordant with the total CM population (all ages), there is also a marginally greater proportion of people, aged 65 years and over, living in the least deprived areas (quintile 1) in CM (Table 10 & Figure 22). In contrast, neighbouring Waikato DHB has a steady upwards trend with a smaller proportion of people in the least deprived areas and increasing proportion in more deprived areas (Table 10 & Figure 22).

Figure 21).

**Table 10: Comparison of area-based deprivation (NZDep01) ages 65+ by DHB**

Population aged 65+	% Quintile 1	% Quintile 2	% Quintile 3	% Quintile 4	% Quintile 5
<b>North Island DHBs</b>					
ADHB	24.5	18.0	20.0	19.2	18.2
Bay of Plenty	8.9	21.3	25.7	23.2	20.9
Capital Coast	32.2	21.3	21.1	15.2	10.2
CMDHB	20.1	19.5	17.4	19.1	23.9
Hawkes Bay	16.6	14.7	23.8	23.5	21.3
Hutt Valley	25.6	17.4	20.3	20.4	16.2
Lakes District	15.2	22.8	16.4	18.8	26.8
Midcentral	12.3	16.0	19.9	27.7	24.1
Northland	4.8	15.0	20.6	28.1	31.5
Tairāwhiti	10.8	8.3	18.7	22.0	40.3
Taranaki	11.5	17.9	22.8	28.3	19.5
Waikato	13.1	18.8	21.4	23.7	22.9
Wairarapa	14.9	20.8	21.3	30.5	12.5
WDHB	22.9	26.0	24.5	19.8	6.9
Whangarei	10.8	16.8	16.3	27.0	29.1
<b>South Island DHBs</b>					
Canterbury	22.1	24.1	26.2	18.9	8.6
Nelson Marlborough	13.7	21.8	30.4	27.6	6.5
Otago	15.8	24.9	24.7	21.8	12.8
South Canterbury	13.1	25.3	27.2	24.7	9.6
Southland	22.1	19.6	24.6	19.8	13.9
West Coast	5.3	17.8	17.5	39.8	19.7
NZ 65+	18.0	20.5	22.6	22.0	16.9
NZ All ages	20.0	20.0	20.0	20.0	20.0

There are clear ethnic disparities in socioeconomic status in CM region. The overall pattern is persistent across all age groups, with Pacific people followed by Māori, and then Others residing in the areas with lowest socioeconomic status as defined by NZDep01. Figure 23 depicts the proportion of the 65 years and over population by NZDep01 Quintiles by ethnic group. Approximately 94% of all Pacific, 77% of all Māori and 37% of people defined as Other aged 65 years and over in CM reside in the two most deprived areas (Quintiles 4-5). Notably the distribution across quintiles is more uniform for Others in comparison with Māori and Pacific peoples, where few Māori or Pacific people live in the relatively least deprived areas (Quintiles 1-2). This distribution mirrors that seen in the under 65 population.

Figure 21: CMDHB neighbouring DHBs by NZDep01 quintiles aged 65+, 2001

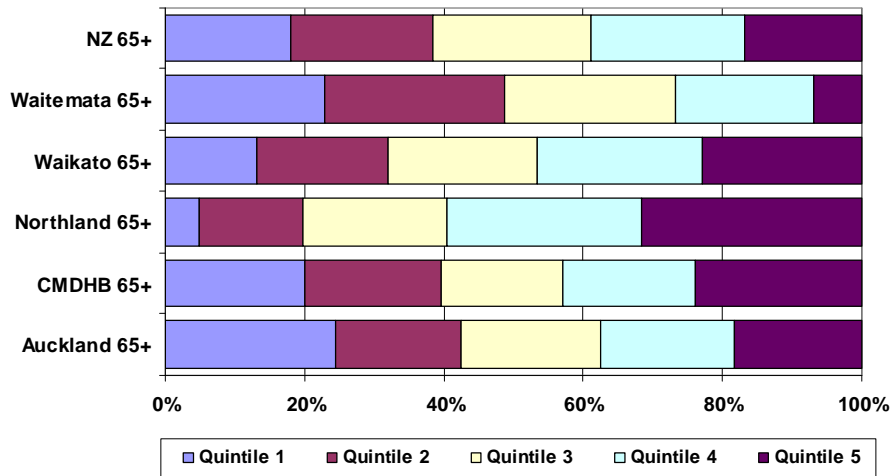


Figure 22: Proportion of total and 65+ populations by NZDep01 quintiles, CM and NZ

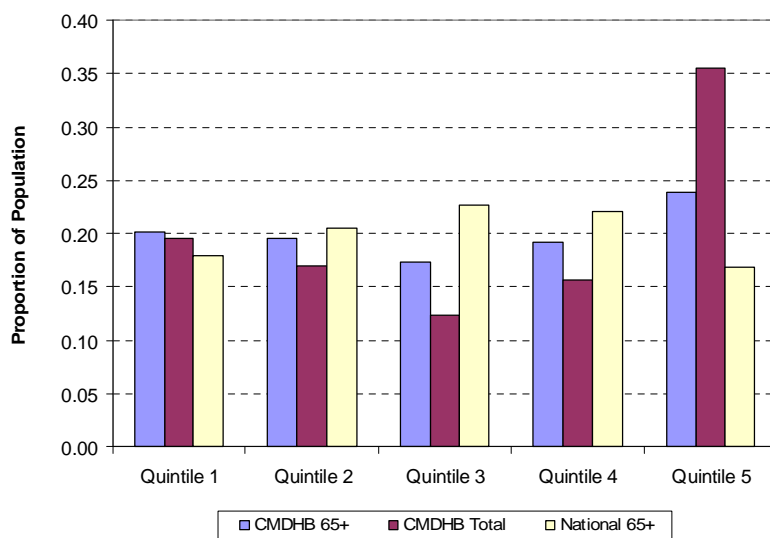
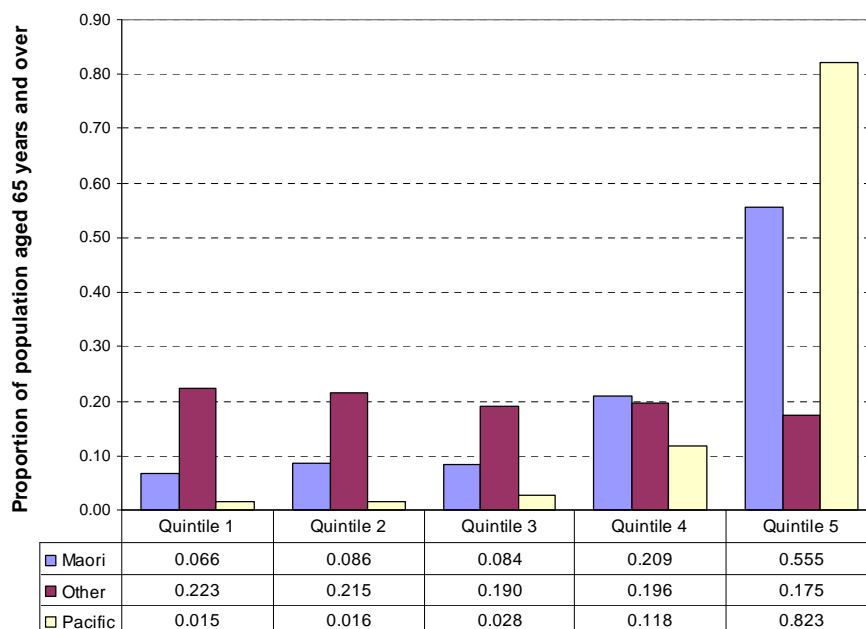


Figure 23: CMDHB population aged 65+ by NZDep01 quintile by ethnicity



### 3.7.2 Income level and source

On average the older population have lower income levels than the working age population, indicative of a smaller proportion of the older population being in paid employment [1, 2]. However, there is a trend for greater numbers of people aged 65 years and over to persist in some form of paid employment. This trend was precipitated in part after 1991, when the entitlement age for NZ Superannuation was raised from 60 to 65 years.

The level of income amongst the older population varies by age, gender, ethnicity and TLA (Table 12,

Figure 21 & Figure 22). As a high proportion of the population aged 65 years and over receives NZ Superannuation, it is useful to be mindful of these levels in considering the subgroup variation. The 2001 rates of NZ Superannuation are listed in Table 11 below.

**Table 11: NZ Superannuation after-tax rates, 2001**

Superannuation Rates 2001	Fortnightly		Annual
	(before tax)	(after tax)	(after tax)
Married (both partners qualify)	\$428.76 each	\$360.82 each	\$9,382
Married (only one partner qualifies)	\$407.34 each	\$344.02 each	\$8,945
Single (living with others)	\$520.24	\$433.00	\$11,257
Single (living alone)	\$565.56	\$469.10	\$12,196

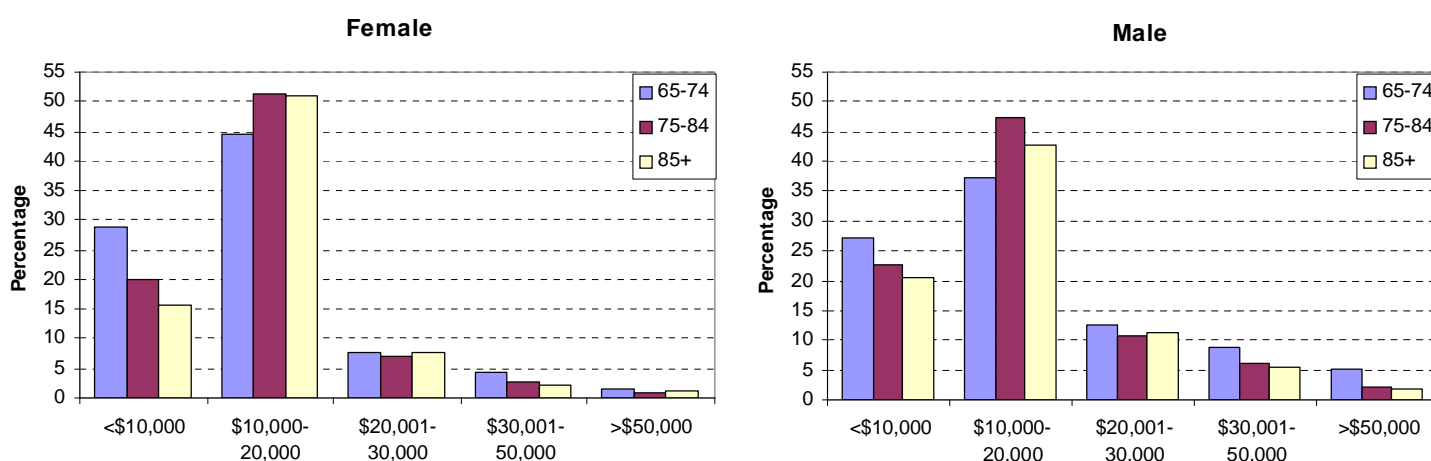
Source: <http://www.moneytalk.co.nz/> (accessed 23 May 2005)

For the year prior to the 2001 Census 28% of all 65-74 year olds, 21% of all 75-84 year olds and 18% of all 85 years olds in CM had an annual income of \$10,000 or less, compared to 25%, 20%, & 18% respectively for NZ as whole. Most adults aged 65 years and over reported a level of personal income consistent with Superannuation. Males were marginally more likely to report incomes over \$20,000 (Table 12 & Figure 24).

**Table 12: Level of personal income for residents of CM by age-group and gender, 2001**

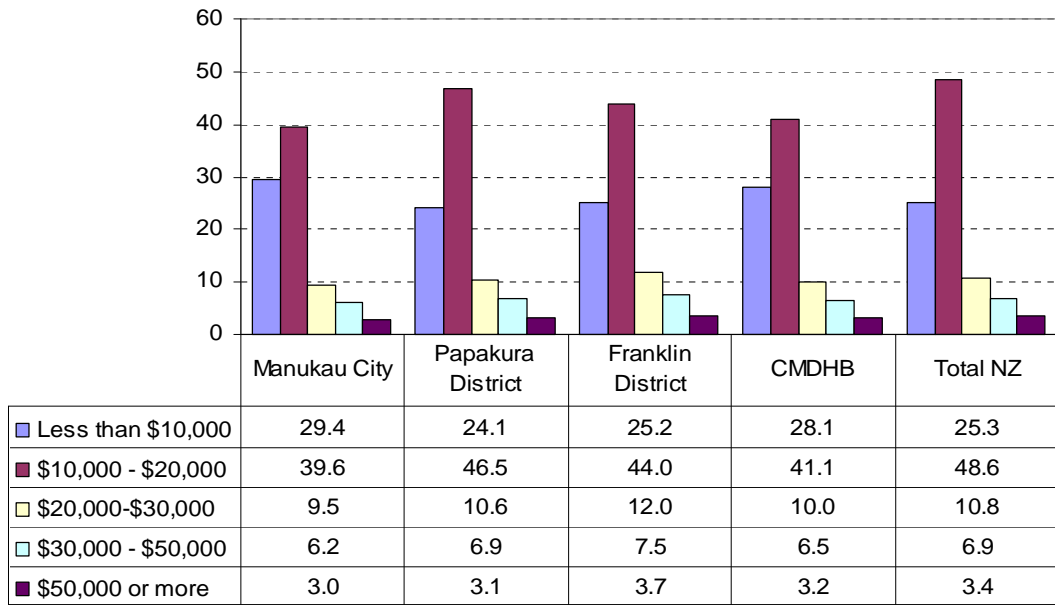
Personal Income	65-74				75-84				85+			
	Male		Female		Male		Female		Male		Female	
	N	%	N	%	N	%	N	%	N	%	N	%
Less than \$10,000	2292	27	2715	29	933	23	1191	20	189	20	333	16
\$10,000 - \$20,000	3138	37	4179	44	1959	47	3066	51	396	43	1080	51
\$20,000-\$30,000	1050	13	726	8	438	11	417	7	105	11	162	8
\$30,000 - \$50,000	753	9	405	4	249	6	168	3	51	6	45	2
\$50,000 or more	435	5	132	1	87	2	63	1	18	2	24	1
Not Stated	1296	15	1689	18	717	17	1338	22	234	25	588	28
Total	8400	100	9408	100	4137	100	5961	100	927	100	2118	100

**Figure 24: Proportion of CM population aged 65-74, 75-84, 85+ in each income level by gender, 2001**

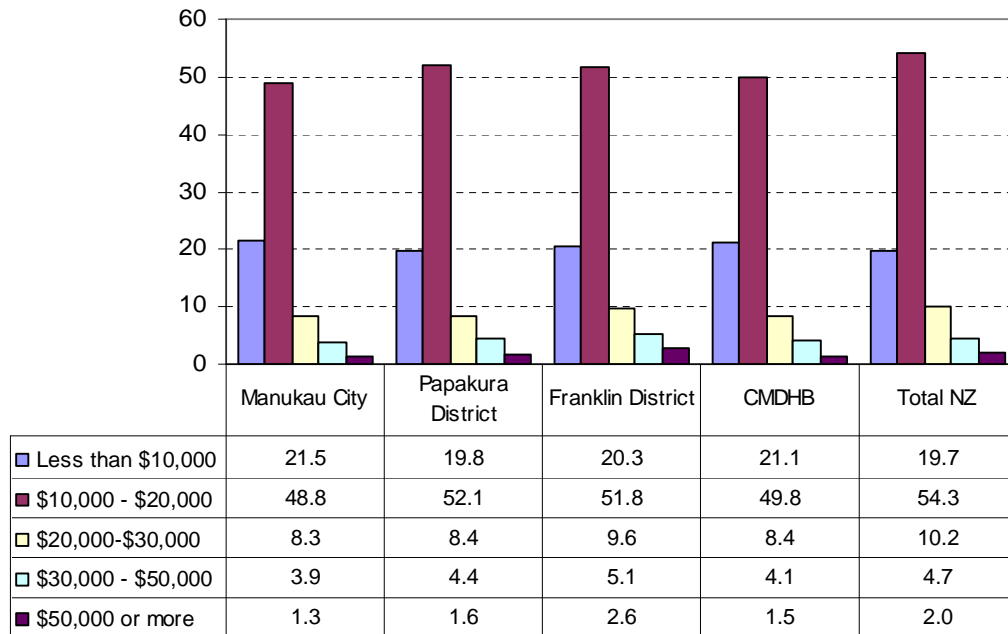


**Figure 25: Proportion of CM population in each income bracket, TA by age group**

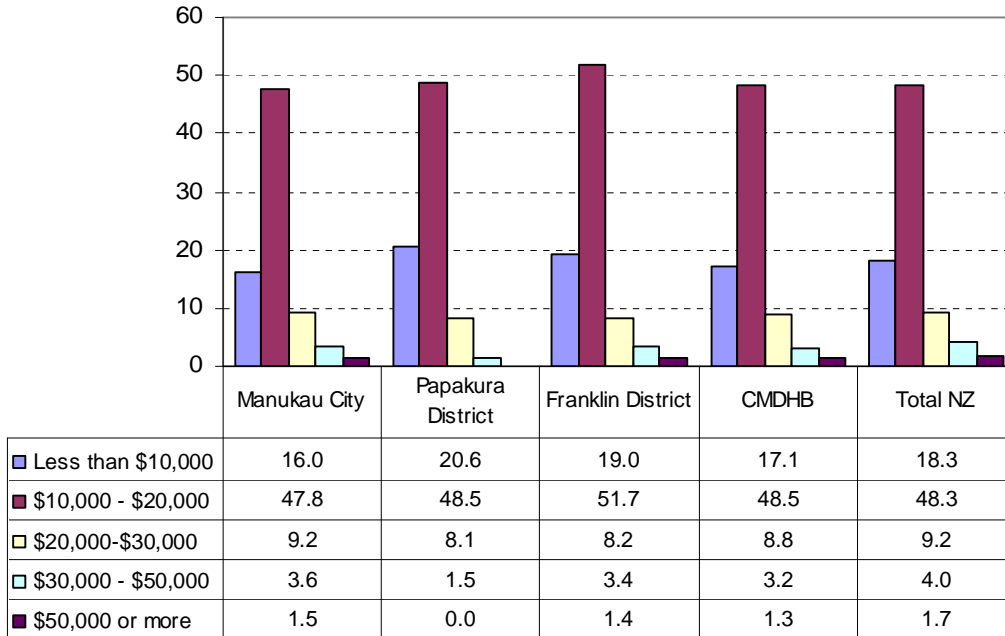
**Age 65-74**



**Age 75-84**



## Age 85 and over



The major source of income for those aged 65 years and over is NZ Superannuation. Approximately 84% of both males and females aged 65-74 and between 90-92% of those aged 75 and over received NZ Superannuation in CM (Table 13). The percentage receiving the NZ Superannuation and Other Superannuation was slightly lower in CM in comparison with NZ as a whole. The 65-74 age group was most likely to receive income paid by an employer (in the form of wages, salary, commissions or bonuses) or earned through self-employment or business, with males in this age group approximately twice as likely to earn income through these means than females in both CM and NZ as a whole. Between 34-44% of CM residents 65 years and over received income from interest, dividends, rent or other investment, consistently less than for NZ for all age groups. Females were less likely to receive income from this source in comparison with males for all age groups and for both CM and NZ as a whole (Table 13 (see over)).

### 3.7.3 Employment/ unpaid work

#### 3.7.3.1 Paid work

Labour force participation amongst the older population is low and decreases with age. At the time of the 2001 Census, 12% of the CM population aged 65 years and over were recorded as being in the labour force, 83% not in the Labour Force, with a remaining 5% with an unidentifiable Labour Force status (Table 14). Males were more likely to be in the labour force and of those employed, more likely than females to be employed full-time. Over 65% of all older females in the labour force were in part time employment (Table 14). Data availability does not permit examining this data by age bands, or ethnicity.

**Table 13: Proportion of income derived from source by age-group and sex, comparing CM with total NZ, 2001**

Income Sources	% 65-74						% 75-84						% 85 Years and Over					
	Male		Female		Total		Male		Female		Total		Male		Female		Total	
	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ
Wages, Salary, Commissions, Bonuses etc Paid by Employer	13.5	12.1	7.6	7.0	10.4	9.5	3.0	2.5	1.2	0.8	1.9	1.5	1.4	1.1	0.3	0.3	0.6	0.6
Self-employment or Business	13.1	15.4	3.9	8.7	8.3	11.9	5.0	3.1	1.3	1.1	2.8	1.9	1.7	2.1	0.2	0.4	0.8	0.9
Interest, Dividends, Rent, Other Investments	38.2	41.9	34.2	39.8	36.1	40.8	42.1	45.0	36.0	38.7	38.6	41.3	43.7	45.0	33.0	36.1	36.3	38.8
Regular Payments from ACC or a Private Work Accident Insurer	0.7	0.8	0.4	0.6	0.5	0.7	0.4	0.7	0.6	0.6	0.5	0.7	0.3	0.8	0.6	0.8	0.6	0.8
New Zealand Superannuation or Veterans Pension	83.6	91.2	84.3	92.5	84.0	91.8	90.4	94.4	90.1	94.1	90.2	94.2	92.0	92.2	90.8	91.7	91.1	91.9
Other Superannuation, Pensions, Annuities *	16.0	17.8	9.6	10.2	12.6	13.8	21.8	23.5	11.7	12.2	15.9	16.8	19.6	21.2	13.4	13.5	15.3	15.8
Community Wage - Job Seeker	0.5	0.3	0.6	0.2	0.6	0.2	0.2	0.1	0.2	0.1	0.3	0.1	0.3	0.2	0.0	0.0	0.2	0.1
Community Wage - Sickness Benefit	1.2	0.4	1.1	0.3	1.2	0.3	0.8	0.3	0.5	0.2	0.7	0.2	0.0	0.2	0.3	0.2	0.3	0.2
Domestic Purposes Benefit	0.7	0.3	0.9	0.3	0.8	0.3	0.6	0.2	0.5	0.3	0.6	0.3	0.3	0.5	0.8	0.5	0.8	0.5
Invalids Benefit	1.1	0.9	1.0	0.7	1.0	0.8	0.7	0.6	1.0	0.7	0.9	0.6	0.7	0.8	0.6	0.7	0.4	0.7
Student Allowance	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.3	0.1	0.2	0.1	0.2	0.1
Other Government Benefits, Government Income Support Payments, or War Pensions	4.6	2.6	5.1	2.6	4.8	2.6	7.0	6.8	4.5	3.5	5.5	4.9	6.6	7.3	5.6	4.5	5.8	5.4
Other Sources of Income**	0.8	0.7	0.7	0.7	0.7	0.7	0.5	0.7	0.8	0.8	0.7	0.7	1.4	0.9	1.1	1.0	1.2	1.0
No Source of Income	2.1	0.7	2.7	0.9	2.4	0.8	1.1	0.5	1.6	0.7	1.4	0.6	1.0	0.9	1.2	1.1	1.1	1.1
Total#	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics NZ, 2001 Census of Population and Dwellings

Notes: \*Other Than NZ Superannuation, Veterans Pension or War Pensions

\*\* Including Support payments from people living in other households

# Includes people specifying one or more income source(s) and no source of income

**Table 14: Labour Force/Employment status for CM residents aged 65+ by gender, 2001**

Labour Force/Employment Status	Age 65+					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Full time paid	534	21.2	207	15.7	741	19.3
Full time, self-employed without employees	432	17.1	78	5.9	510	13.3
Full time, employer	231	9.2	42	3.2	270	7.0
Full time, unpaid family worker	96	3.8	51	3.9	150	3.9
Full time, not stated	96	3.8	54	4.1	153	4.0
<b>Total Full Time, employed</b>	<b>1392</b>	<b>55.2</b>	<b>429</b>	<b>32.5</b>	<b>1821</b>	<b>47.3</b>
Part time, paid	432	17.1	405	30.7	837	21.8
Part time, self-employed without employees	351	13.9	129	9.8	480	12.5
Part time, employer	63	2.5	42	3.2	105	2.7
Part time, unpaid family worker	114	4.5	120	9.1	234	6.1
Part time, not stated	111	4.4	162	12.3	273	7.1
<b>Total Part time, employed</b>	<b>1071</b>	<b>42.4</b>	<b>861</b>	<b>65.2</b>	<b>1929</b>	<b>50.2</b>
Total Paid employee	969	38.4	609	46.1	1578	41.0
Total Self-employed without employees	780	30.9	210	15.9	990	25.7
Total Employer	294	11.7	80	6.1	375	9.8
Total Unpaid Family Worker	213	8.4	171	13.0	384	10.0
Total Not stated	207	8.2	216	16.4	426	11.1
<b>Total Employed</b>	<b>2466</b>	<b>97.7</b>	<b>1287</b>	<b>97.5</b>	<b>3753</b>	<b>97.6</b>
Unemployed	63	2.5	33	2.5	93	2.4
Total Labour Force	2523	17.6	1320	7.2	3846	11.8
Not in Labour Force	10983	76.7	16080	87.7	27063	82.9
Work and Labour Force Status Unidentifiable	810	5.7	927	5.1	1740	5.3
<b>Total</b>	<b>14316</b>	<b>100.0</b>	<b>18327</b>	<b>100.0</b>	<b>32649</b>	<b>100.0</b>

Source: Statistics NZ, 2001 Census of Population and Dwellings

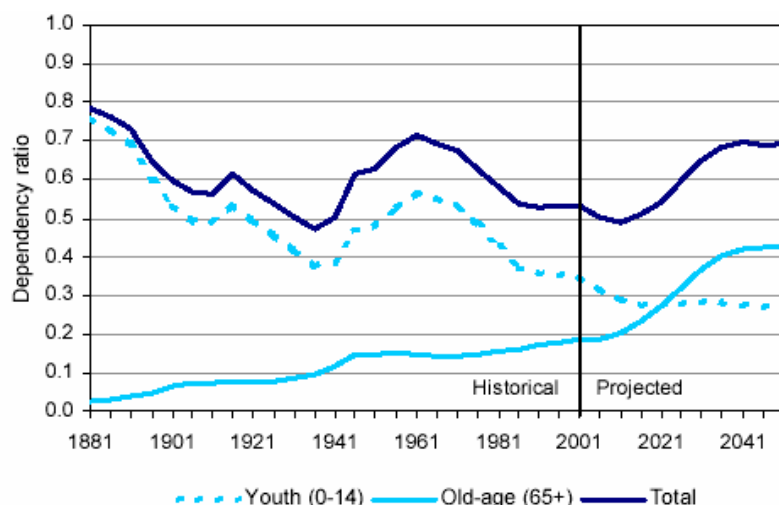
The largest areas of employment included 'Agriculture and Fisheries' (13%), Manufacturing (11%) and 'Property and Business' (11%). Five percent of the older population in CM were employed in health or community work.

### 3.7.3.2 Age dependency ratios

Changes in the age-structure will have an effect on the balance between the working age population and the older members of society[25]. The older-age dependency ratio is the ratio of the older population (65 years and over) to those of 'working' age (15-64). Nationally this ratio is predicted to continue to increase from 18 per 100 persons of working age to 44 per 100 by 2051 (

Figure 26). Looking at this national figure may obscure considerable heterogeneity at sub-national level, particularly for CM where a greater proportion of the population is Māori and Pacific peoples who have higher fertility and higher mortality. However given population mobility looking at smaller geographical areas may not be valid (**Error! Reference source not found.**). Furthermore this index however is based only on demographic variables and does not account for changes in labour force participation. For example, most younger adults are not in paid employment by age 15 and in fact most are “dependent” until age 20 – 25, and an increasing number of those aged 65 and over are remaining in full or part –time employment[25, 26].

**Figure 26: Historical and projected dependency ratios for NZ population**



Source – Calculated from the following data: 1881-1976 Census data cited in (Bloomfield 1984: II.5, II.6, II.23); 1981-2051 Census data and Series 4 projections accessed from Statistics New Zealand website [www.stats.govt.nz](http://www.stats.govt.nz) on 8 July 2003.

Notes – The youth dependency ratio is the population aged 0-14 divided by the population aged 15-64; the old-age dependency ratio is the population aged 65 and over divided by the population aged 15-64; the total dependency ratio is the sum of the young and old-age dependency ratios. It is instructive to examine changes in summary measures of population structure.

Source: Bryant, J.(2003) The Ageing of the New Zealand Population, 1881-2051. New Zealand Treasury, Working paper 03/27 Page 3, Figure 2 [25]

In 2004 the age dependency ratio in CM was 0.14 (**Error! Reference source not found.**), or around 7 adults of working age per person aged 65+. By 2026 the ratio is projected to move to 0.25, or 4 adults of working age per person aged 65+. The number of the next generation of workers able to support their aging parents is likely to fall significantly over the next 20 years.

**Table 15: Age-dependency ratios for older population, 2004 & 2026**

Older age-dependency ratio		
DHB	2004	2026
CMDHB	0.14	0.25
Metro-Auckland DHBs	0.14	0.24
NZ	0.18	0.32

Data Source: Statistics NZ, Census 2001

### 3.7.3.3 Unpaid work

Census 2001 collected information on unpaid work activities which encompass the following categories:

- Housework, cooking, repairs, gardening, for own household
- Looking after child who is member of own household
- Looking after member of own household who is ill or has a disability
- Looking after child who is not a member of own household
- Looking after someone who is ill or has a disability who is not member of own household
- Helping/volunteer work for or through any agencies, group or marae
- Attending or studying for 20 hours or more per week
- Attending of studying for less than 20 hours per week

Approximately 85% of the total Counties Manukau population aged 65-74, 80% of those aged 75-84 and 74% of those aged 85 years and over responded to the 2001 Census question on unpaid activity (Table 16). Of the responders, 83% of 65-74 year olds, 71% of 75-84 year olds and 46% of those aged 85+ years indicated they undertook one or more unpaid activity. The proportion indicating no unpaid activity in the previous 4 week period increased with age. In the 65-74 year age group, females were more likely than males to undertake some unpaid activity.

**Table 16: Percent of CM population undertaking unpaid activity, by type of activity, age and gender, 2001 (% of responders)**

Unpaid Activity	65-74						75-84						85+					
	Male		Female		Total		Male		Female		Total		Male		Female		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No Activities	1482	19.5	1167	14.1	2652	16.7	1008	28.5	1413	28.9	2421	28.8	345	48.7	945	56.7	1290	54.3
Housework, Cooking, Repairs, Gardening, Own Household	5823	76.7	6837	82.4	12660	79.7	2400	67.8	3303	67.7	5703	67.8	339	47.9	696	41.7	1035	43.6
Looking after child who is member of household	582	7.7	867	10.4	1446	9.1	123	3.5	198	4.1	756	9.0	12	1.7	30	1.8	42	1.8
Looking after member own household who is ill or has a disability	426	5.6	573	6.9	999	6.3	243	6.9	261	5.3	507	6.0	42	5.9	30	1.8	72	3.0
Looking after child who is not member of household	786	10.4	1395	16.8	2181	13.7	150	4.2	219	4.5	369	4.4	12	1.7	18	1.1	27	1.1
Looking after someone ill or with disability who is not member of household	468	6.2	735	8.9	1203	7.6	165	4.7	219	4.5	387	4.6	21	3.0	21	1.3	45	1.9
Other helping/volunteer work for or through any agencies, group or marae	1197	15.8	1587	19.1	2784	17.5	414	11.7	588	12.0	1002	11.9	39	5.5	51	3.1	90	3.8
Attending or studying for 20 hours or more per week	45	0.6	45	0.5	90	0.6	15	0.4	21	0.4	36	0.4	6	0.8	6	0.4	15	0.6
Attending or studying for less than 20 hours per week	159	2.1	207	2.5	363	2.3	42	1.2	54	1.1	93	1.1	6	0.8	6	0.4	15	0.6
Total People# (% response)	7587	84.8	8301	84.3	15888	84.5	3540	80.9	4881	78.1	8412	79.1	708	71.5	1668	74.9	2376	73.7
Total Population 2001 Census	8946		9849		18798		4377		6252		10632		990		2226		3222	

# includes all people stating 1 or more unpaid activity(s) and no activities. Excludes people not stating a response.

Source: Statistics NZ, 2001 Census of Population and Dwellings

There is increasing parity in the proportion of each gender undertaking unpaid activity in older age groups. A greater percent of males aged 85+ indicated they looked after a member of their own household with an illness or disability, however the numbers are small. Conversely, females aged 65 years and over were more likely to report they had undertaken child care than men. A higher proportion of CM residents aged 65 years and over reported looking after a child or a person who is ill or has a disability within their household in comparison with neighbouring DHBs and NZ as a whole. They were less likely than these comparators to look after children or someone ill or experiencing disability who was not a member of their household or to report doing unpaid/volunteer work in the wider community (Table 17).

**Table 17: Comparison of percent of residents aged 65 years and over undertaking selected unpaid activities, by DHB**

DHB	% Looking after child who is member of household								
	65-74			75-84			85 Years and Over		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Northland	4.4	6.6	5.5	1.6	3.0	2.4	0.0	1.3	1.1
Waitemata	6.0	8.0	7.0	2.2	2.9	2.6	0.5	0.9	0.9
Auckland	8.1	9.6	8.9	2.7	3.1	3.0	1.3	1.0	1.0
<b>Counties Manukau</b>	<b>7.7</b>	<b>10.4</b>	<b>9.1</b>	<b>3.5</b>	<b>4.1</b>	<b>3.8</b>	<b>1.7</b>	<b>1.8</b>	<b>1.8</b>
Waikato	4.2	5.7	4.9	1.7	2.1	1.9	0.9	0.7	0.8
Total NZ	4.8	6.4	5.6	1.9	2.4	2.2	0.9	0.9	0.9

DHB	% Looking after member in own household who is ill or has a disability								
	65-74			75-84			85 Years and Over		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Northland	5.7	7.4	5.5	6.7	6.2	6.4	6.1	2.9	3.7
Waitemata	5.1	6.8	7.0	6.5	4.9	5.6	7.8	2.1	3.8
Auckland	5.7	6.4	8.9	6.2	5.2	5.6	5.6	2.1	3.1
<b>Counties Manukau</b>	<b>5.6</b>	<b>6.9</b>	<b>9.1</b>	<b>6.9</b>	<b>5.3</b>	<b>6.0</b>	<b>5.9</b>	<b>1.8</b>	<b>3.0</b>
Waikato	5.4	7.0	4.9	6.2	4.9	5.5	7.3	2.0	3.8
Total NZ	5.3	6.6	5.6	6.4	5.1	5.6	6.1	1.9	3.2

DHB	% Looking after child who is not member of household								
	65-74			75-84			85 Years and Over		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Northland	6.7	13.2	9.9	2.9	4.8	3.9	2.0	1.3	1.5
Waitemata	12.5	18.3	15.5	5.0	5.6	5.3	1.6	1.8	1.8
Auckland	11.7	17.7	14.8	5.0	6.3	5.8	1.3	1.0	1.1
<b>Counties Manukau</b>	<b>10.4</b>	<b>16.8</b>	<b>13.7</b>	<b>4.2</b>	<b>4.5</b>	<b>4.4</b>	<b>1.7</b>	<b>1.1</b>	<b>1.1</b>
Waikato	8.3	14.7	11.6	3.3	4.3	3.9	0.6	0.7	0.7
Total NZ	9.9	16.4	13.3	3.9	4.9	4.5	1.1	1.0	1.0

DHB	% Looking after someone ill or with disability who is not member of household								
	65-74			75-84			85 Years and Over		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Northland	6.9	9.1	8.0	4.2	5.9	5.2	2.7	2.3	2.2
Waitemata	7.2	10.1	8.7	5.2	6.2	5.8	2.4	2.0	2.0
Auckland	7.2	10.9	9.2	5.8	6.3	6.2	2.4	2.6	2.5
<b>Counties Manukau</b>	<b>6.2</b>	<b>8.9</b>	<b>7.6</b>	<b>4.7</b>	<b>4.5</b>	<b>4.6</b>	<b>3.0</b>	<b>1.3</b>	<b>1.9</b>
Waikato	6.9	10.7	8.8	5.8	5.9	5.9	3.1	1.8	2.2
Total NZ	7.1	10.5	8.8	5.4	6.1	5.8	2.9	1.8	2.2

DHB	% Other helping/volunteer work for or through any agencies, group or marae								
	65-74			75-84			85 Years and Over		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Northland	19.9	25.3	22.6	14.8	15.9	15.4	4.1	4.2	4.1
Waitemata	16.5	21.6	19.1	13.5	13.8	13.7	3.2	3.5	3.5
Auckland	16.7	20.0	18.4	13.2	13.5	13.3	5.1	4.6	4.7
<b>Counties Manukau</b>	<b>15.8</b>	<b>19.1</b>	<b>17.5</b>	<b>11.7</b>	<b>12.0</b>	<b>11.9</b>	<b>5.5</b>	<b>3.1</b>	<b>3.8</b>
Waikato	20.2	24.7	22.5	12.4	14.1	13.3	4.0	3.9	3.9
Total NZ	19.0	23.2	21.2	13.6	13.6	13.6	4.3	3.3	3.6

# includes all people stating 1 or more unpaid activity(s) and no activities. Excludes people not stating a response.  
Source: Statistics NZ, 2001 Census of Population and Dwellings

Nationally, there is a trend for Māori to report higher levels of unpaid work than the total population – particularly for child-care and work for an organisation, group or marae. Similarly Pacific reported higher levels of unpaid child-care and care for the ill or disabled[2].

### 3.7.4 Living arrangements

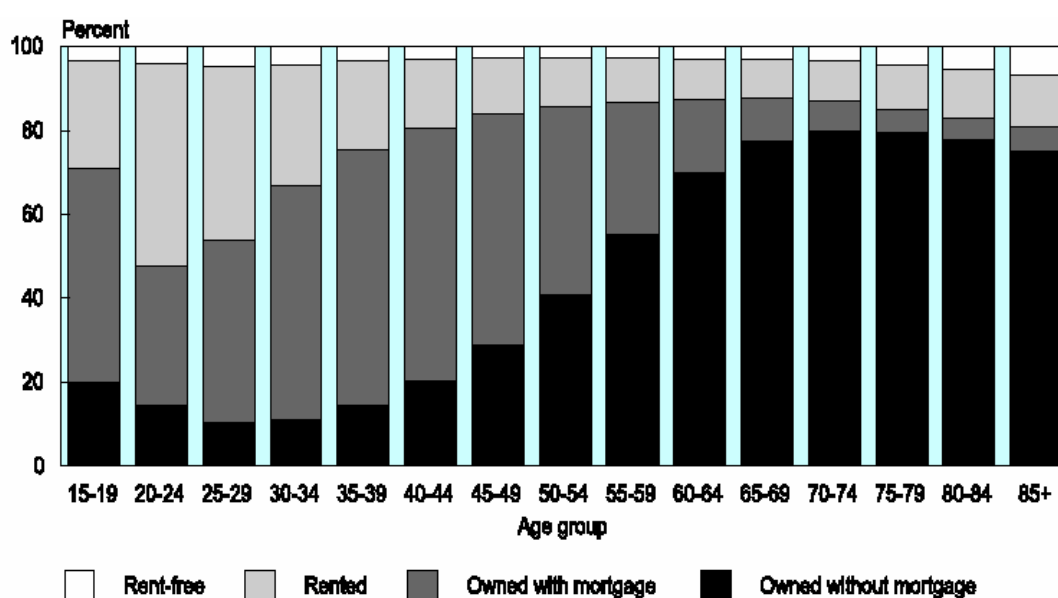
Numerous factors influence living arrangements including proximity to amenities or social supports such as family, friends, community groups; marital status, health status, socio-economic status throughout the lifecourse, physical parameters of housing stock and wider environment, and cultural expectations.

The importance of affordable and appropriate housing options for older people is acknowledged in the Positive Ageing Strategy.

#### Tenure

There is a strong relationship between housing tenure and age with both home ownership and the proportion of homes owned mortgage-free increasing with age (Figure 27).

**Figure 27: Proportion of New Zealand Adults Living in each Tenure Type by Age Group, 1996**



Source: Statistics New Zealand, Census of Population and Dwellings, 1996

Cited in Housing Now, 1998

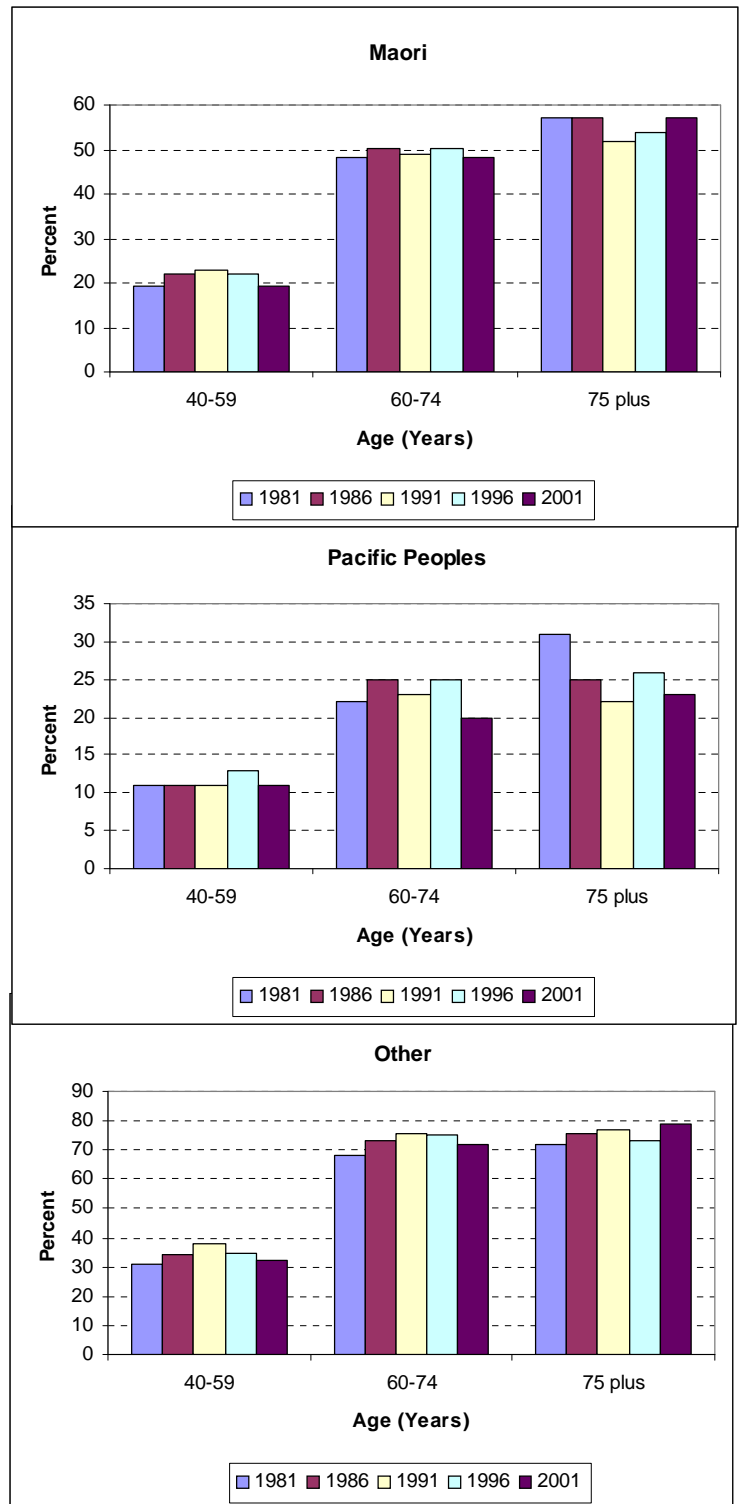
#### 3.7.4.1 Home ownership

Overall the rate of home ownership is relatively high in the current cohort of older people, both nationally and in CM. Nationally an estimated 82% of people aged 65 years and over own or partly own their own home (Census 2001). The high level of home ownership reflects the great value placed on home ownership and desire to “age in place” in ones own home. Home ownership confers both personal and financial security, with homes typically the most significant asset for older people.

Declining home ownership rates in the 1990s for all ethnic groups will have impact on increasing need for both private and government supported rental housing options.

**Figure 28: Percentage of New Zealanders living in mortgage-free housing, 1981-2001 by ethnicity**

There are large ethnic disparities in mortgage free home ownership. According to the 2001 Census, 72% of non-Māori, non-Pacific Peoples, 48% of Māori and only 20% of all Pacific Peoples in New Zealand live in mortgage-free housing in the 60-74 year age range.



### 3.7.4.2 Rental options

There are a range of rental accommodation options including Housing New Zealand Corporation (HNZC), Local Council Pensioner Housing, Social Service and Community Organisations and Private Landlords.

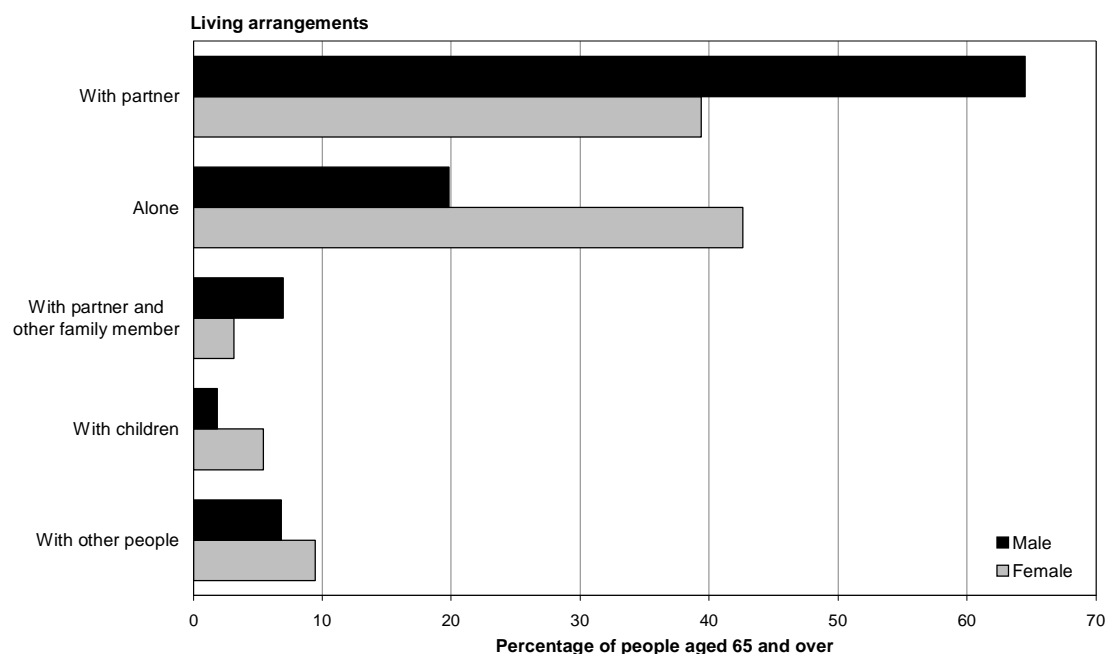
Nationally, Housing New Zealand Corporation has 12,000 older tenants and local authorities house a further 16,000 older people in pensioner units.

Housing New Zealand charges 25% of income, while MCC rates are 25% of net New Zealand Superannuation.

### 3.7.4.3 Household composition

The proportion of older people residing alone, (not with their children or relatives) has been increasing since the 1960s. It is anticipated this trend will continue, reflecting longer life expectancy, smaller family sizes, higher rates of divorce/separation, greater geographical mobility of families and more services supporting older people in the community[2]. The proportion of adults who live alone increases with age. At the time of the 2001 Census, approximately 24% of New Zealanders aged 65-74, 41% of those 75-84 and 57% of those 85 years and over lived alone. There are strong gender and ethnic patterns. A higher proportion of Māori and Pacific Peoples live with family than other ethnic groups (e.g. over 60% of Pacific Peoples aged 75 years and over). More females live alone than males (43% vs. 20% for over 65 year olds nationally). Living with others is assumed to increase the immediate availability of support and care however the comprehensiveness and quality of this care is not assured[26]. The current cohort of people aged 65 to 84 are more likely to have larger families, however since the 1970s the birth rates have fallen, so future generations of older people are likely to have reduced numbers of potential family carers.

**Figure 29: Household living arrangements for those aged 65+ by gender, all NZ, 2001**

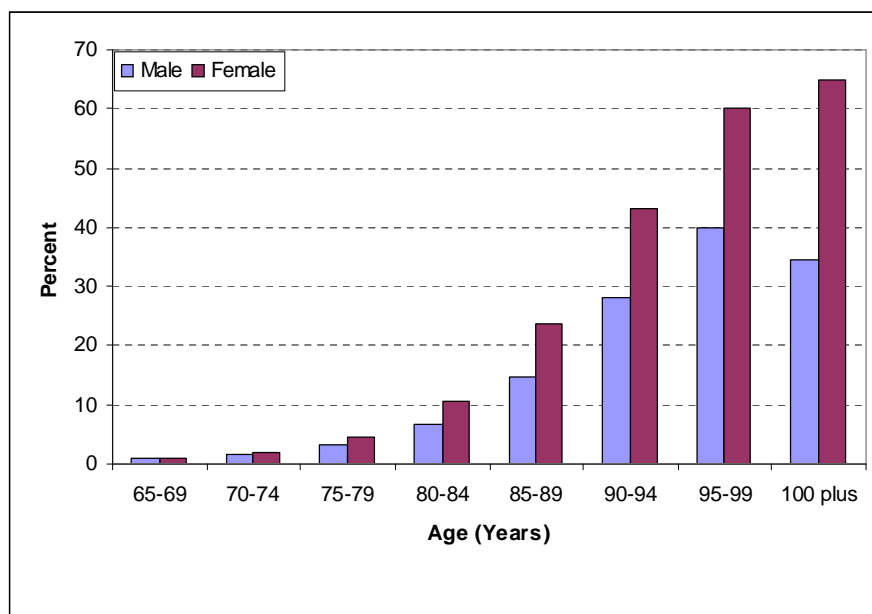


Source: Statistics New Zealand, Census of Population and Dwellings 2001 (MB 2001)

### 3.7.4.4 Residential care

The proportion of the older population in residential care does not increase markedly until people reach around age 80 years of age (Figure 30). There are clear gender imbalances with approximately 19% of males and 31% of females in residential care by age 85 years and over[26].

**Figure 30: Percent of older NZ adults living in residential care by age and gender, 2001**



### 3.7.5 Access to telephone/internet

Access to everyday communication technology is key means of assisting older people to maintain contact with family and friends and conveniently access goods/services and information [4]. The majority of the older population have access to land-line telephones. The Living Standards of Older New Zealanders study (2000), reported only 1.8% of single people and 0.3% of couples did not have a telephone, with cost the most common barrier[27]. If these percentages are applied to the CM over 65 population, this would represent approximately 760 households containing someone aged 65 years and over in 2004 without telephone.

At the time of the 2001 Census, 15% of New Zealanders aged 65 years and over lived in households with access to the internet. A higher proportion of males than females report access (19% vs 12%).

### 3.7.6 Access to transport and patterns of transport use

Mobility is pivotal to maintaining independence for older people and enabling them to remain active participants in their communities [3, 21, 28]. Access to transport is a key determinant of this mobility. An LTSA survey, completed in 1997/1998, found that private transport was used in three quarters of all trips<sup>1</sup> undertaken by people aged 65 and over, while public transport only accounted for 2 % of trips. The proportion of trips as a driver or cyclist decreased with age after 65, while conversely the share of passenger and pedestrian trips increased. By age 80 years and over, public transport accounted for 4% of all trips taken by older adults (Table 18)[29].

<sup>1</sup> 'trip' here refers to a trip leg with a single mode and a single purpose

**Table 18: Percent of trips by mode of transport, for older NZ population (1997/1998)**

Age	Vehicle Driver	Vehicle Passenger	Walk	Cycle	Other - Public Transport	Total
65-74	58	17	21	2	2	100
70-74	57	20	21	1	1	100
75-79-	53	22	22	1	2	100
80+	43	26	27	0.1	4	100
Total 65+	55	20	33	1	2	100

Source: LTSA (2000) Travel Survey Report – Increasing our understanding of New Zealanders' travel behaviour 1997/1998 [29]

Given the low relative use of public transport, access to private cars is important for the older population. Access to a private car decreases steeply with age (Table 19).

**Table 19: Percentage of NZ households with no vehicles by age of oldest adult, 2001**

Household Composition	Age in Years		
	65-74	75-84	85+
One-person	24%	38%	62%
Couple only	2%	6%	19%
Multiple family	7%	6%	4%
Total	11%	22%	42%

Source: NZ Population Census, 2001

The proportion of people holding a driver's licence decreases with age but is higher for men than for women past 65. Of note, one in five women over age 65 have never driven and there is a propensity for females to have less lifetime driving experience than their male peers - and one in 20 has a low level of experience: i.e. under 20,000km [29].

**Table 20: Percent of NZ population aged 65 years and over who hold a current drivers licence, 2001**

Age (Years)	Female	Male	Total
65-69	75%	91%	83%
70-74	67%	88%	77%
75-79	55%	82%	67%
80+	25%	57%	36%

Source: NZ Population Census, 2001

Counties Manukau is a region that encompasses both sprawling urban and remote rural dwelling. In built up areas, public transport options include local buses, train and taxis. However in rural Franklin, access to public transport is limited. A number of volunteer driver services provide a valuable service to assist access of medical services, though the bulk of trips will be made with the assistance of family and friends.

### 3.8 Geographic distribution within CMDHB

Table 21 shows distribution of people aged 65+ by Territorial Authorities (Manukau City, Franklin District and Pakakura District) and Wards within Manukau (Clevedon, Howick-Pakuranga, Mangere, Manurewa, Manukau, Otara, Papatoetoe). Approximately 8% of the Manukau City population, 9% of the Pakakura District, and 10% of the more rural Franklin District population are aged 65 years and over. Within Manukau City the highest percentage of people aged 65+ reside in Howick-Pakuranga or Papatoetoe, followed by Clevedon, Manukau, Mangere, Manurewa and Otara.

**Table 21: Usual Place of Residence by TA and Ward in CMDHB, age 65+, 2001**

TA Ward	65-74		75-84		85+		Total 65+		Total All Ages
	No.	% <sup>#</sup>	No.	%	No.	%	No	%	No
<b>Manukau City</b>	<b>14,295</b>	<b>4.8</b>	<b>7,710</b>	<b>2.6</b>	<b>2,300</b>	<b>0.8</b>	<b>24,305</b>	<b>8.2</b>	<b>297,625</b>
Clevedon	755	5.7	365	2.7	80	0.6	1,200	9.0	13,360
Howick Pakuranga	5,265	5.9	3,190	3.6	1,050	1.2	9,505	10.6	89,290
Mangere	1,920	4.2	845	1.8	180	0.4	2,945	6.4	46,085
Manurewa	1,930	3.8	895	1.7	240	0.5	3,065	6.0	51,200
Manukau	1,130	4.1	580	2.1	245	0.9	1,955	7.1	27,635
Otara	925	3.4	300	1.1	60	0.2	1,285	4.7	27,440
Papatoetoe	2,370	5.6	1,535	3.6	445	1.0	4,350	10.2	42,615
<b>Papakura District</b>	<b>2,160</b>	<b>5.1</b>	<b>1,360</b>	<b>3.2</b>	<b>420</b>	<b>1.0</b>	<b>3,940</b>	<b>9.4</b>	<b>42,070</b>
<b>Franklin District</b>	<b>3,000</b>	<b>5.7</b>	<b>1,670</b>	<b>3.1</b>	<b>445</b>	<b>0.8</b>	<b>5,115</b>	<b>9.6</b>	<b>53,040</b>
<b>Counties Manukau</b>	<b>19,455</b>	<b>5.0</b>	<b>10,740</b>	<b>2.7</b>	<b>3,165</b>	<b>0.8</b>	<b>33,360</b>	<b>8.5</b>	<b>392,735</b>

# % of total population all ages

Source: Statistics NZ, 2001 Census of Population and Dwellings

Table 22 presents the number and proportion of the population resident in Counties Manukau within each age band by TLA/Ward. The highest proportion of the population within each age band resided in Manukau City, followed by districts of Franklin and then Papakura. Of note, a smaller proportion of those aged 85+ years reside in wards of Clevedon, Mangere, Manurewa, Otara and Franklin in comparison with age-bands 65-74 and 75-84. Conversely a higher proportion of those aged 85+ years reside in Howick-Pakuranga, Papatoetoe, Manukau, and Papakura in comparison to age-bands 65-74 and 75-84. This distribution may reflect locations of residential care facilities.

**Table 22: Number and proportion of population resident in CM by age band and TA and Ward**

TLA Suburb	65-74		75-84		85+		Total 65+		Total (all ages)	
	No.	% <sup>#</sup>	No.	% <sup>#</sup>	No.	% <sup>#</sup>	No	% <sup>#</sup>	No	% <sup>#</sup>
<b>Manukau City</b>	<b>14,295</b>	<b>73.5</b>	<b>7,710</b>	<b>71.8</b>	<b>2,300</b>	<b>72.7</b>	<b>24,305</b>	<b>72.9</b>	<b>297,625</b>	<b>75.8</b>
Clevedon	755	3.9	365	3.4	80	2.5	1,200	3.6	13,360	3.4
Howick Pakuranga	5,265	27.1	3,190	29.7	1,050	33.2	9,505	28.5	89,290	22.7
Mangere	1,920	9.9	845	7.9	180	5.7	2,945	8.8	46,085	11.7
Manurewa	1,930	9.9	895	8.3	240	7.6	3,065	9.2	51,200	13.0
Manukau	1,130	5.8	580	5.4	245	7.7	1,955	5.9	27,635	7.0
Otara	925	4.8	300	2.8	60	1.9	1,285	3.9	27,440	7.0
Papatoetoe	2,370	12.2	1,535	14.3	445	14.1	4,350	13.0	42,615	10.9
<b>Papakura District</b>	<b>2,160</b>	<b>11.1</b>	<b>1,360</b>	<b>12.7</b>	<b>420</b>	<b>13.3</b>	<b>3,940</b>	<b>11.8</b>	<b>42,070</b>	<b>10.7</b>
<b>Franklin District</b>	<b>3,000</b>	<b>15.4</b>	<b>1,670</b>	<b>15.5</b>	<b>445</b>	<b>14.1</b>	<b>5,115</b>	<b>15.3</b>	<b>53,040</b>	<b>13.5</b>
<b>Counties Manukau</b>	<b>19,455</b>	<b>100.0</b>	<b>10,740</b>	<b>100.0</b>	<b>3,165</b>	<b>100.0</b>	<b>33,360</b>	<b>100.0</b>	<b>392,735</b>	<b>100.0</b>

# % of population in that age band resident in a area as proportion of this age band resident in CM as whole

Source: Statistics NZ, 2001 Census of Population and Dwellings

Census 2001 data for ethnic groups in the CMDHB population of 65+ year olds by ward is presented below in Table 23. A relatively small proportion of the CM Māori population aged 65+ live in wards Howick-Pakuranga (2.8%), and Clevedon (2.1%). The largest proportion of the CM Māori Population aged 65+ reside in Mangere and Maurewa, followed by Franklin, Papakura, Otara and Papatoetoe. In contrast, 46.4% of all CM Asians aged 65 years and over reside in Howick-Pakuranga, followed by 16.4% in Papatoetoe. The vast majority of Pacific reside in urban areas. At Census 01 approximately 38% of Counties Manukau Pacific

Peoples aged 65 years and over resided in Mangere, 29% in Otara, and 13% in Papateotoe and Manurewa respectively.

**Table 23: Usual TA/Ward of Residence of CM 65 years of age and older, by ethnicity**

TA Wards	Asian		Māori		Other		Pacific		All Ethnicities	
	No	%#	No	%#	No	%#	No	%#	No	%#
<b>Manukau City</b>	<b>2,075</b>	<b>93.5</b>	<b>1,025</b>	<b>71.4</b>	<b>18,425</b>	<b>68.6</b>	<b>2,780</b>	<b>98.2</b>	<b>24,305</b>	<b>72.9</b>
Clevedon	20	0.9	30	2.1	1,150	4.3	0	0.0	1,200	3.6
Howick Pakuranga	1,030	46.4	40	2.8	8,410	31.3	25	0.9	9,505	28.5
Mangere	235	10.6	250	17.4	1,375	5.1	1,085	38.3	2,945	8.8
Manurewa	155	7.0	245	17.1	2,305	8.6	360	12.7	3,065	9.2
Manukau	240	10.8	90	6.3	1,515	5.6	110	3.9	1,955	5.9
Otara	30	1.4	185	12.9	240	0.9	830	29.3	1,285	3.9
Papatoetoe	365	16.4	185	12.9	3,430	12.8	370	13.1	4,350	13.0
<b>Papakura District</b>	<b>60</b>	<b>2.7</b>	<b>195</b>	<b>13.6</b>	<b>3,645</b>	<b>13.6</b>	<b>40</b>	<b>1.4</b>	<b>3,940</b>	<b>11.8</b>
<b>Franklin District</b>	<b>85</b>	<b>3.8</b>	<b>215</b>	<b>15.0</b>	<b>4,805</b>	<b>17.9</b>	<b>10</b>	<b>0.4</b>	<b>5,115</b>	<b>15.3</b>
<b>Counties Manukau</b>	<b>2,220</b>	<b>100.0</b>	<b>1,435</b>	<b>100.0</b>	<b>26,875</b>	<b>100.0</b>	<b>2,830</b>	<b>100.0</b>	<b>33,360</b>	<b>100.0</b>

Source: Statistics NZ, 2001 Census of Population and Dwellings

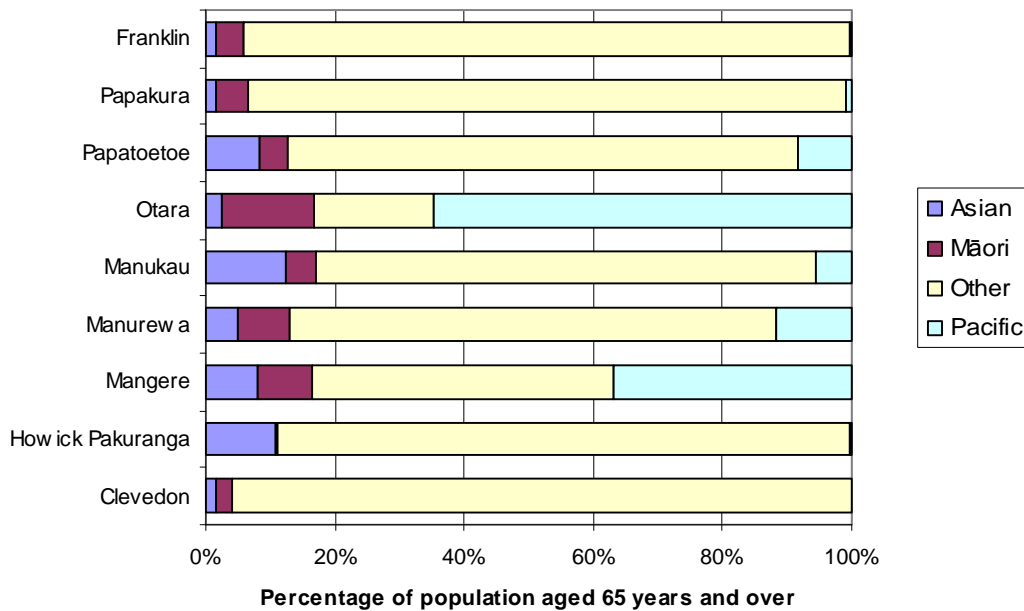
Table 24 documents the number of people by ethnic group aged 65+ years that reside within each TLA/Ward and the proportion this comprises of the total population (all ages, all ethnicities) in that TLA/Ward (Figure 31). Examining the data this way illustrates which wards have a higher or lower proportion of that ethnic group in comparison to the proportion for whole of CM. For example, 'Other' people aged 65+ are over represented in Franklin, Papakura, Papatotoe, Clevedon and Howick- Pakuranga and under represented in Mangere, Manurewa, Manukau, and Otara.

**Table 24: Number aged 65+ by ethnic group in each TLA/Ward and as proportion of total CM population (all ages, all ethnicities)**

TLA Ward	Asian		Māori		Other		Pacific		All Ethnicities 65+		All Ethnicities Total
	No	%	No	%	No	%	No	%	No	%	No
<b>Manukau City</b>	<b>2,075</b>	<b>0.7</b>	<b>1,025</b>	<b>0.3</b>	<b>18,425</b>	<b>6.2</b>	<b>2,780</b>	<b>9.3</b>	<b>24,305</b>	<b>8.2</b>	<b>297,625</b>
Clevedon	20	0.1	30	0.2	1,150	8.6	0	0.0	1,200	9.0	13,360
Howick Pakuranga	1,030	1.2	40	0.0	8,410	9.4	25	0.0	9,505	10.6	89,290
Mangere	235	0.5	250	0.5	1,375	3.0	1,085	2.4	2,945	6.4	46,085
Manurewa	155	0.3	245	0.5	2,305	4.5	360	0.7	3,065	6.0	51,200
Manukau	240	0.9	90	0.3	1,515	5.5	110	0.4	1,955	7.1	27,635
Otara	30	0.1	185	0.7	240	0.9	830	3.0	1,285	4.7	27,440
Papatoetoe	365	0.9	185	0.4	3,430	8.0	370	0.9	4,350	10.2	42,615
<b>Papakura</b>	<b>60</b>	<b>0.1</b>	<b>195</b>	<b>0.5</b>	<b>3,645</b>	<b>8.7</b>	<b>40</b>	<b>0.1</b>	<b>3,940</b>	<b>9.4</b>	<b>42,070</b>
<b>Franklin</b>	<b>85</b>	<b>0.2</b>	<b>215</b>	<b>0.4</b>	<b>4,805</b>	<b>9.1</b>	<b>10</b>	<b>0.0</b>	<b>5,115</b>	<b>9.6</b>	<b>53,040</b>
<b>Counties Manukau</b>	<b>2,220</b>	<b>0.6</b>	<b>1,435</b>	<b>0.4</b>	<b>26,875</b>	<b>6.8</b>	<b>2,830</b>	<b>0.7</b>	<b>33,360</b>	<b>8.5</b>	<b>392,735</b>

Source: Statistics NZ, 2001 Census of Population and Dwellings

**Figure 31: Percentage of the population age 65+ by ethnicity, CM by TA/Ward, 2001**



### 3.9 Demography summary

The profile of the current older CM population reveals a relatively youthful, predominantly urbanised group. The current cohort is largely non-Māori, non-Pacific. In comparison with the total CM population (all ages), a marginally greater proportion of people aged 65 years and over live the least deprived areas in CM.

It is anticipated that the older CM population will be growing fast, will be increasingly ethnically diverse and be characterised by continued participation in work, home and community in comparison with their predecessors. The gender imbalance will persist but there is evidence of some reduction in the future.

A number of key strategic challenges for meeting the future needs of the older CM population are highlighted.

- Population growth in absolute and relative numbers. In the period 2001-2026 the over 65 years of age population will increase over 172% from 33,790 to 92,020 people. By 2026 one in every six residents of Counties Manukau will be aged 65 years and over.
- Change in population composition - growth in the proportion of the older population who are over 85 years the so called "old-old". The largest proportional increase will be in the over 85 year olds. This will be particularly evident from 2030 when the baby boom cohort starts reaching 85.
- Increasing ethnic diversity with greater proportions of Asian, Māori and Pacific people aged 65 and over. Although non-Māori, non-Pacific still the majority in population proportion.
- Persistent but decreasing gender bias with females outnumbering males
- Available pool of traditional family and informal support networks to care for the older population is likely to decrease in the coming decades. This is influenced by a number of factors including:
  - Changes in labour force participation with increasing numbers of people aged 65 and over continuing in the workforce and increasing proportions of the younger population in skilled employment who traditionally were available to look after their elders

- Smaller family sizes
- People at age 65 are increasing likely to still have semi-dependant children, as the age people have children is increasing and more children remain at home with their parents for longer
- Increased rates of divorce/separation
- Increased mobility, leading to geographical dispersion of multigenerational families

## 4 Health status

This chapter presents an overview of the health status of adults aged 65 years and over in CM and examines key indicators by broad age-groups (65-74, 75-85, 85+), gender, ethnicity and socioeconomic status in comparison with neighbouring DHBs and NZ as a whole, where this information is available. It should be noted that sub-group estimates amongst those aged 85 years and over should be interpreted with caution because the numbers can be small.

The following measures of disease/illness burden will be considered:

- Life expectancy by birth and at age 65 years
- Mortality
- Morbidity: disease prevalence, incidence and hospitalisations
- Experience of disability

### 4.1 Life expectancy

Life expectancy (LE) is a summary statistic that estimates the average length of life remaining at a given age. Its derivation assumes that the individual experiences the age-specific mortality rates of a given period from the given age onwards. It denotes the mean longevity of the population as a whole and thus does not necessarily reflect the longevity of an individual [30]. LE is a useful comparative indicator of population health and is commonly considered from two perspectives, LE at birth and at 65 years. For the older population, LE at age 65 is often used [1].

There are sizable socio-economic, ethnic and gender differentials in life expectancy from birth described in New Zealand[23, 31] and these will be considered herein.

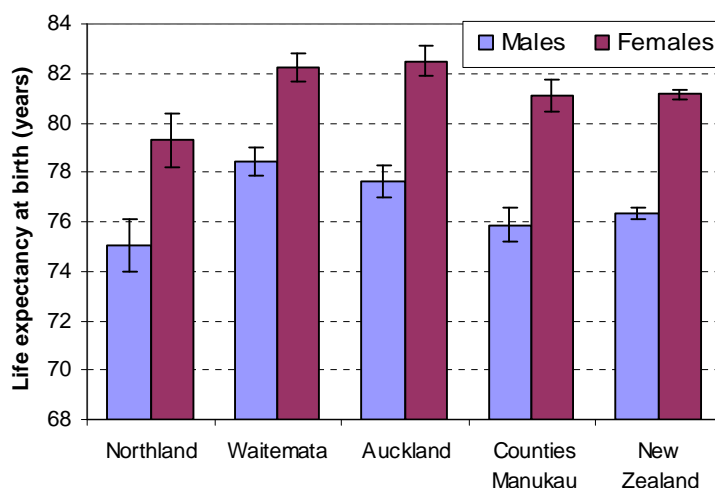
#### 4.1.1 Life expectancy by DHB

If they experienced the 2001 age-specific mortality rates throughout their lives a newborn CM female could expect on average to live until 81 and CM males to 76 years of age, a gender difference of around 5 years. The average life expectancy at birth in CM does not differ greatly from that of NZ older adults for both genders, but exceeds that of Northland males and females by approximately 2 years and lags behind that of males and females in Auckland and Waitemata by 1 year (Table 25, Figure 32).

**Table 25: Life expectancy at birth in 2001, by gender and DHB**

DHB	Life expectancy at birth (2001)		
	Females	Males	Gap
Northland	79.3	75.0	4.2
Waitemata	82.2	78.4	3.8
Auckland	82.5	77.6	4.9
Counties Manukau	81.1	75.9	5.2
New Zealand	81.1	76.3	4.8

**Figure 32: Life expectancy at birth in 2001, by gender and DHB**



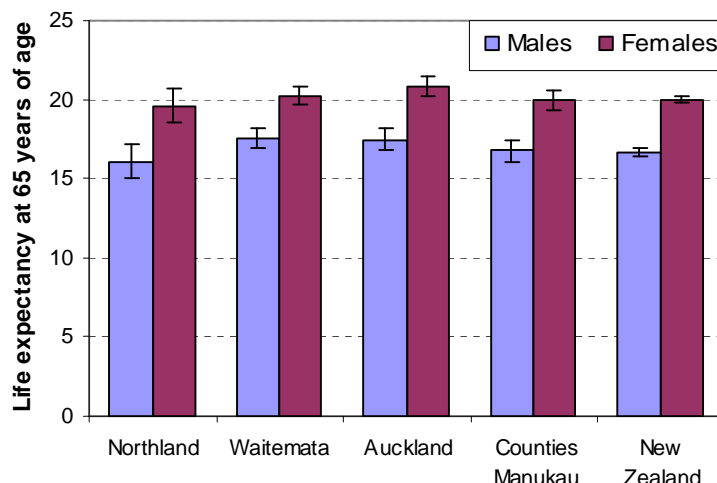
In 2001, CM females at age 65 may expect to live a further 20 years, equating to 3.2 additional years above that for a similarly aged CM male (at 16.8 years). Thus in 2001 a CM female who has reached 65 years of age may on average expect to live to 85 years of age and a male to 81.8 years. Note the LE at 65 is higher than LE at birth reflecting a “survival” effect.

The LE at age 65 years in CM is close to the NZ average. CM LE at age 65 is 0.9 and 0.7 below that for Auckland females and males respectively, and 0.3 and 0.8 for Waitemata females and males respectively. CM LE exceeds that estimated for Northland by 0.4 and 0.7 for females and males respectively. Significant gender disparities persist for each DHB, with females LE exceeding that of males. LE in Northland is significantly lower in comparison with Auckland DHB for females and lower than both Auckland and neighbouring Waitemata DHBs for males (Table 26).

**Table 26: Life expectancy at 65 years of age in 2001, by gender and DHB**

DHB	Life Expectancy at 65 years (2001)		
	Females	Males	Gap
Northland	19.6	16.1	3.6
Waitemata	20.3	17.6	2.7
Auckland	20.9	17.4	3.4
Counties Manukau	20.0	16.8	3.2
New Zealand	20.0	16.7	3.3

**Figure 33: Life expectancy at 65 years in 2001, by gender and DHB**



#### 4.1.2 Trends in life expectancy by gender and region

In common with most other developed countries, life expectancy in New Zealand is increasing [2]. Life expectancy for NZ females at birth has risen by 7.2 years from 73.9 in 1960 to 81.1 in 2001. NZ male life expectancy has also increased from 68.7 to 76.3 (7.7 years) over the same period. According to MOH, life expectancy at birth has been increasing more rapidly for males than for females since the mid-1980s, leading to a reduction in the gender gap in life expectancy[2].

1996-2001 trend data for NZ and the Northern DHBs is shown below in **Table 27** and Figure 34 and **Table 28** and Figure 35 for females and males respectively. A gradual increase in LE for both genders across DHBs is seen. The pattern for CM closely approximates that for NZ as a whole.

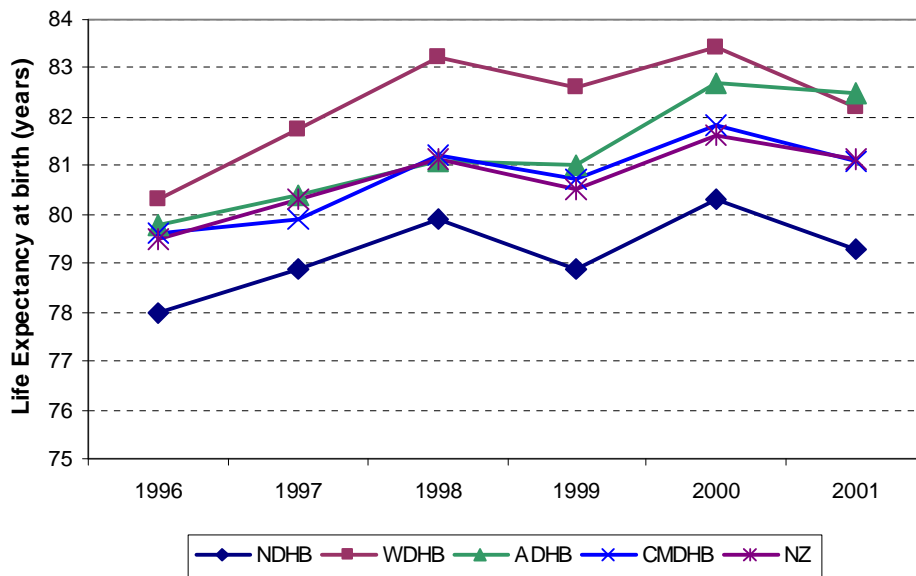
**Table 27: Life expectancy at birth for females by DHB, 1996-2001**

Year	Female Life Expectancy at Birth (years)				
	NDHB	WDHB	ADHB	CMDHB	NZ
1996	78.0	80.3	79.8	79.6	79.5
1997	78.9	81.7	80.4	79.9	80.3
1998	79.9	83.2	81.1	81.2	81.1
1999	78.9	82.6	81.0	80.7	80.5
2000	80.3	83.4	82.7	81.8	81.6
2001	79.3	82.2	82.5	81.1	81.1
Difference 96/97-00/01	1.4	1.8	2.5	1.7	1.5

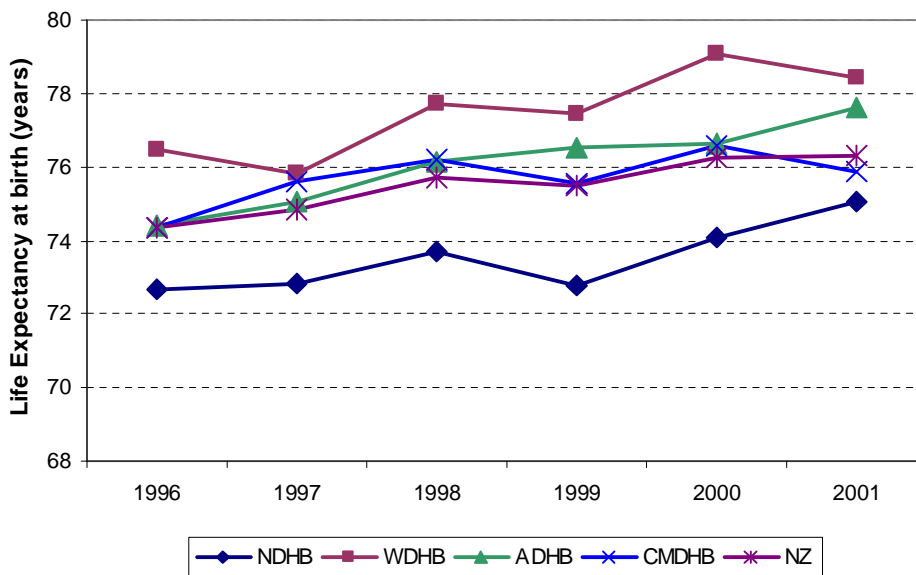
**Table 28: Life expectancy at birth for males by DHB, 1996-2001**

Year	Male Life Expectancy at Birth (years)				
	NDHB	WDHB	ADHB	CMDHB	NZ
1996	72.6	76.5	74.4	74.3	74.4
1997	72.8	75.8	75.1	75.6	74.8
1998	73.7	77.7	76.1	76.2	75.7
1999	72.8	77.5	76.5	75.6	75.5
2000	74.1	79.1	76.7	76.6	76.3
2001	75.0	78.4	77.6	75.9	76.3
Difference 96/97-00/01	2.8	2.6	2.4	1.3	1.7

**Figure 34: Life expectancy at birth trends for females, 1996-2001 by DHB**



**Figure 35: Life expectancy at birth trends for males 1996-2001 by DHB**



LE at age 65 is also increasing gradually. The congruence across DHB is greater than for LE at age 65 years. However there is more variability over time within any DHB.

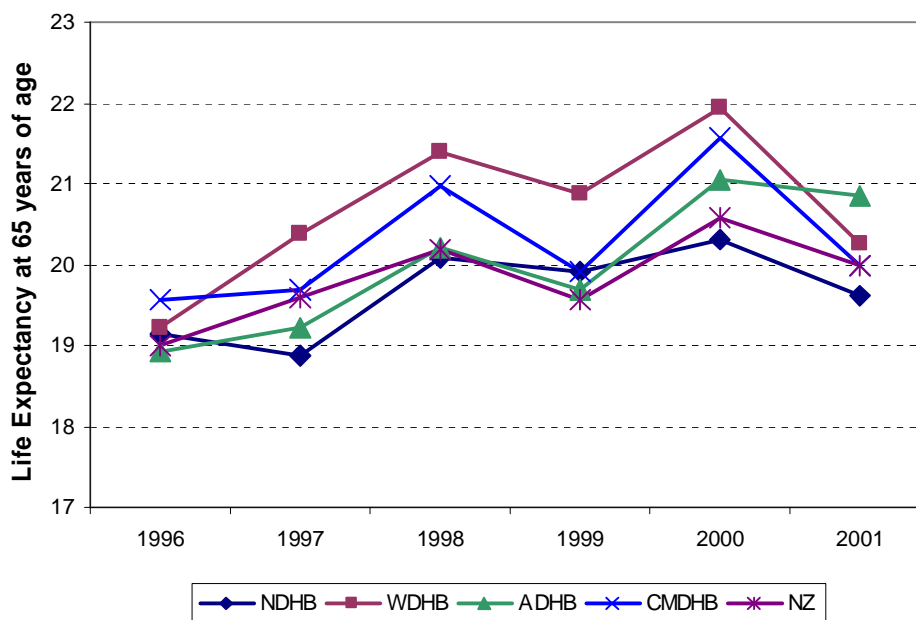
**Table 29: Female life expectancy at age 65 years by DHB, 2001**

Year	Female Life Expectancy at 65 Years of Age (years)				
	NDHB	WDHB	ADHB	CMDHB	NZ
1996	19.2	19.2	18.9	19.6	19.0
1997	18.9	20.4	19.2	19.7	19.6
1998	20.1	21.4	20.2	21.0	20.2
1999	19.9	20.9	19.7	19.9	19.6
2000	20.3	21.9	21.1	21.6	20.6
2001	19.6	20.3	20.9	20.0	20.0

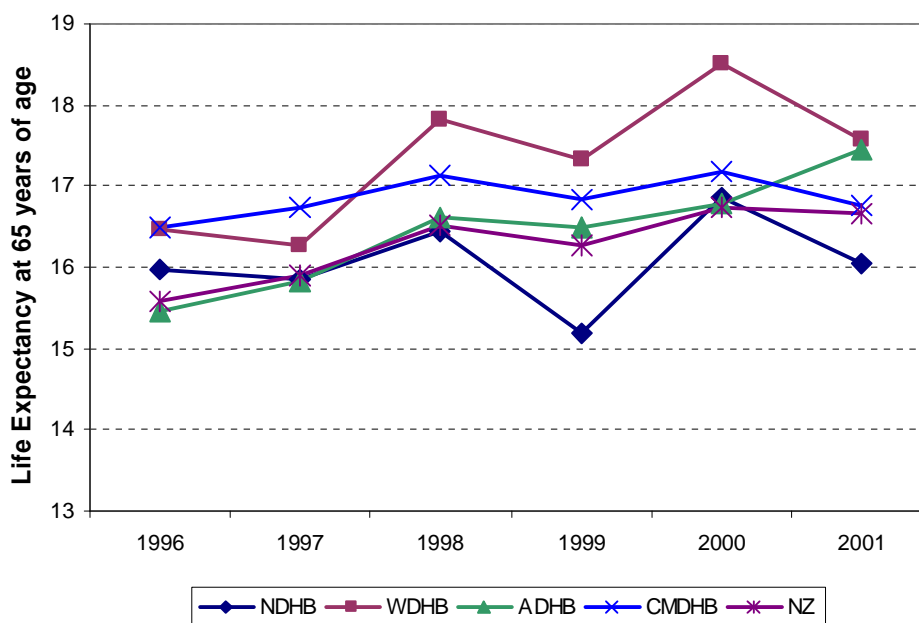
**Table 30: Male life expectancy at age 65 years by DHB, 2001**

Year	Male Life Expectancy at 65 Years of Age (years)				
	NDHB	WDHB	ADHB	CMDHB	NZ
1996	16.0	16.5	15.5	16.5	15.6
1997	15.9	16.3	15.8	16.8	15.9
1998	16.4	17.8	16.6	17.1	16.5
1999	15.2	17.3	16.5	16.8	16.3
2000	16.9	18.5	16.8	17.2	16.7
2001	16.1	17.6	17.4	16.8	16.7

**Figure 36: Life expectancy at 65 years for females, by DHB regions 2001**



**Figure 37: Life expectancy at 65 years for males by DHB regions, 2001**



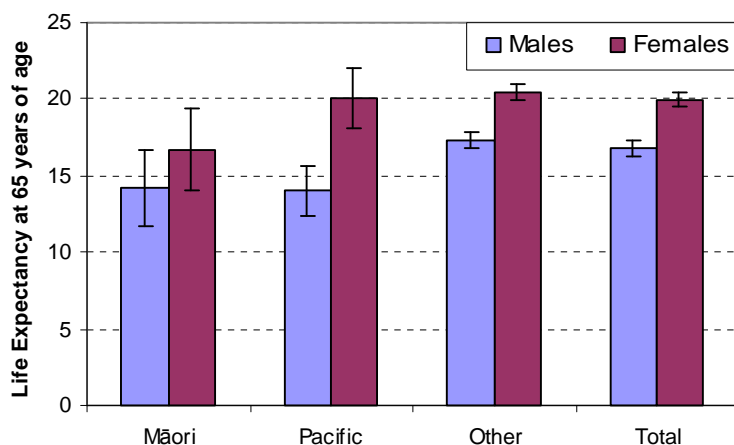
### 4.1.3 Life expectancy by ethnicity

Ethnic disparities in LE at age 65 years are evident, however they are less marked at older ages than at birth, because of higher death rates amongst Māori and Pacific at earlier ages. At age 65, males self-identifying as Māori or Pacific can expect to live approximately 3 years less than non-Māori, non-Pacific males. The disparity between Pacific and non-Māori, non-Pacific females is not apparent in the 2001 data. However Māori females LE at age 65 is between 3.3 - 3.7 years less than for Pacific and non-Māori, non-Pacific females respectively.

**Table 31: Life expectancy at 65 years of age in CM by gender and ethnicity, 2001**

Ethnicity	Life expectancy at 65 years of age (years)		
	Females	Males	Gap
Māori	16.7	14.2	2.5
Pacific	20.0	14.0	6.0
Other	20.4	17.3	3.2
Total	20.0	16.8	3.2

**Figure 38: Life expectancy at 65 years of age in CM by gender and ethnicity, 2001**



Source: NZHIS, 2001. Bars are for 95<sup>th</sup> CI

#### 4.1.4 Trends in life expectancy by gender and ethnicity

Predicted life expectancy at age 65 shows some variation over the period 1996-2001, however overall there is suggestion that LE for Māori and Pacific is improving more so than Other in CM.

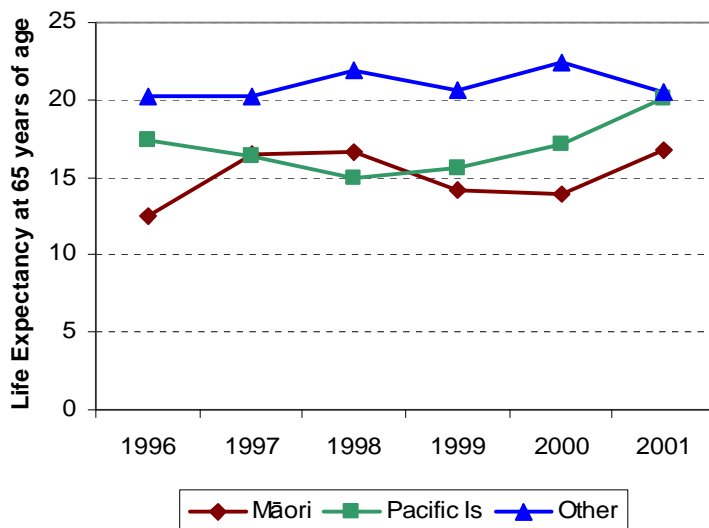
**Table 32: Life expectancy at age 65 years for females in Counties Manukau, by ethnicity, 1996-2001**

Ethnic Group	Female life expectancy at 65 years of age					
	1996	1997	1998	1999	2000	2001
Māori	12.5	16.5	16.7	14.2	13.9	16.7
Pacific	17.5	16.4	15.0	15.6	17.2	20.0
Other	20.2	20.3	22.0	20.6	22.4	20.4
Total	19.6	19.7	21.0	19.9	21.6	20.0

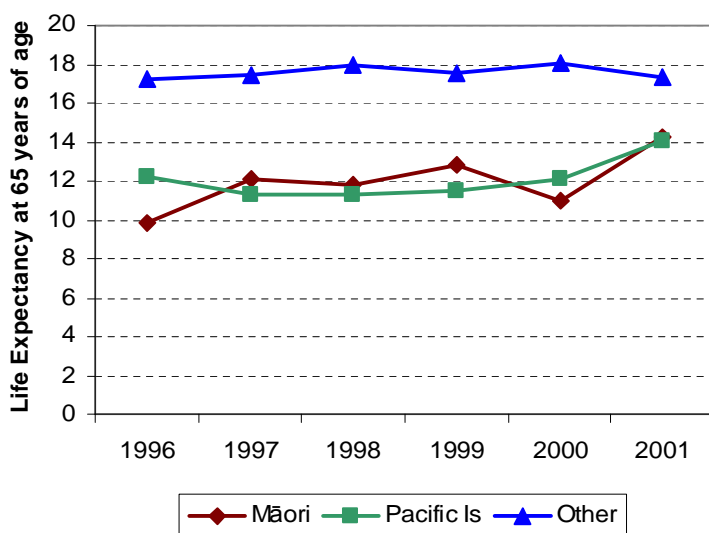
**Table 33: Life expectancy at 65 years of age for males in Counties Manukau by ethnicity, 1996-2001**

Ethnic Group	Male life expectancy at 65 years of age					
	1996	1997	1998	1999	2000	2001
Māori	9.8	12.2	11.8	12.8	11.0	14.2
Pacific	12.2	11.3	11.3	11.5	12.1	14.0
Other	17.2	17.5	17.9	17.5	18.1	17.3
Total	16.5	16.8	17.1	16.8	17.2	16.8

**Figure 39: Life expectancy at age 65 years for females in Counties Manukau, by ethnicity, 1996-2001**



**Figure 40: Life expectancy at 65 years of age for males in Counties Manukau by ethnicity, 1996-2001**



#### 4.1.5 Independent life expectancy

Independent life expectancy (ILE) is defined as the number of years that a person can expect to live independently i.e. without a functional limitation that necessitates assistance of another person or complex device. It is derived from both life expectancy tables and disability rates [1]. This data is not available at regional level; however some inferences can be made from the national data (Table 34).

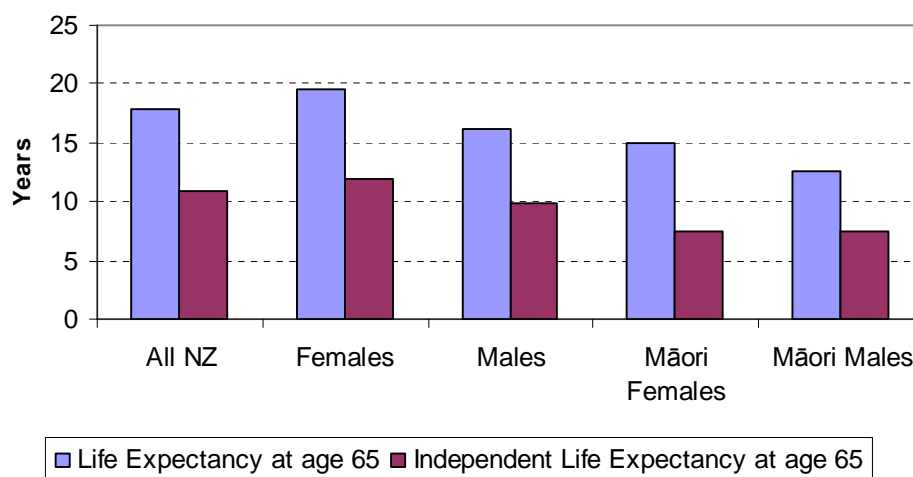
**Table 34: Life expectancy and independent life expectancy at age 65 years by ethnicity and gender, all NZ, 2001**

Life expectancy	All NZ	Female	Male	Māori female	Māori male	Pacific female	Pacific male
LE at age 65	17.8	19.5	16.1	15	12.6	16.6	13.4
Independent LE at age 65	10.9	11.9	9.9	7.5	7.4	NA	NA
LE at age 65 with disability req assistance	6.9	7.6	6.2	7.5	5.2	NA	NA
% of LE at 65 free of disability req assistance	61.2	61.0	61.5	50.0	58.7	NA	NA
% of LE at 65 with disability req assistance	38.8	39.0	38.5	50.0	41.3	NA	NA

At a population level, NZ females aged 65 years can on average expect to live longer than males, with a longer period of independence but also a greater years with disability requiring assistance [2]. In 2001, NZ women aged 65 were estimated to live on average a further 19.5 years to the age of 84.5 years and could expect to live independently for 61% of their life after age 65 (11.9 years independent, 7.6 years with disability requiring assistance). Conversely NZ males life expectancy at age 65 was 16.1 years to the age of 81.1, of which they could be expected to spend 9.9 years living independently and 6.2 years with disability requiring assistance (proportion of these 16.1 years spent living independently is similar 61%).

As discussed in the previous section, there are persistent ethnic disparities in life expectancy at birth and age 65 (Table 18, Figure 31). Life expectancy at age 65 for Māori females is 4.5 years less than the average 65 year old NZ female and they have fewer years of independent life expectancy (7.5 years compared to 11.9 for all females, 50% compared to 61% of LE at 65). Similarly, Māori males life expectancy at 65 years is 3.5 years less than the average 65 year old male, with 7.4 compared to 9.9 years of independent life expected respectively (58.7% vs. 61.5%).

**Figure 41: Independent life expectancy at age 65 years by ethnicity, 2001**



Data Source: Health of Older People in NZ: A statistical reference Table 4.1 Page 33 MOH, 2002 [2]

## 4.2 Mortality

Overall mortality rates for all older age groups in New Zealand are declining. The decline is greatest in the 65-74 year age group, reducing by approximately a third between 1980 and 1998 [2]. It is postulated that most of the overall reduction in age-specific mortality rates is due to decline in mortality rates for cardiovascular diseases.

This analysis shows the mortality profiles of CM by subgroups of age, gender and ethnicity and compares with NZ and neighbouring DHBs. Trends in mortality profiles for CM and NZ are considered and causes for mortality documented.

#### 4.2.1 All cause mortality combined

In 2001, the Counties Manukau population aged 65 and over comprised 8.6% of the total Counties Manukau population, but accounted for 69.7% of all deaths (1507 deaths for population ≥65 out of 2162 total deaths all ages). Age-specific mortality rates, expressed as the number of deaths per 100,000 resident population for the specified age-group, are given below by gender, ethnicity and region averaged for years 2000-2001 and trends are presented for the period 1996-2001. Caution is needed in interpreting subgroup comparisons in these figures due to small numbers.

#### 4.2.2 Mortality by age and gender

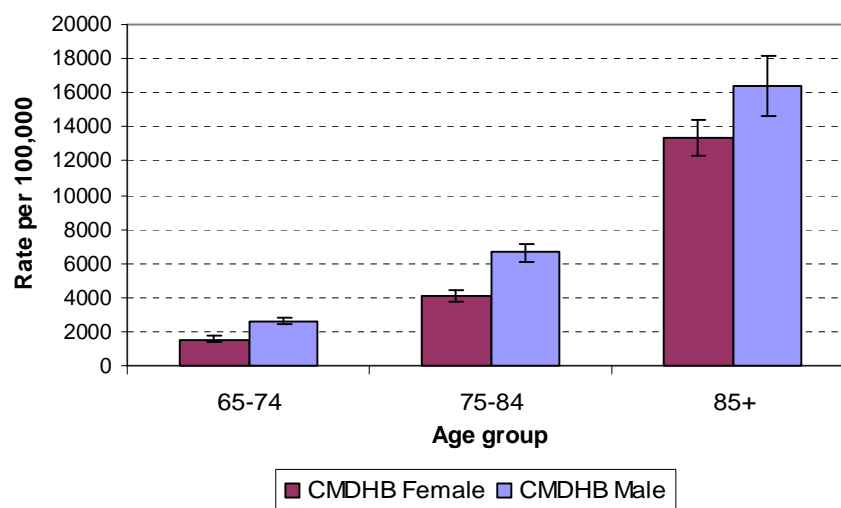
On average, the rate of all cause mortality is higher across the life course for males compared to females. For both genders mortality rates amongst the older population, increases with age (Table 35, Figure 42).

**Table 35: Age-specific all cause mortality numbers and rates, age 65+, CM, 2000/2001**

Age Group	Number/yr#			Rate/100,000/yr#		
	Female	Male	Total	Female	Male	Total
65-74	159	248	407	1,547	2,630	2,064
75-84	264	299	563	4,097	6,657	5,148
85+	306	166	497	13,312	16,357	14,244

Source: NZHIS  
# Numbers and rates annualised for period 2000-2001.

**Figure 42: Age-specific mortality rates, Counties Manukau, 2000/2001**



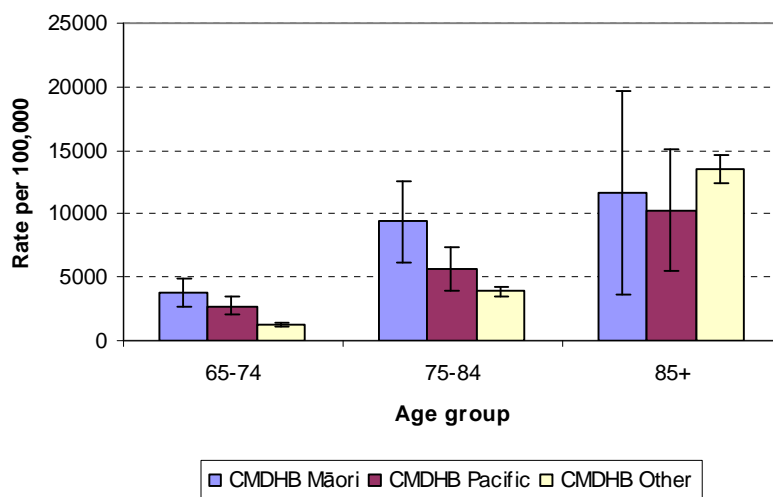
#### 4.2.3 Mortality by age and ethnicity

There are ethnic disparities in mortality rates by age, (Figure 43 & Figure 44) however these figures must be interpreted with caution due to the small numbers of older Māori and Pacific

in the older age groups in CM (reflected in low precision of rates, seen as wide confidence intervals).

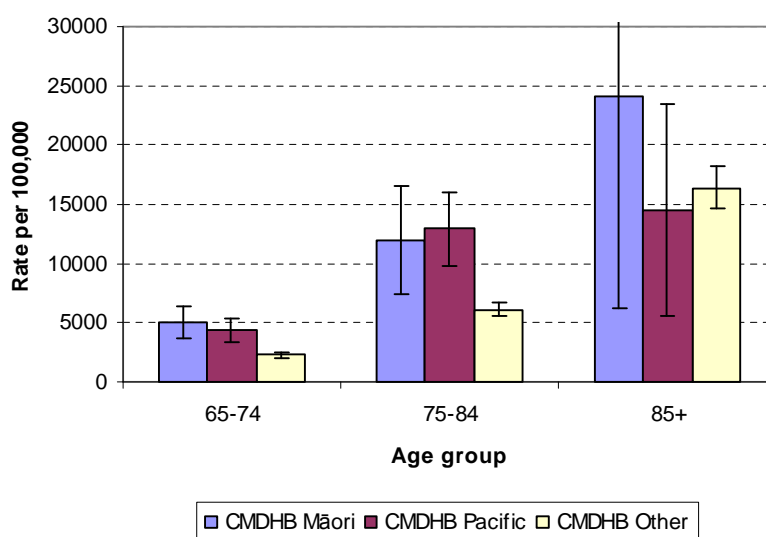
For females aged 65-74 and 75-84, all-cause mortality rates for period 2000-2001 were highest for Māori, followed by Pacific then Others. The difference in all-cause mortality is significant for Māori compared with Others. For those aged 85+, mortality rates were greater for Others, then Māori and Pacific, however these differences are not statistically significant and estimates have poor precision due to small numbers of Māori and Pacific in this age group.

**Figure 43: Age-ethnic-specific all-cause mortality rates, CM females, 2000/2001**



A similar pattern emerges amongst males aged 65-74, with highest mortality rates for Māori, then Pacific and Others. The mortality rates for Maori and Pacific males aged 75-84 are comparable and both significantly higher than Others. The small numbers of Māori and Pacific males aged 85+ in CM make it difficult to interpret the pattern in this age group (Figure 44).

**Figure 44: Age-ethnic-specific all-cause mortality rates, CM males, 2000/2001**



## 4.2.4 Geographic variation in mortality rates

Comparing all-cause mortality rates by gender across DHBs reveals a fairly consistent pattern, with relatively small variations. Northland mortality rates for females aged 65-74 are significantly greater than Auckland DHB. Similarly Northland males in the same age range have significantly higher mortality rates than those reported for neighbouring WDHB.

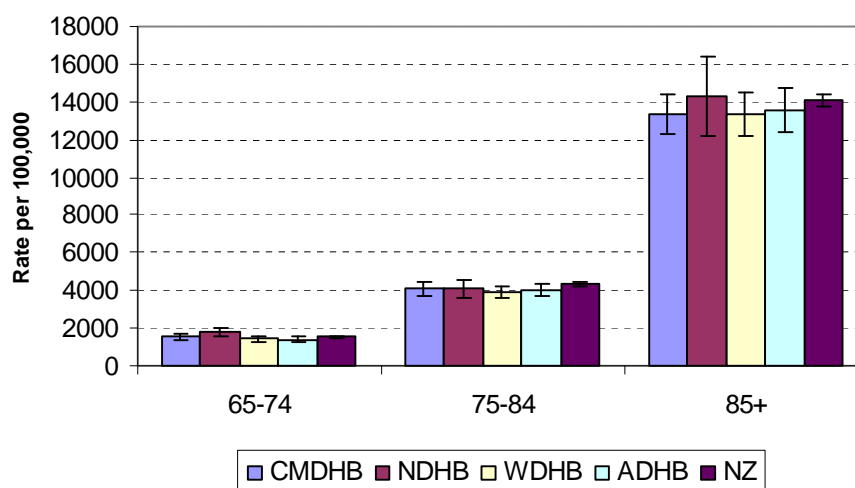
**Table 36: All-cause mortality by DHB and gender, 2000/2001**

Age	DHB	Number/yr		Rate/100,000/yr	
		Female	Male	Female	Male
65-74	NDHB	197	313	1,798	2,814
	WDHB	399	552	1,448	2,186
	ADHB	285	467	1,384	2,494
	CMDHB	318	495	1,547	2,630
	NZ	4,090	6,462	1,572	2,669
75-84	NDHB	275	349	4,102	6,541
	WDHB	765	784	3,913	5,772
	ADHB	701	720	4,052	6,569
	CMDHB	528	597	4,097	6,657
	NZ	8,073	8,569	4,341	6,699
85+	NDHB	172	215	14,323	19,074
	WDHB	523	255	13,344	16,039
	ADHB	557	256	13,545	17,276
	CMDHB	612	332	13,312	16,357
	NZ	9,632	5,211	14,075	17,887

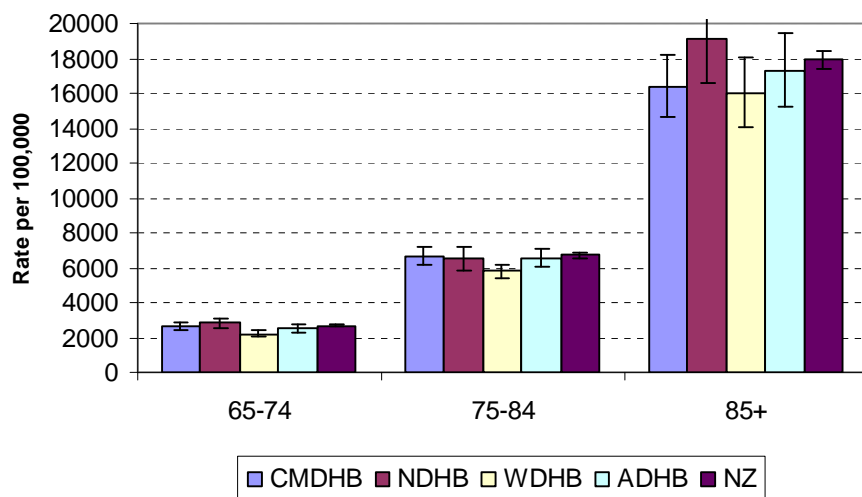
Source: NZHIS

#Number and rate per 100,000 annualised for period 2000-2001.

**Figure 45: Age-specific mortality rates for females by DHB, 2000-2001**



**Figure 46: Age-specific mortality rates for males, by DHB, 2000-2001**



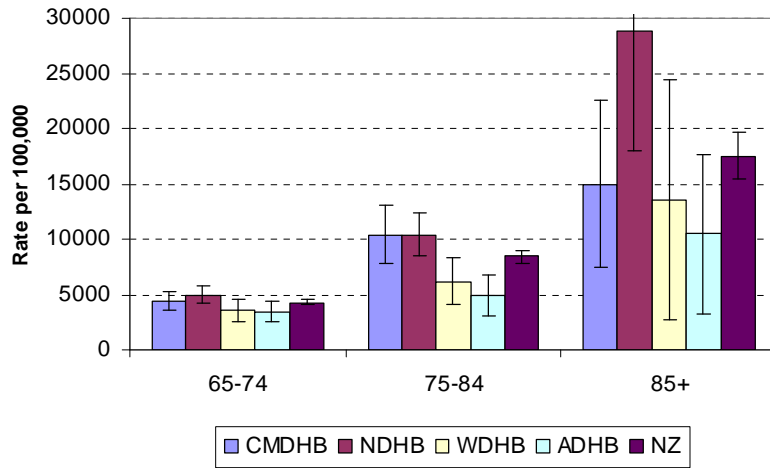
Age-specific mortality rates by ethnicity for Counties Manukau, Northland, Auckland and Waitemata DHBs and NZ as total are shown in Table 37, and Figure 47, Figure 48, and Figure 49. Notably, there are no significant differences between DHBs in ethnic specific mortality with the exception of higher rates for Māori aged 75-84 in Northland in comparison with Auckland and Waitemata DHBs and in CM with Auckland DHB, and Northland Māori aged 85+ in comparison with Auckland DHB (Figure 47). The widening confidence intervals for the over 75 year old cohorts for Māori and Pacific reflect the small numbers in these age ranges.

**Table 37: All-cause mortality by DHB and ethnicity, 2000-2001**

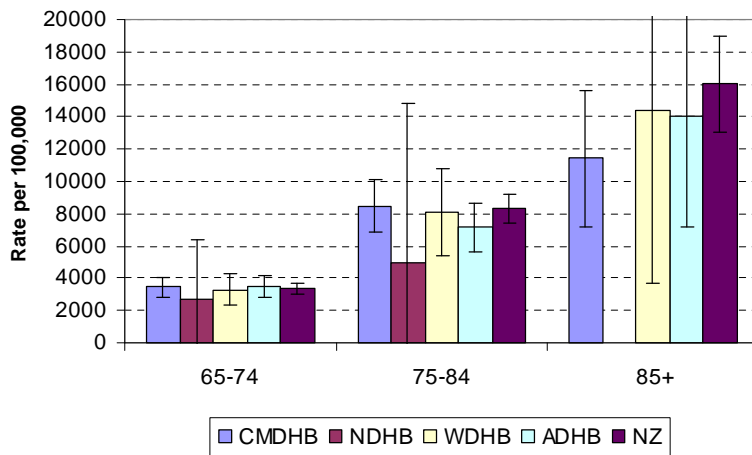
Age	DHB	Number/yr for 2001/2002			Rate/100,000 per year		
		Māori	Pacific	Other	Māori	Pacific	Other
65-74	NDHB	160	2	348	4,952	2,667	1,856
	WDHB	52	47	852	3,579	3,310	1,706
	ADHB	53	105	594	3,465	3,464	1,710
	CM	103	120	590	4,367	3,455	1,762
	NZ	1,209	379	8,964	4,294	3,413	1,936
75-84	NDHB	105	1	518	10,381	5,000	4,714
	WDHB	31	35	1,483	6,178	8,093	4,610
	ADHB	27	85	1,309	4,975	7,161	4,930
	CM	59	106	960	10,412	8,468	4,812
	NZ	726	319	15,597	8,410	8,332	5,175
85+	NDHB	27	0	260	28,856	0	15,183
	WDHB	6	7	765	13,598	14,370	14,153
	ADHB	8	16	789	10,435	14,048	14,679
	CM	15	28	901	15,000	11,425	14,365
	NZ	264	111	14,468	17,501	16,041	15,173

Source: NZHIS

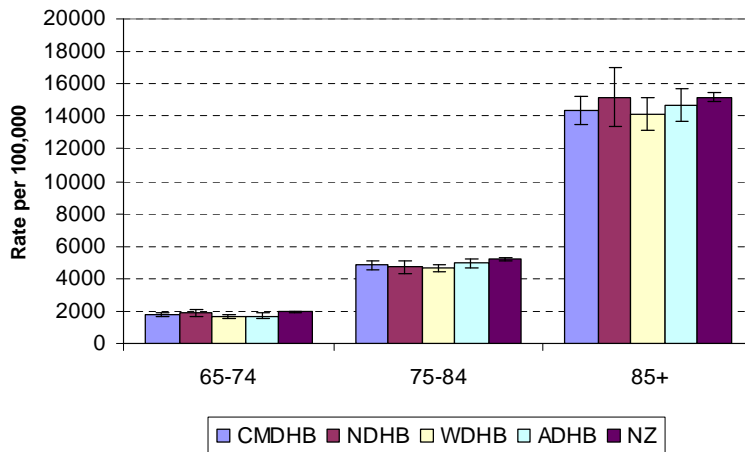
**Figure 47: Age-specific mortality for Maori, by DHB, 2000-2001**



**Figure 48: Age-specific mortality for Pacific, by DHB, 2000-2001**



**Figure 49: Age-specific mortality for non-Maori/non-Pacific, by DHB, 2000-2001**



## 4.2.5 Trends in all cause mortality

Nationally mortality rates in the older population have been declining, with the greatest reductions described in the 65-74 age range[2]. CM figures are similar to those for NZ on the whole (**Error! Not a valid bookmark self-reference.**, Figure 50), however due to a smaller population and absolute numbers of deaths there is more intra-period variation. Between 1996 and 2001 CM mortality rates for adults aged 65-74 have decreased by 11%, and by 9% for those aged 75-84. However there was a small non-significant 2% increase in the over 85 years age group (**Error! Not a valid bookmark self-reference.**, Figure 54).

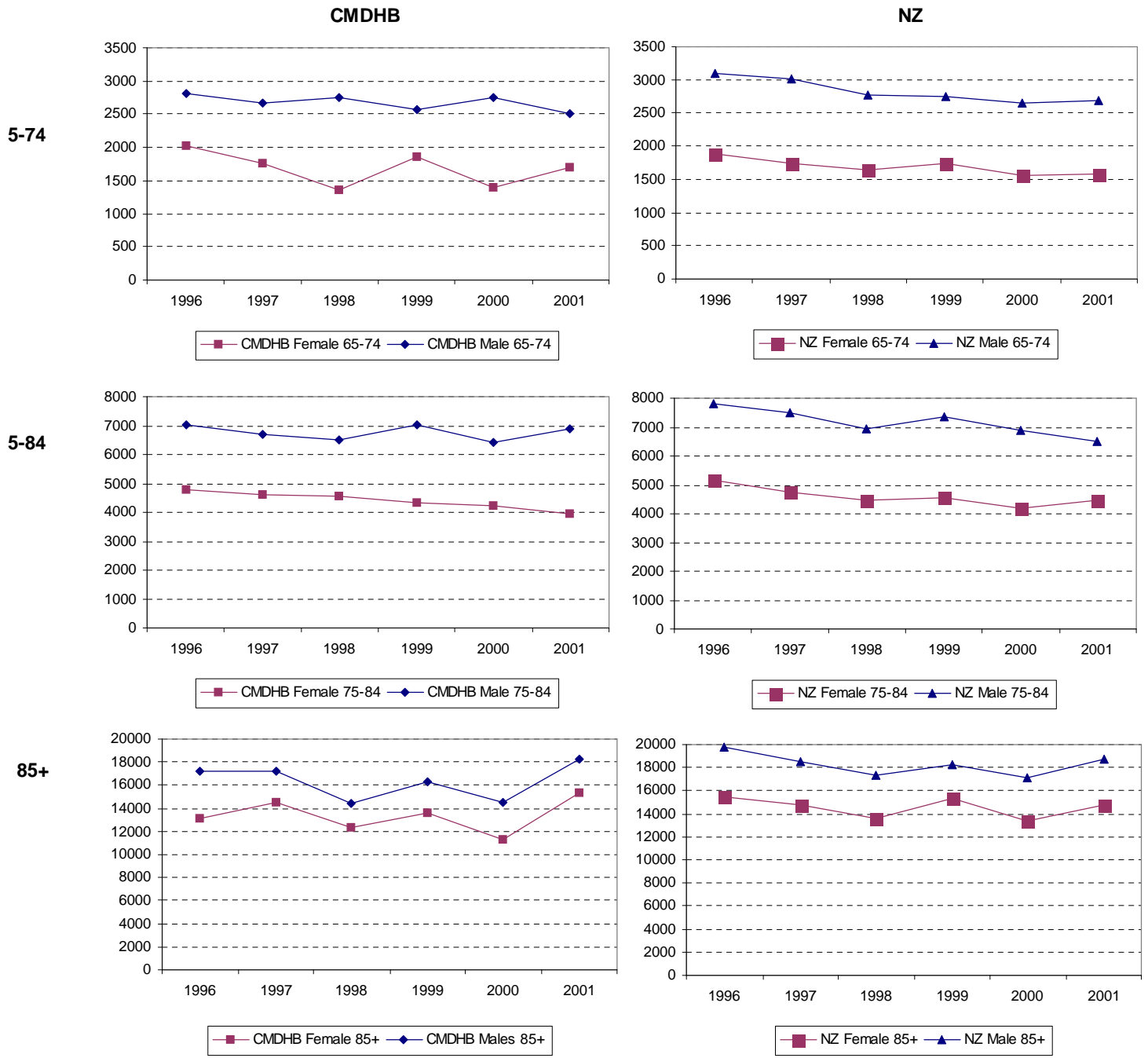
**Table 38: Age and gender-specific number and rate per 100,000 of deaths for CMDHB older population for years (1996-2001)**

Year	CMDHB 65-74						CMDHB 75-84						CMDHB 85+					
	Female		Male		Total		Female		Male		Total		Female		Male		Total	
	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate
1996	191	2020	241	2803	432	2393	270	4792	265	7001	535	5680	233	13119	120	17167	353	14263
1997	171	1765	234	2663	405	2192	271	4619	260	6680	531	5441	273	14514	139	17160	412	15310
1998	135	1363	249	2750	384	2026	275	4538	261	6535	536	5331	248	12271	131	14411	379	12935
1999	188	1860	238	2570	426	2199	271	4342	297	7045	568	5431	295	13582	151	16237	446	14378
2000	144	1388	260	2749	404	2037	275	4252	286	6434	561	5141	262	11274	148	14496	410	12257
2001	174	1706	235	2511	409	2091	253	3941	311	6881	564	5155	350	15351	184	18218	534	16231
% change rates 1996-2001 #	-17%		-7%		-11%		-16%		-2%		-9%		3%		-1%		2%	

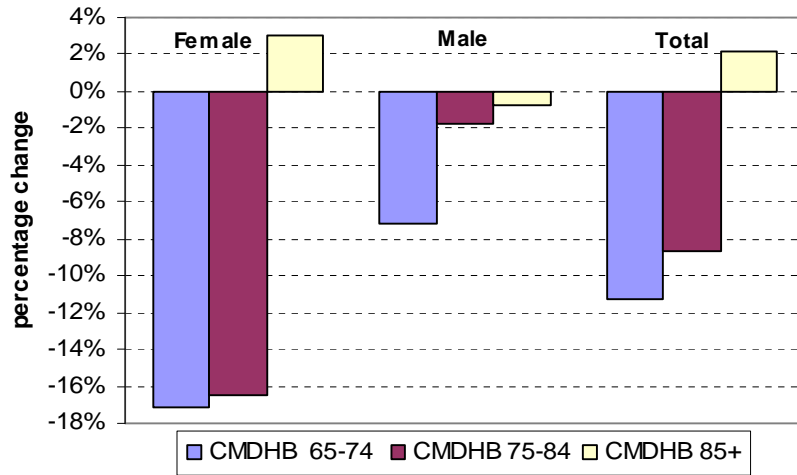
Source: NZHIS

# % change represents the overall trend in mortality for the period 1996-2001

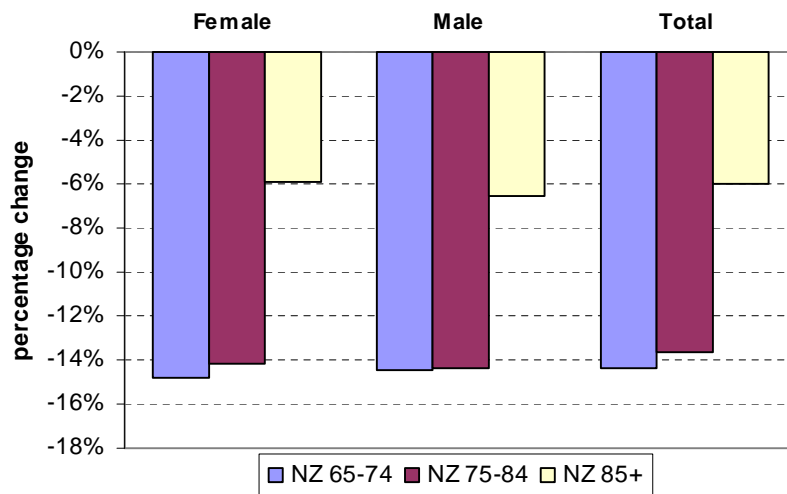
Figure 50: All-cause mortality by age group, CM and NZ, 1996-2001



**Figure 51: Percentage change in age-specific mortality rates, CM aged 65+, 1996-2001**



**Figure 52: Percentage change in age-specific mortality rates, NZ aged 65+, 1996-2001**



Between 1996 and 2001, the largest reduction in mortality rates in the CM older population was seen for Māori, followed by Pacific and then Other (Table 39). Caution is needed in interpreting these trends given the small absolute numbers of deaths by ethnic group in any one year.

**Table 39: Age- and ethnic-specific number and rate per 100,000 of deaths for CMDHB older population for years (1996-2001)**

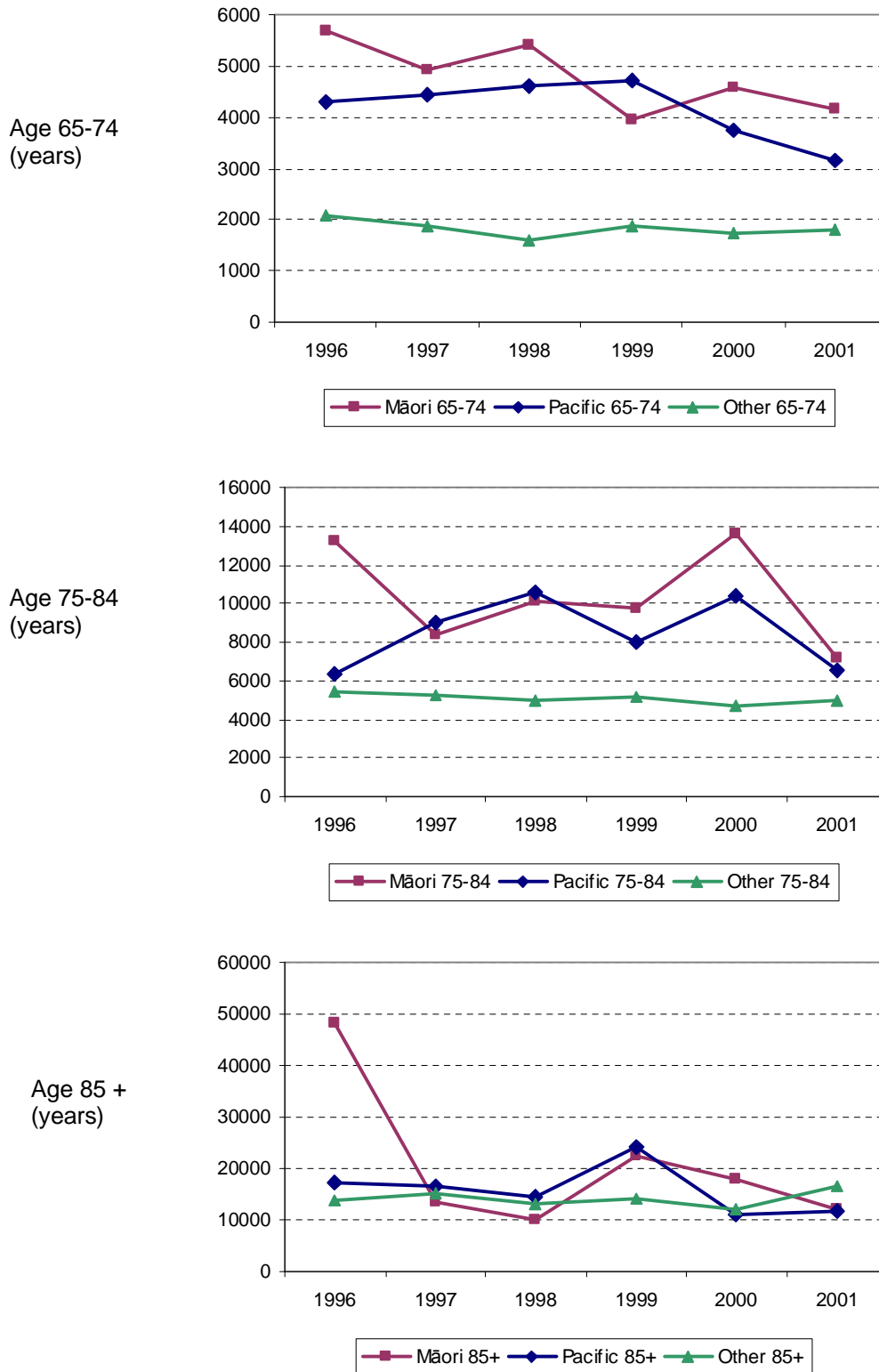
Year	CMDHB 65-74						CMDHB 75-84						CMDHB 85+					
	Māori		Pacific		Other		Māori		Pacific		Other		Māori		Pacific		Other	
	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate
1996	47	5,700	54	4,300	331	2,070	30	13,270	25	6,340	480	5,450	14	48,270	14	17,280	325	13,740
1997	44	4,910	58	4,430	303	1,860	19	8,370	39	8,980	473	5,190	5	13,510	12	16,660	395	15,290
1998	53	5,410	64	4,620	267	1,600	24	10,080	46	10,570	466	4,960	4	10,000	12	14,450	363	12,930
1999	42	3,950	68	4,730	316	1,870	24	9,750	39	8,020	505	5,190	11	22,440	15	24,190	420	14,040
2000	51	4,570	57	3,760	296	1,720	36	13,630	55	10,390	470	4,640	9	18,000	9	10,970	392	12,200
2001	52	4,160	63	3,150	294	1,800	23	7,180	51	6,530	490	4,980	6	12,000	19	11,870	534	16,520
Age-specific % change rates 1996-2001	-26%		-23%		-11%		-19%		5%		-10%		-70%		-27%		6%	

Source: NZHIS

# % change represents the overall trend in mortality for the period 1996-2001

The higher rates of all-cause mortality among Maori and Pacific people compared with non-Maori, non-Pacific people is evident across this time period and is most marked in the 65-74 years age range.

**Figure 53: Age-specific mortality rates in CMDHB by ethnicity, 1996-2001**



Rates per 100,000 age-specific population

## 4.2.6 Leading causes of death

The leading causes of death within each age group vary by gender and ethnicity. The four major causes of death across age groups and genders are cancer (all-cause), ischaemic heart disease (IHD), chronic obstructive respiratory disease (CORD), and cerebrovascular diseases.

### 65-74 Years

There is considerable congruence between genders in the six top ranking causes of mortality in the 65-74 age group, however the rates for males exceed those for females for each of these aetiologies (with the exception of CORD). For every 1000 males or females in the 65-74 age range in CM, approximately 2 will die of CORD in any one year. For every 1000 males aged 65-74 in CM, approximately 5 will die of IHD in any one year. Cancer accounts for around 40% of all mortality in this age group, where approximately 7 of every 1000 females and 11 of every 1000 males will die of cancer (Table 40, Table 41, Figure 54).

**Table 40: Leading causes of death in CM females aged 65-74, 2000-2001**

Cause of death: 65-74 years females	No.	Rate	%	Rank
Cancer (C00-C97)	67	670	42%	1
Ischaemic heart disease (IHD) (I20-I25)	23	220	14%	2
CORD (J40-J44, J47)	19	180	12%	3
Cerebrovascular diseases eg stroke (I60-I69)	12	120	8%	4
Diabetes mellitus (E10-E14)	10	90	6%	5
Other forms of heart disease (I30-I52)	5	50	3%	6
Diseases of arteries/arterioles/capillaries (I70-I79)	4	30	3%	7
Hypertensive diseases (I10-I15)	2	20	1%	8
Unintentional Injury (V00-X49)	2	20	1%	8
Chronic rheumatic heart diseases (I05-I09)	2	10	1%	10
All other causes	13	130	8%	
Leading 10 causes	146	1,420	92%	
Total	159	1,550	100%	

\*number and rate per 100,000 average annualised 2000/2001  
Source: NZHIS

**Table 41: Leading causes of death in CM males aged 65-74, 2000-2001**

Cause of death: 65-74 years males	No.	Rate	%	Rank
Cancer (C00-C97)	100	1,060	40%	1
Ischaemic heart disease (IHD) (I20-I25)	49	520	20%	2
CORD (J40-J44, J47)	18	190	7%	3
Cerebrovascular diseases eg stroke (I60-I69)	15	150	6%	4
Diabetes mellitus (E10-E14)	12	130	5%	5
Other forms of heart disease (I30-I52)	7	70	3%	6
Diseases of arteries/arterioles/capillaries (I70-I79)	7	70	3%	6
Disease of the liver (K70-K77)	4	40	1%	8
Unintentional Injury (V00-X49)	3	30	1%	9
Hypertensive diseases (I10-I15)	3	20	1%	10
All other causes	30	310	12%	
Leading 10 causes	218	2,320	88%	
Total	248	2,630	100%	

\*number and rate per 100,000 average annualised 2000/2001  
Source: NZHIS

## 75-84 Years

In the older age groups, IHD mortality is more prominent, accounting for around a quarter of all deaths in both the 75-84 and 85+ year old age groups. Approximately 10 out of every 1000 females and 19 of every 1000 males will die from IHD in the 75-84 age range in any one year (Figure 54, Table 42 & Table 43).

**Table 42: Leading causes of death for CM females aged 75-84, 2000-2001**

Cause of death: 75-84 years females	No.	Rate	%	Rank
IHD (I20-I25)	65	1,010	25%	1
Cancer (C00-C97)	59	910	22%	2
Cerebrovascular diseases (I60-I69)	39	600	15%	3
CORD (J40-J44, J47)	23	350	9%	4
Other forms of heart disease (I30-I52)	10	150	4%	5
Diabetes mellitus (E10-E14)	10	140	4%	6
Unintentional Injury (V00-X49)	9	140	3%	7
Diseases of arteries/arterioles/capillaries (I70-I79)	6	80	2%	8
Other degenerative nervous system diseases (G30-G32)	6	80	2%	8
Organic mental disorders (F00-F09)	5	70	2%	10
All other causes	34	530	13%	
Leading 10 causes	230	3,570	87%	
Total	264	4,100	100%	

\*number and rate per 100,000 average annualised 2000/2001

Source: NZHIS

**Table 43: Leading causes of death for CM males aged 75-84, 2000-2001**

Cause of death: 75-84 years males	No.	Rate	%	Rank
Cancer (C00-C97)	86	1,920	29%	1
IHD (I20-I25)	84	1,860	28%	2
Cerebrovascular diseases (I60-I69)	32	700	11%	3
CORD (J40-J44, J47)	21	470	7%	4
Other forms of heart disease (I30-I52)	12	260	4%	5
Diabetes mellitus (E10-E14)	11	230	4%	6
Diseases of arteries/arterioles/capillaries (I70-I79)	8	180	3%	7
Organic mental disorders (F00-F09)	6	120	2%	8
Other degenerative nervous system diseases (G30-G32)	5	110	2%	8
Extrapyramidal movement disorders (G20-G26)	4	90	1%	10
Unintentional Injury (V00-X49)	4	90	1%	10
All other causes	26	570	9%	
Leading 11 causes	273	6090	91%	
Total	299	6660	100%	

\*number and rate per 100,000 average annualised 2000/2001

Source: NZHIS

## 85+ Years

By age 85 and over, an estimated 34 of every 1000 females and 45 of every 1000 males died of IHD. In this age group female (2411 per 100,000) cerebrovascular mortality exceeded that of males (1822 per 100,000) (Table 44, Table 45, Figure 54). As everyone has to die of something eventually the exact cause of death in this age group is perhaps a bit less important.

**Table 44: Leading cause of death for CM females aged 85+, 2000-2001**

Cause of death: 85+ years females	No.	Rate	%	Rank
IHD (I20-I25)	79	3,410	26%	1
Cerebrovascular diseases (I60-I69)	56	2,410	18%	2
Cancer (C00-C97)	36	1,540	12%	3
Other forms of heart disease (I30-I52)	26	1,130	8%	4
CORD (J40-J44, J47)	18	760	6%	5
Organic mental disorders (F00-F09)	15	650	5%	6
Other degenerative nervous system diseases (G30-G32)	13	540	4%	7
Diseases of arteries/arterioles/capillaries (I70-I79)	9	370	3%	8
Influenza and pneumonia (J10-J18)	9	370	3%	8
Unintentional Injury (V00-X49)	5	210	2%	10
All other causes	43	1,840	14%	
Leading 10 causes	264	11,450	86%	
Total	306	13,290	100%	

\*number and rate per 100,000 average annualised 2000/2001

Source: NZHIS

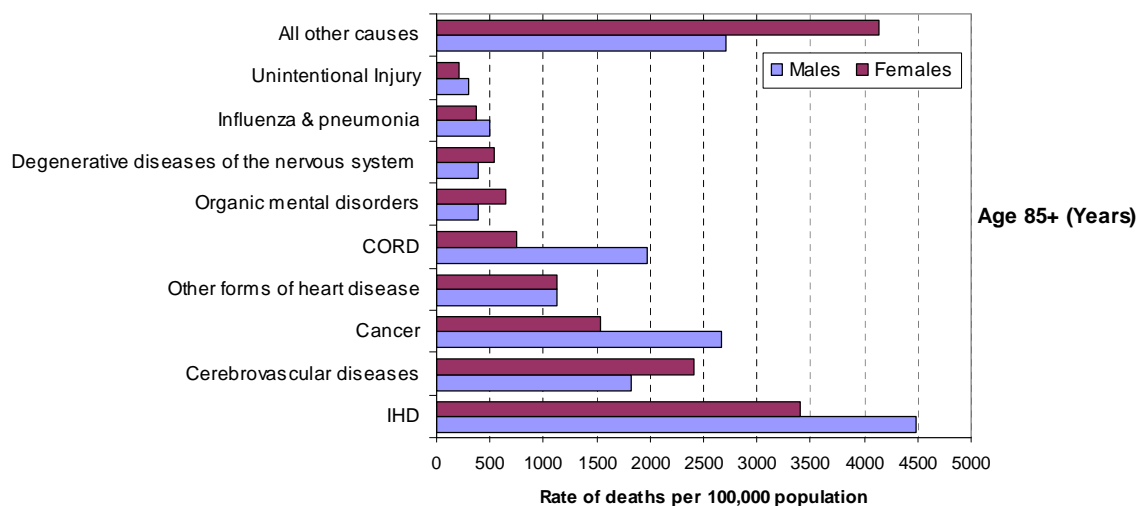
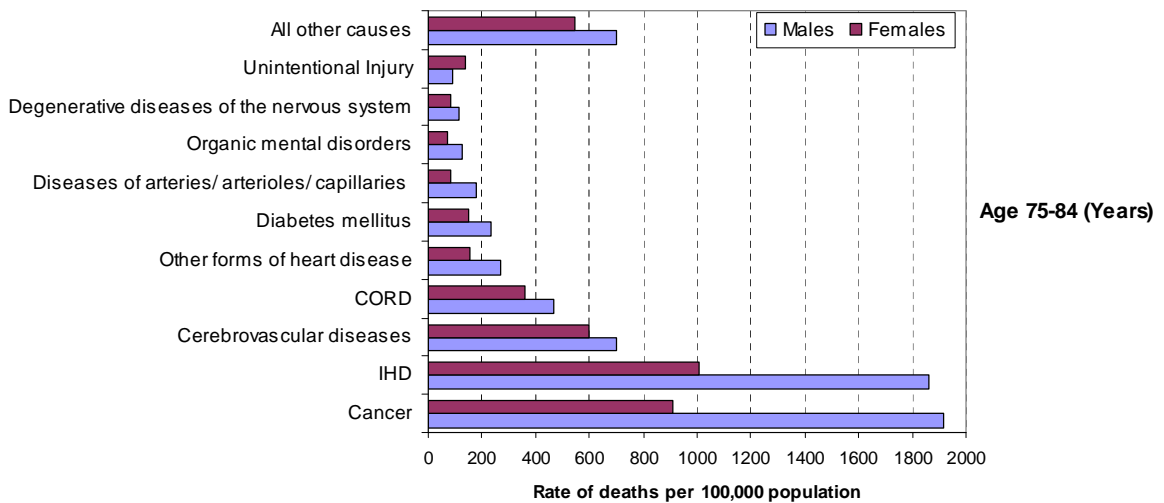
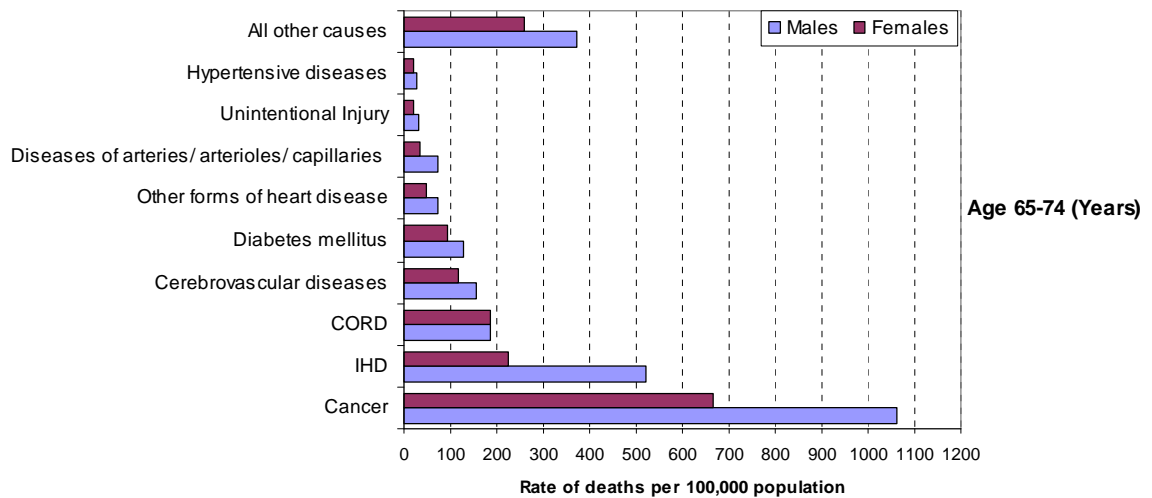
**Table 45: Leading cause of death for CM males aged 85+, 2000-2001**

Cause of death: 85+ years Males	No.	Rate	%	Rank
IHD (I20-I25)	46	4,480	27%	1
Cancer (C00-C97)	27	2,660	16%	2
CORD (J40-J44, J47)	20	1,970	12%	3
Cerebrovascular diseases (I60-I69)	19	1,820	11%	4
Other forms of heart disease (I30-I52)	12	1,130	7%	5
Influenza and pneumonia (J10-J18)	5	490	3%	6
Diabetes mellitus (E10-E14)	5	440	3%	7
Organic mental disorders (F00-F09)	4	390	2%	8
Other degenerative nervous system diseases (G30-G32)	4	390	2%	8
Unintentional Injury (V00-X49)	3	290	2%	10
Renal Failure (N17-N19)	3	290	2%	10
All other causes	18	1,770	11%	
Leading 12 causes	148	14,570	89%	
Total	166	16,340	100%	

\*number and rate per 100,000 average annualised 2000/2001

Source: NZHIS

**Figure 54: Selected causes of mortality for CM older adults, 2000-2001**



#### 4.2.6.1 Leading causes of death by ethnicity

The absolute numbers of age-specific deaths by ethnic groups in any given year are small, so for the purpose of the following section; males and females are considered together; age groups are pooled to 65-74, and 75+; and numbers and rates are annualised for 2000-2001.

##### Age 65-74 (Table 46, Table 47, & Table 47)

Overall the major causes of mortality for each ethnic group are cancer, IHD, cerebrovascular disease and COD. Cancer is the leading cause of death for all ethnic groups. Diabetes mellitus is more prominent cause of death for both Māori and Pacific in comparison to non-Māori, non-Pacific. COD is the second leading cause of death for Māori, the third for non-Māori, non-Pacific but the fifth for Pacific peoples.

Although the annualised absolute numbers of mortality are small (therefore likely to vary between years), the rate of cancer related death for Māori aged 65-74 was twice that of non-Māori, non-Pacific and 1.5 fold that of Pacific peoples. Pacific had the highest rates of IHD and cerebrovascular mortality in comparison with non-Pacific groups. The rate of diabetes mortality was similar for Māori and Pacific, but considerably above that for non-Māori, non-Pacific in this age range.

**Table 46: Leading causes of death for Māori aged 65-74 years of age, 2000-2001**

Cause of death: Maori 65-74 years	No.	Rate	%	Rank
Cancer (C00-C97)	20	1650	38%	1
CORD (J40-J44, J47)	9	720	17%	2
Diabetes mellitus (E10-E14)	6	500	12%	3
IHD (I20-I25)	5	420	10%	4
Cerebrovascular disease (I60-I69)	2	170	4%	5
Other forms of heart disease (I30-I69)	2	170	4%	5
All other causes	9	720	17%	
Leading 6 causes	43	3630	83%	
Total	52	4350	100%	

\*number and rate per 100,000 average annualised 2000/2001  
Source: NZHIS

**Table 47: Leading causes of death for Pacific aged 65-74 years of age, 2000-2001**

Cause of death: Pacific 65-74 years	No.	Rate	%	Rank
Cancer (C00-C97)	17	960	28%	1
IHD (I20-I25)	12	680	20%	2
Diabetes mellitus (E10-E14)	9	480	14%	3
Cerebrovascular disease (I60-I69)	6	340	10%	4
CORD (J40-J44, J47)	5	280	8%	5
Other forms of heart disease (I30-I69)	3	140	4%	6
All other causes	9	510	15%	
Leading 6 causes	51	2900	85%	
Total	60	3410	100%	

\*number and rate per 100,000 average annualised 2000/2001  
Source: NZHIS

**Table 48: Leading causes of death for Other aged 65-74 years of age, 2000-2001**

<b>Cause of death: non-Maori non-Pacific (Other) 65-74 years</b>	<b>No.</b>	<b>Rate</b>	<b>%</b>	<b>Rank</b>
Cancer (C00-C97)	132	780	45%	1
IHD (I20-I25)	55	320	19%	2
CORD (J40-J44, J47)	23	130	8%	3
Cerebrovascular disease (I60-I69)	19	110	6%	4
Other forms of heart disease (I30-I69)	8	40	3%	5
Diseases of the arteries/arterioles/capillaries (I70-I79)	8	40	3%	5
Diabetes mellitus (E10-E14)	7	40	2%	7
All other causes	45	270	15%	
Leading 7 causes	251	1490	85%	
Total	295	1760	100%	

\*number and rate per 100,000 average annualised 2000/2001  
Source: NZHIS

**Age 75+ (Table 49, Table 50, & Table 49)**

The leading causes of death for Māori aged 75+ broadly parallel those of the younger cohort, however CORD is less prominent aetiology in this older group. For Others, IHD surpasses cancer as the leading cause of death and organic mental disorders (predominantly dementias) and other degenerative diseases of the nervous system (e.g. Alzheimers disease) appear amongst the leading causes.

**Table 49: Leading causes of death for Māori aged 75+ years of age, 2000-2001**

<b>Cause of death: Maori 75+ years</b>	<b>No.</b>	<b>Rate</b>	<b>%</b>	<b>Rank</b>
Cancer (C00-C97)	11	3210	30%	1
IHD (I20-I25)	9	2630	24%	2
Diabetes mellitus (E10-E14)	4	1170	11%	3
Cerebrovascular disease (I60-I69)	3	870	8%	4
CORD (J40-J44, J47)	2	580	5%	5
All other causes	8	2340	22%	
Leading 5 causes	29	8480	78%	
Total	37	10820	100%	

\*number and rate per 100,000 average annualised 2000/2001  
Source: NZHIS

**Table 50: Leading causes of death for Pacific aged 75+ years of age, 2000-2001**

<b>Cause of death: Pacific 75+ years</b>	<b>No.</b>	<b>Rate</b>	<b>%</b>	<b>Rank</b>
Cancer (C00-C97)	15	1930	22%	1
Cerebrovascular disease (I60-I69)	13	1670	19%	2
IHD (I20-I25)	13	1610	19%	3
CORD (J40-J44, J47)	8	1030	12%	4
Diabetes mellitus (E10-E14)	6	700	8%	5
Other forms of heart disease (I30-I69)	4	450	5%	6
All other causes	10	1230	14%	
Leading 6 causes	58	7410	86%	
Total	67	8640	100%	

\*number and rate per 100,000 average annualised 2000/2001  
Source: NZHIS

**Table 51: Leading causes of death for Other aged 75+ years of age, 2000-2001**

<b>Cause of death: Other 75+ years</b>	<b>No.</b>	<b>Rate</b>	<b>%</b>	<b>Rank</b>
IHD (I20-I25)	252	1910	27%	1
All cancer (C00-C97)	181	1370	19%	2
Cerebrovascular disease (I60-I69)	129	970	14%	3
CORD (J40-J44, J47)	72	540	8%	4
Other forms of heart disease (I30-I69)	55	410	6%	5
Organic mental disorders (F00-F09)	26	190	3%	6
Other degenerative nervous system disease (G30-G32)	26	190	3%	7
Diseases of the arteries/arterioles/capillaries (I70-I79)	22	160	2%	8
Diabetes mellitus (E10-E14)	20	140	2%	9
Influenza and pneumonia (J10-J18)	17	120	2%	10
Unintentional Injury (V00-X49)	13	90	1%	11
All other causes	122	930	13%	
Leading 11 causes	809	6160	87%	
Total	931	7090	100%	

\*number and rate per 100,000 average annualised 2000/2001  
Source: NZHIS

#### **4.2.7 Potentially avoidable mortality (PAM)**

All cause mortality rates are a less useful indicator of the health for older people than for younger age groups (given that everyone dies from some cause). A more useful indicator is that of avoidable mortality. A potentially avoidable death is defined as one that in theory could have been avoided or postponed by either disease prevention or health intervention. This analysis focuses on one subcategory of avoidable mortality referred to as primary avoidable mortality. Primary avoidable mortality refers to conditions that are preventable, whether through individual behaviour change (lifestyle modification) or population level intervention (healthy public policy). The condition is prevented before it develops by addressing its risk or protective factors: 'primary prevention'.

Analysis of avoidable mortality depends on both the accurate assignment of cause of death or hospitalisation (or some other morbidity measure); and, secondly, categorical attribution of each cause as 'avoidable' or 'unavoidable'. While in reality there is substantial overlap between categories, focusing on availability is a valuable indicator to guide and monitor health promoting actions. The assignment of deaths to avoidable and unavoidable becomes more problematic for older ages due to increasing co-morbidities and the inevitable prospect that we all die of something.

While PAM is strictly meant to apply to deaths under the age 75 only we have shown the older age groups for comparison – and there will surely be some “postponable” deaths in these groups. A list of diseases and injuries attributed as being avoidable is given in the Appendix.

Approximately 60-69% of all deaths for CM adults aged 65 years and over are categorised as potentially 'avoidable'. The impact of smoking is seen in high rates of lung cancer and CORD, IHD, colorectal cancer and stroke in the 65-74 and 75-84 year old age groups.

## Age 65-74 Years

**Table 52: Potentially avoidable mortality for CM females aged 65-74 years, 2000-2001**

The leading causes of potentially avoidable mortality amongst females aged 65-74 years are ranked in Table 52. Aligned with the leading causes of total mortality, PAM is dominated by IHD, cancers (lung, colorectal and breast), diabetes, stroke and CORD. An estimated 69% of all deaths in CM females aged 65-74 were considered potentially avoidable.

Females 65-74 years			
Cause of PAM	No.	Rate	Rank
IHD	23	220	1
Lung cancer	18	170	2
CORD	18	170	3
Colorectal cancer	11	100	4
Diabetes	10	90	5
Breast cancer	8	70	6
Stroke	7	60	7
PAM Total	110	1060	
non-PAM	49	480	
Total mortality	159	1540	
% of total mortality	69%		

Source: NZHIS

#Rate per 100,000 per year annualised for 2000-2001

\*Number of deaths per year (averaged 2000-2001)

**Table 53: Potentially avoidable mortality for CM males aged 65-74 years, 2000-2001**

Total and potentially avoidable mortality rates amongst males are higher in comparison to females in this age range. However, the leading five causes of PAM (and total mortality) are the same for both genders. Skin cancers are the 7<sup>th</sup> leading causes of PAM for males aged 65-74 years, contributing an average of 53 deaths per 100,000 population per year during 2000-2001.

Males 65-74 years			
Cause of PAM	No.	Rate	Rank
IHD	49	520	1
Lung cancer	27	280	2
CORD	17	170	3
Colorectal cancer	13	130	4
Diabetes	12	120	5
Stroke	11	110	6
Skin cancers	5	50	7
PAM Total	160	1690	
non-PAM	88	930	
Total mortality	248	2630	
% of total mortality	65%		

Source: NZHIS

#Rate per 100,000 annualised for 2000-2001

\*Number of deaths per year (averaged 2000-2001)

## Age 75-84 Years

**Table 54: Potentially avoidable mortality for CM females aged 75-84 years, 2000-2001**

Overall the 7 leading causes of PAM in the female 75-84 cohort remain the same as in the younger 65-74 years old cohort, however stroke moves from 7<sup>th</sup> to 2<sup>nd</sup> ranked cause.

Females 75-84 years			
Cause of PAM	No.	Rate	Rank
IHD	65	1000	1
Stroke	28	420	2
CORD	20	310	3
Lung cancer	13	200	4
Diabetes	10	140	5
Colorectal cancer	10	140	6
Breast cancer	6	70	7
PAM Total	171	2650	
non-PAM	93	1440	
Total mortality	264	4090	
% of total mortality	65%		

Source: NZHIS

#Rate per 100,000 annualised for 2000-2001

\*Number of deaths per year (averaged 2000-2001)

**Table 55: Potentially avoidable mortality for CM males aged 75-84 years, 2000-2001**

The major contributors to PAM for males aged 75-84 closely parallel those for females, with the exception of the 7<sup>th</sup> ranked cause which is stomach cancer amongst males and breast cancer amongst females.

Males 75-84 years			
Cause of PAM	No.	Rate	Rank
IHD	84	1860	1
Stroke	23	550	2
CORD	21	460	3
Lung cancer	19	410	4
Colorectal cancer	13	290	5
Diabetes	11	230	6
Stomach cancer	6	120	7
PAM Total	197	4350	
non-PAM	102	2300	
Total mortality	299	6650	
% of total mortality	66%		

Source: NZHIS

#Rate per 100,000 annualised for 2000-2001

\*Number of deaths per year (averaged 2000-2001)

**Age 85+ Years**

**Table 56: Potentially avoidable mortality for CM females aged 85+ years 2000-2001**

The three major contributors of potentially avoidable death are IHD, stroke and CORD for both genders for the 85+ group. As the absolute numbers of potentially avoidable deaths are small for both genders beyond these three major contributors, it is difficult to meaningfully comment on the patterns shown in Table 56 and Table 57.

Females 85+ years			
Cause of PAM	No.	Rate	Rank
IHD	74	3410	1
Stroke	40	1710	2
CORD	18	750	3
Respiratory infections	6	260	4
Breast cancer	6	240	5
Colorectal cancer	5	210	6
Hypertensive disease	5	190	7
PAM Total	184	7980	
non-PAM	122	5320	
Total mortality	306	13310	
% of total mortality	60%		

Source: NZHIS

#Rate per 100,000 annualised for 2000-2001

\*Number of deaths per year (averaged 2000-2001)

**Table 57: Potentially avoidable mortality for CM males aged 85+ years, 2000-2001**

Males 85+ years			
Cause of PAM	No.	Rate	Rank
IHD	46	4480	1
CORD	20	1970	2
Stroke	15	1470	3
Diabetes	5	440	4
Skin cancers	4	390	5
Lung cancer	3	290	6
Colorectal cancer	3	240	7
PAM Total	105	10340	
non-PAM	61	6010	
Total mortality	166	16360	
% of total mortality	63%		

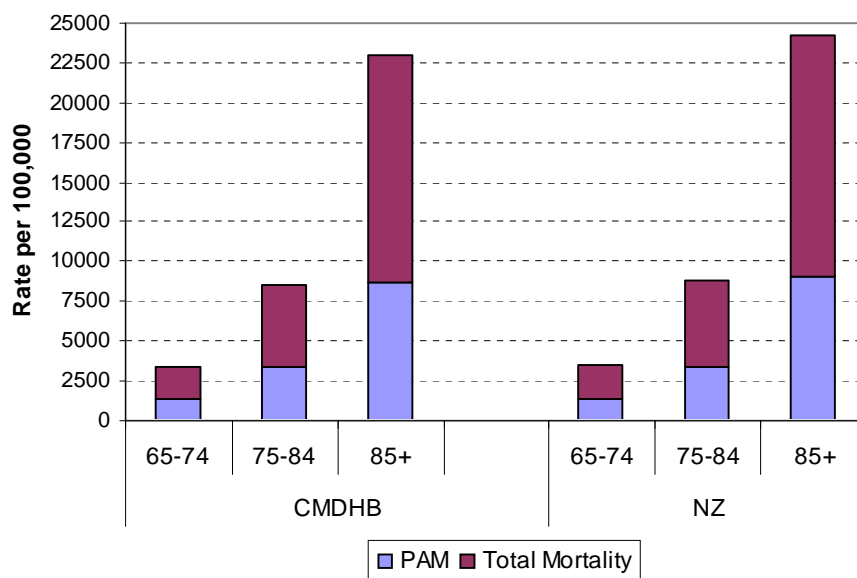
Source: NZHIS

#Rate per 100,000 annualised for 2000-2001

\*Number of deaths per year (averaged 2000-2001)

As might be expected the proportion of total mortality that is considered potentially avoidable decreases with age. The rates in CM are marginally less for all age groups but broadly approximate those for NZ as a whole.

**Figure 55: Proportion of the total all-cause age-specific mortality rate that is categorised as potentially avoidable for CM and NZ 2000/2001**



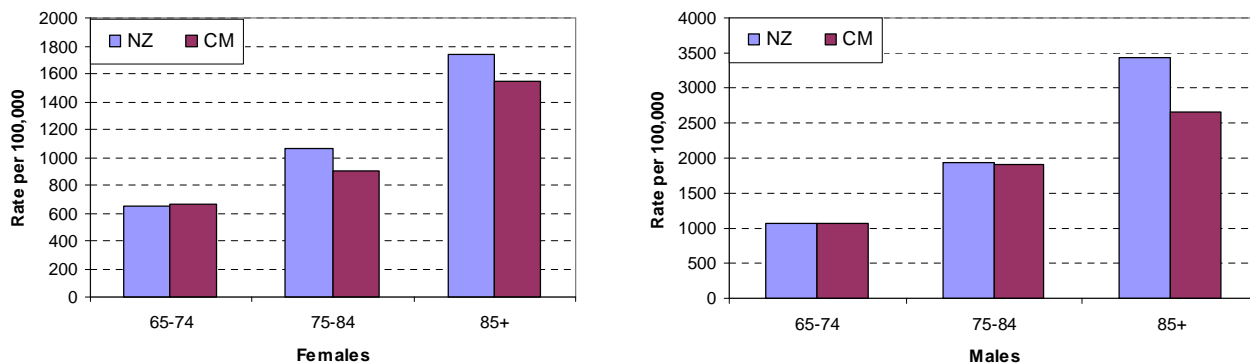
## 4.2.8 Selected cause-specific mortality

### 4.2.8.1 Cancer mortality

Cancer is the leading cause of death in the Counties Manukau population aged 65 years and over. For this population during the period 2000-2001, cancer accounted for 23% of deaths in CM females and 31% of all deaths in males in CM - paralleling identical national rates.

For 65+ age groups the rate of all-cause cancer deaths in males exceeds that of females (Figure 56). The rate of cancer deaths also increases with age for both genders.

**Figure 56: Cancer mortality rates by age and gender for CM and NZ, 2000-2001**

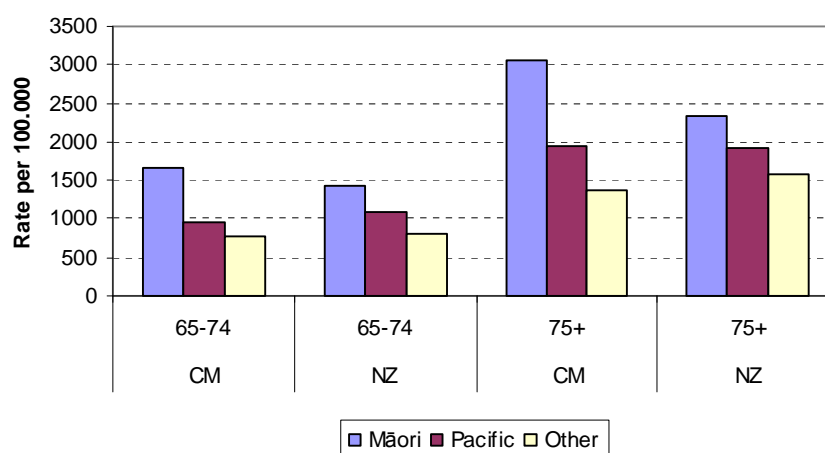


In addition to gender disparities described above, there are disparities in cancer mortality rates by ethnicity across genders, with the highest rates in Māori, followed by Pacific and then Other (non-Māori, non-Pacific) for CM and NZ females aged 65-74 and 75+ and CM males aged 75+ (Table 58 & Figure 57).

**Table 58: Number and rate of cancer deaths by gender and ethnicity for CM and NZ**

Ethnicity	65-74								75+							
	Males				Females				Males				Females			
	No.		Rate		No.		Rate		No.		Rate		No.		Rate	
	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ
Māori	18	213	1687	1609	21	186	1619	1245	10	121	3759	2969	11	116	2632	1906
Pacific	15	67	952	1352	19	53	978	857	16	48	2792	2883	14	40	1433	1374
Other	167	2305	1032	1029	97	1448	560	606	199	3312	1959	2188	163	3005	1013	1225
Total	200	2585	972	1068	137	1687	666	648	225	3481	2046	2216	188	3161	1075	1243

**Figure 57: CM and NZ rates of all-cause cancer deaths by ethnicity, 2000-2001**



The leading causes of cancer-specific mortality for CM females aged 65+ are lung, colorectal and breast cancer (Table 59, Figure 58). Together the three top causes account for between 43-52% of all cancer mortality for the 75+ and 65-74 age groups respectively.

Similarly lung and colorectal cancers are amongst the most common cancers causing death for CM males aged 65+ years (Table 60, Figure 58). These aetiologies account for around 50% of all cancer deaths for males in this age group.

**Table 59: Leading cause of cancer mortality by principal ICD 10 diagnosis for females age 65+, by age group in CM and NZ as whole, 2000-2001**

Cancer	CM Female 65-74			NZ Female 65-74			CM Female 75+			NZ Female 75+		
	No.	Rate	%	No.	Rate	%	No.	Rate	%	No.	Rate	%
Lung/bronchus (C34)	35	170	26%	343	132	20%	31	177	16%	431	169	14%
Colorectal (C18-C21)	21	102	15%	284	109	17%	29	166	15%	575	226	18%
Breast (C50)	15	73	11%	253	97	15%	23	131	12%	398	157	13%
Lymphoid, haematopoietic cancer (C81-96)	13	63	9%	132	51	8%	16	91	9%	297	117	9%
Ill-defined, secondary & unspecified (C76-80)	6	29	4%	114	44	7%	21	120	11%	278	109	9%
Pancreatic (C25)	7	34	5%	88	34	5%	8	46	4%	145	57	5%
Ovarian (C56)	5	24	4%	87	33	5%	6	34	3%	127	50	4%
Uterine (C53-55)	6	29	4%	75	29	4%	5	29	3%	97	38	3%
Stomach (C16)	4	19	3%	48	18	3%	10	57	5%	123	48	4%
Brain (C71)	4	19	3%	46	18	3%	1	6	1%	45	18	1%
Urinary tract (C64-68)	6	29	4%	45	17	3%	9	51	5%	138	54	4%
Skin (C43-44)	2	10	1%	39	15	2%	5	29	3%	133	52	4%
Oesophagus (C15)	3	15	2%	23	9	1%	7	40	4%	98	39	3%
Total leading cancers	127	617	93%	1577	606	93%	171	978	91%	2885	1135	91%
All other cancers	10	49	7%	110	42	7%	17	97	9%	276	109	9%
Total Cancer (C00-C97)	137	666	100%	1687	648	100%	188	1075	100%	3161	1243	100%

Source: NMDS, NZHIS,

# Numbers for 2000-2001 combined

# Rates annualised for period 2000-2001

**Table 60: Leading cause of cancer mortality by principal ICD 10 diagnosis for males age 65+, by age in CM and NZ as whole, 2000-2001**

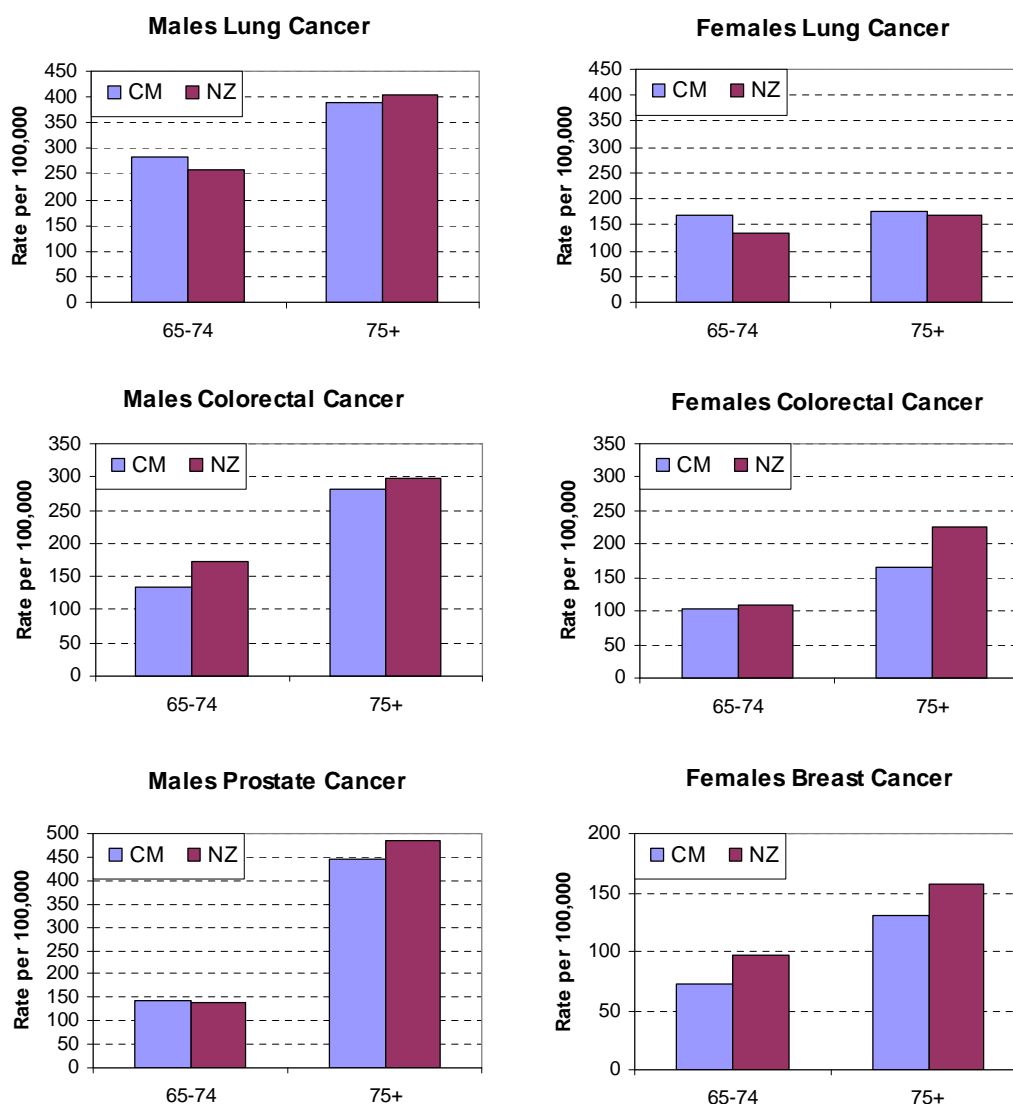
Cancer	CM Male 65-74			NZ Male 65-74			CM Male 75+			NZ Male 75+		
	No.	Rate	%	No.	Rate	%	No.	Rate	%	No.	Rate	%
Lung/bronchus (C34)	53	282	27%	629	260	24%	43	391	19%	635	404	18%
Colorectal (C18-C21)	25	133	13%	413	171	16%	31	282	14%	470	299	14%
Prostate (C61)	27	143	14%	334	138	13%	49	446	22%	759	483	22%
Lymphoid, haematopoietic cancer (C81-96)	13	69	7%	214	88	8%	22	200	10%	354	225	10%
Ill-defined, secondary & unspecified (C76-80)	11	58	6%	141	58	5%	16	146	7%	205	130	6%
Stomach (C16)	6	32	3%	117	48	5%	12	109	5%	147	94	4%
Urinary tract (C64-68)	10	53	5%	113	47	4%	12	109	5%	202	129	6%
Skin (C43-44)	10	53	5%	105	43	4%	11	100	5%	162	103	5%
Pancreatic (C25)	6	32	3%	98	40	4%	6	55	3%	116	74	3%
Oesophagus (C15)	7	37	4%	83	34	3%	6	55	3%	111	71	3%
Brain (C71)	8	43	4%	63	26	2%	1	9	0%	42	27	1%
Liver and intrahepatic bile ducts (C22)	5	27	3%	52	21	2%	6	55	3%	42	27	1%
Cancer of unknown/uncertain behaviour	3	16	2%	28	12	1%	8	73	4%	87	55	2%
Total leading cancers	184	978	92%	2390	987	92%	223	2028	99%	3332	2121	96%
All other cancers	16	85	8%	195	81	8%	2	18	1%	149	95	4%
Total cancer (C00-C97)	200	1063	100%	2585	1068	100%	225	2046	100%	3481	2216	100%

Source: NMDS, NZHIS

# Numbers for 2000-2001 combined

# Rates annualised for period 2000-2001

**Figure 58: Selected causes of cancer mortality by gender, CM and NZ, 2000-2001**



#### 4.2.8.2 Ischaemic heart disease

Ischaemic heart disease (IHD) is the second leading cause of death in the 65-74 year age group and leading cause in the 85+ group for both genders. It covers all types of heart disease where the principal problem is a lack of oxygen to the heart muscle, from angina through to heart attacks. IHD is the leading cause of potentially avoidable mortality for all ages and genders.

Acute myocardial infarction or 'heart attack' (ICD-10 I21) and chronic IHD (ICD-10 I25) are the two main groupings of IHD, accounting for over 95% of all IHD deaths in older CM adults for both genders. The rate of death from IHD increases markedly with age. Males have higher rates of IHD compared to females in all older age ranges (Table 61, Figure 59).

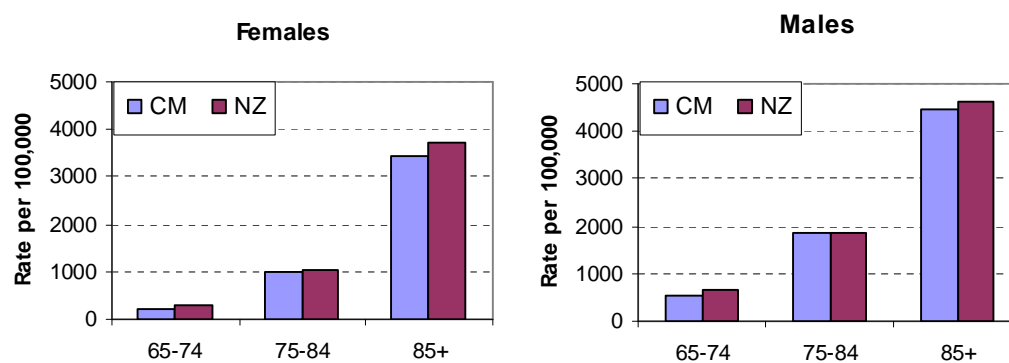
**Table 61: Ischaemic heart disease mortality by gender and age, CM and NZ, 2000-2001**

IHD (I20-I25)	Female				Male			
	CM		NZ		CM		NZ	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
65-74	46	224	770	296	98	521	1,558	643
75-84	130	1,009	1,938	1,042	167	1,863	2,366	1,849
85+	157	3,410	2,538	3,713	91	4,481	1,353	4,648

Source: NMDS, NZHIS. # Numbers for 2000-2001 combined. # Rates annualised for period 2000-2001

IHD mortality in CM approximates that for NZ as a whole (Figure 59).

**Figure 59: IHD mortality by gender and age, CM and NZ, 2000-2001**



Maori and Pacific are most of risk of dying in CM from IHD at all ages. Given the small 65+ populations and the resulting low absolute numbers of IHD mortality in CM by gender and ethnic group it is difficult to meaningfully interpret the trends shown in Table 62. However for both CM and NZ overall, IHD deaths in the 65+ are generally highest for Maori, followed by Pacific and Other females (Table 62)

**Table 62: Female IHD mortality by ethnicity and age for CM and NZ, 2000-2001**

IHD (I20-I25)	CM Female						NZ Female					
	Maori		Pacific		Other		Maori		Pacific		Other	
	No.#	Rate*	No.#	Rate*	No.#	Rate*	No.#	Rate*	No.#	Rate*	No.#	Rate*
65-74	4	308	6	309	36	208	114	763	26	420	630	263
75-84	8	2,286	7	870	115	980	94	1,841	33	1,373	1,811	1,015
85+	0	-	6	3,488	151	3,460	50	5,102	17	3,340	2,471	3,695

Source: NMDS, NZHIS. # Numbers for 2000-2001 combined \* Rates annualised for period 2000-2001

Similar ethnic disparities are seen for NZ males. The small numbers of IHD related deaths for age 85+ CM Maori and Pacific males prohibits interpretation of these data for CM (Table 63).

**Table 63: Male IHD mortality by ethnicity and age for CM and NZ 2000-2001**

IHD (I20-I25)	CM Male						NZ Male					
	Maori		Pacific		Other		Maori		Pacific		Other	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
65-74	6	562	18	1,143	74	457	165	1,247	57	1,151	1,336	597
75-84	7	2,991	10	1,988	150	1,823	94	2,651	31	2,102	2,241	1,823
85+	2	-	2	-	87	4,512	20	3,781	7	3,684	1,326	4,670

Source: NMDS, NZHIS. # Numbers for 2000-2001 combined \* Rates annualised for period 2000-2001

## 4.3 Hospitalisation rates

Hospitalisation rates are one proxy for assessing morbidity and are often the default in the absence of timely or representative prevalence data from population surveys/surveillance. There are several important caveats to consider in doing so, particularly that rates based on health service contact are an imperfect proxy for disease prevalence as they are influenced by other factors such as disease severity, supply of services, and access criteria or barriers.

This sub-section presents:

1. All-cause hospitalisation rates by age, gender, ethnicity and geographic region.
2. Leading causes of hospitalisation by age and gender.
3. Trends (1996-2004) for all and selected-cause hospitalisations
4. Potentially avoidable hospitalisations

### 4.3.1 Age and Gender

In CM, approximately 15,100 of 48,868 (31%) of all CMDHB hospitalisations for adults with medical or surgical conditions<sup>2</sup> in 2004 were for adults aged 65 years and over (figures exclude private hospitals). Those aged 65 years and over account for around half the bed days used by adults for medical-surgical causes. Hospitalisation rates increase with age amongst the 65+ year old cohort, with males having consistently higher rates of hospitalisation for all older age bands (Table 64). The equivalent of 37% of all CM females and 44% of all males aged 65+ were discharged from a public hospital in 2004.

**Table 64: Hospitalisation numbers and age-specific rates for CM 65+, 2004**

Age	Female		Male	
	No	Rate	No	Rate
65-74	3,243	28,373	3,534	33,851
75-84	3,123	43,801	2,957	56,004
85+	1,404	55,494	839	75,586
Total 65+	7,770	36,842	7,330	43,553

Source: NMDS. No = public hospital discharges. Rate/100,000 per year

### 4.3.2 Ethnicity

There is considerable variation in hospitalisation rates by ethnic group for older adults. The highest rates of hospitalisation in 2004 in CM were for Maori, followed by Pacific, Other and Asian peoples (Table 65, Figure 60). Note the much higher rates in the 85+ - biasing the rates for the Other population 65+ totals much higher, hence the need for age-standardising, as performed in the analyses below. Maori and Pacific older people have a significantly higher risk of being discharged from a public hospital in any one year. However due to the population sizes the vast bulk of all 65+ hospitalisations are from people of European and other extraction.

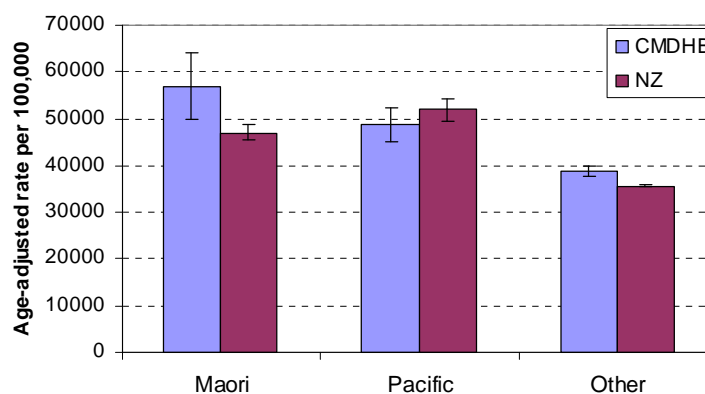
<sup>2</sup> "Medical-surgical" incorporates acute and elective hospitalizations for adult medicine, adult surgery and paediatrics but excludes mental health, maternity, and Health of Older People services. Day patient stays are included.

**Table 65: Hospitalisation numbers and age-specific rates for CM 65+ by ethnicity, 2004**

CMDHB	65-74			75-84			85+			Total 65+		
	No.	Rate	%	No.	Rate	%	No.	Rate	%	No.	Rate	%
<b>Maori</b>	637	43,041	9	231	66,000	4	38	95,000	2	906	48,449	6
<b>Pacific</b>	964	41,197	14	566	60,213	9	79	46,471	4	1609	46,638	11
<b>Asian</b>	487	20,355	7	263	38,255	4	50	45,455	2	800	25,078	5
<b>Other</b>	4689	29,947	69	5020	48,119	83	2076	62,530	93	11,785	40,071	78
<b>Total</b>	6777	30,988	100	6080	48,993	100	2243	61,621	100	15,100	39,821	100

Source: NMDS. #Rates are age-specific therefore differ slightly to age-standardised rates below

**Figure 60: Ethnicity-specific hospitalisation rates, age 65+, CM and NZ, 2004**



Source: NMDS.

Ethnic group "Other" includes all non-Maori, non-Pacific peoples. Rates age standardised to NZ population.

### 4.3.3 Geographic variation in hospitalisation rates

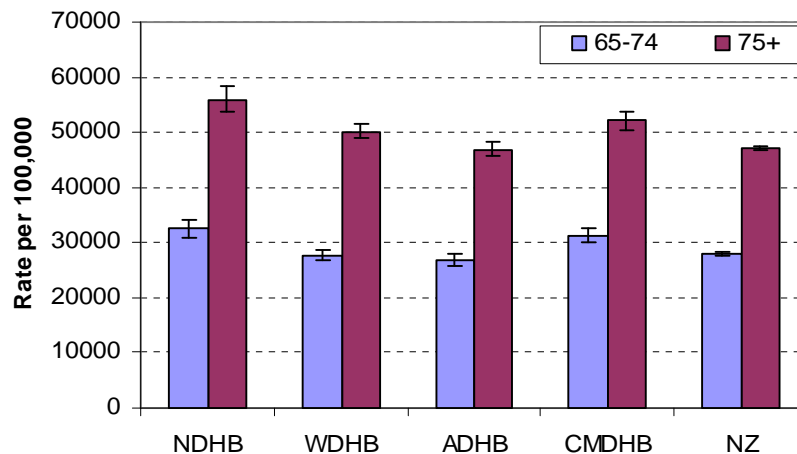
Counties Manukau has higher age-standardised hospitalisation rates for all older age groups compared to ADHB, WDHB and all NZ DHBs combined, but lower rates than NDHB. These differences are statistically significant for CM compared to ADHB, WDHB and NZ for those aged 65-74 and for CM compared to NDHB, ADHB and NZ for those 75 years and over (Table 66, Figure 61).

**Table 66: Age-standardised hospitalisation rates age 65+, CMDHB and NZ, 2004**

DHB	65-74			75+			Total 65+		
	No.	Rate	95% CI	No.	Rate	95% CI	No.	Rate	95% CI
<b>NDHB</b>	3843	32,487	(30884, 34090)	4829	56,002	(53687, 58317)	8672	43,093	(41727, 44458)
<b>WDHB</b>	7621	27,679	(26749, 28610)	12,110	50,222	(48957, 51487)	19,731	37,850	(37850, 38616)
<b>ADHB</b>	5390	26,786	(25678, 27894)	9458	46,894	(45567, 48222)	14,848	35,856	(35003, 36709)
<b>CMDHB</b>	6777	31,308	(30120, 32496)	8324	52,058	(50432, 53683)	15,101	40,664	(39683, 41645)
<b>NZ</b>	72,552	27,938	(27617, 28259)	107,187	47,169	(46763, 47576)	179,739	36,610	(36356, 36864)

Source: NMDS. Rates are age-standardised to total NZ population age structure

**Figure 61: DHB-specific hospitalisation rates, ages 65-74 and 75+ years, 2004**



Source: NMDS. Rates are age-standardised to total NZ population age structure

#### 4.3.4 Leading causes of hospitalisation

The leading age-and gender-specific medical/surgical causes of hospitalisation for older adults in CM are presented in the next series of tables (Table 67 -Table 72).

##### Age 65-74 Years

Cancer, injury, IHD, arthropathies (arthritis and joint problems) and chronic obstructive respiratory disease (CORD) are the leading primary diagnoses amongst females aged 65-74 years hospitalised in CM. These five leading causes accounted for 35% of all med-surg hospitalisations in this age group in 2004.

**Table 67: Leading causes of hospitalisation for CM females aged 65-74 years, 2004**

Cause of hospitalisation CM	Females 65-74 years		
	No.	Rate per 100,000	%
All cause cancer (C00-C97)	306	2,710	9%
Injury (S00-T98)	269	2,410	8%
Ischaemic heart disease (I20-I25)	248	2,170	8%
Arthropathies (M00-M25)	147	1,300	5%
CORD (J40-J44, J47)	148	1,290	5%
Chest pain (R07)	137	1,200	4%
Cardiac arrhythmias (I48, I49, R00)	105	910	3%
Diabetes (E10-E14)	100	870	3%
Cataracts (H25-H26)	91	800	3%
Cerebrovascular disease (I60-I69)	65	570	2%
Influenza and pneumonia (J10-J18)	65	570	2%
Disorders of kidney/urinary system (N00-N39)	66	570	2%
Leading 12 causes	1,747	15,370	53%
All other causes	1,518	13,200	47%
Total all causes	3,265	28,570	100%

Source: NMDS, med-surg public hospitals only

Among CM males aged 65-74 years the leading primary diagnoses resulting in hospitalisation are similar to those for females in this age range, namely cancer, IHD, injury, CORD and arthropathies (Table 68).

**Table 68: Leading causes of hospitalisation for CM males aged 65-74 years, 2004**

Cause of hospitalisation CM	Males 65-74 years		
	No.	Rate per 100,000	%
All cause cancer (C00-C97)	436	4,230	12%
Ischaemic heart disease (I20-I25)	380	3,650	11%
Injury (S00-T98)	232	2,260	7%
CORD (J40-J44, J47)	139	1,340	4%
Arthropathies (M00-M25)	139	1,340	4%
Chest pain (R07)	125	1,200	4%
Diabetes (E10-E14)	98	940	3%
Cardiac arrhythmias (I48-I49, R00)	94	910	3%
Influenza and pneumonia (J10-J18)	85	820	2%
Cerebrovascular disease (I60-I69)	78	750	2%
Congestive heart failure (CHF) (I50, J81)	65	620	2%
Cataracts (H25-H26)	63	600	2%
Leading 12 causes	1,934	18,660	54%
All other causes	1,615	15,330	46%
Total	3,549	33,990	100%

Source: NMDS, med-surg public hospitals only

### Age 75-84 Years

Injury related hospitalisation rates surpass those for cancer amongst females aged 75 years and over, with falls the major cause (Table 69 Table 71). However, overall the top five causes of hospitalisation remain the same in the 75-84 age range, and account for a similar proportion (36%) of total hospitalisations. Congestive heart failure (CHF) is the 6<sup>th</sup> leading cause of hospitalisation for CM females in this age group, accounting for 4% of total admissions. Diabetes no longer ranks in the leading causes of hospitalisation amongst females in this older age range.

**Table 69: Leading causes of hospitalisation for CM females aged 75-84 years, 2004**

Cause of Hospitalisation	Females 75-84 years		
	No.	Rate per 100,000	%
Injury (S00-T98)	328	4,530	10%
All cause cancer (C00-C97)	268	3,710	9%
IHD (I20-I25)	243	3,400	8%
CORD (J40-J44, J47)	143	2,000	5%
Arthropathies (M00-M25)	123	1,720	4%
CHF (J81, I50)	118	1,660	4%
Influenza and pneumonia (J10-J18)	97	1,360	3%
Cataracts (H25-H26)	93	1,300	3%
Cardiac arrhythmias (I48, I49, R00)	87	1,220	3%
Cerebrovascular disease (I60-I69)	86	1,200	3%
Syncope and collapse (R55)	84	1,180	3%
Chest pain (R07)	79	1,110	3%
Total leading 12 causes	1,749	24,390	56%
All other causes	1,389	19,620	44%
Total all causes	3,138	44,010	100%

Source: NMDS

For CM males aged 75-84, the top causes of hospitalisation remain cancer, IHD, injury and CORD. In this group, cerebrovascular related hospitalisations move to be the 5<sup>th</sup> ranked cause of hospitalisation (Table 70).

**Table 70: Leading causes of hospitalisation for CM males aged 75-84 years, 2004**

Cause of hospitalisation CM	Males 75-84 years		
	No.	Rate per 100,000	%
All cause cancer (C00-C97)	374	7,130	13%
IHD (I20-I25)	238	4,510	8%
Injury (S00-T98)	224	4,300	8%
CORD (J40-J44, J47)	161	3,040	5%
Cerebrovascular disease (I60-I69)	111	2,100	4%
Disorders of kidney/urinary system (N00-N39)	87	1,650	3%
Influenza and pneumonia (J10-J18)	84	1,590	3%
CHF (I50, J81)	84	1,590	3%
Arthropathies (M00-M25)	82	1,560	3%
Cardiac arrhythmias (I48-I49, R00)	79	1,490	3%
Cataracts (H25-H26)	61	1,150	2%
Diabetes (E10-E14)	60	1,140	2%
Leading 12 causes	1,645	31,250	55%
All other causes	1,319	24,890	45%
Total all causes	2,964	56,140	100%

Source: NMDS

**Age 85+ Years**

Injury-related hospitalisations accounted for 16% of total hospitalisations amongst CM females aged 85+ years during 2004. The equivalent of 90 in every 1000 females in CM in the 85+ age range were hospitalised for an injury related cause in 2004. Hospitalisations for Congestive heart failure and influenza and pneumonia are amongst the top five causes of hospitalisations for females aged 85 years and over (Table 71).

**Table 71: Leading causes of hospitalisation for CM females aged 85+ years, 2004**

Cause of hospitalisation	Females 85+ years		
	No.	Rate per 100,000	%
Injury (S00-T98)	229	9080	16%
All cause cancer (C00-C97)	98	3890	7%
IHD (I20-I25)	82	3240	6%
CHF (J81, I50)	77	3050	5%
Influenza and pneumonia (J10-J18)	56	2220	4%
Disorders of kidney/urinary system (N00-N39)	51	2020	4%
Syncope and collapse (R55)	48	1900	3%
CORD (J40-J44, J47)	45	1780	3%
Cerebrovascular disease (I60-I69)	44	1620	3%
Cardiac arrhythmias (I48, I49, R00)	40	1590	3%
Cataracts (H25-H26)	37	1470	3%
Arthropathies (M00-M25)	33	1310	2%
Total 12 leading causes	840	33170	60%
All other causes	566	22400	40%
Total all causes	1406	55570	100%

Source: NMDS

Cancer is the leading cause of hospitalisations amongst males aged 85+ years. Notably injury-related hospitalisation rates amongst males in this older age range exceed those for females and account for 9% of total med-surg admissions compared with 16% for females aged 85+.

**Table 72: Leading causes of hospitalisation for CM males aged 85+ years, 2004**

Cause of hospitalisation CM	Males 85+ years		
	No.	Rate per 100,000	%
All cause cancer (C00-C97)	122	10990	15%
Injury (S00-T98)	77	6930	9%
IHD (I20-I25)	61	5490	7%
CHF (I50, J81)	42	3780	5%
Influenza and pneumonia (J10-J18)	40	3600	5%
CORD (J40-J44, J47)	27	2430	3%
Disorders of kidney/urinary system (N00-N39)	21	1890	3%
Cerebrovascular disease (I60-I69)	19	1710	2%
Diabetes (E10-E14)	18	1620	2%
Cardiac arrhythmias (I48-I49, R00)	17	1530	2%
Cataracts (H25-H26)	14	1260	2%
Arthropathies (M00-M25)	13	1170	2%
Leading 12 causes	471	42400	56%
All other causes	369	33280	44%
Total all causes	840	75680	100%

Source: NMDS

### 4.3.5 Trends in hospitalisations

Trend data for all-cause and selected-cause hospitalisations in CM and neighbouring DHBs for males and females aged 65+ years are shown in the following series of figures. These are age-standardised and presented as rates per 100,000 population. There has been a 7% increase in total public hospitalisations for CMDHB residents over the past 3 years, involving both males and females. In general all DHBs show similar trends.

Overall, CMDHB has higher rates of med-surg hospitalisations for the older population than neighbouring ADHB and WDHB and nationally. Since 2000 the geographical differences have lessened for females. NDHB has consistently had the highest rate of med-surg hospitalisations for both genders. CMDHB has some of the highest hospitalisation rates for those aged 65+ for IHD, CORD and cancer.

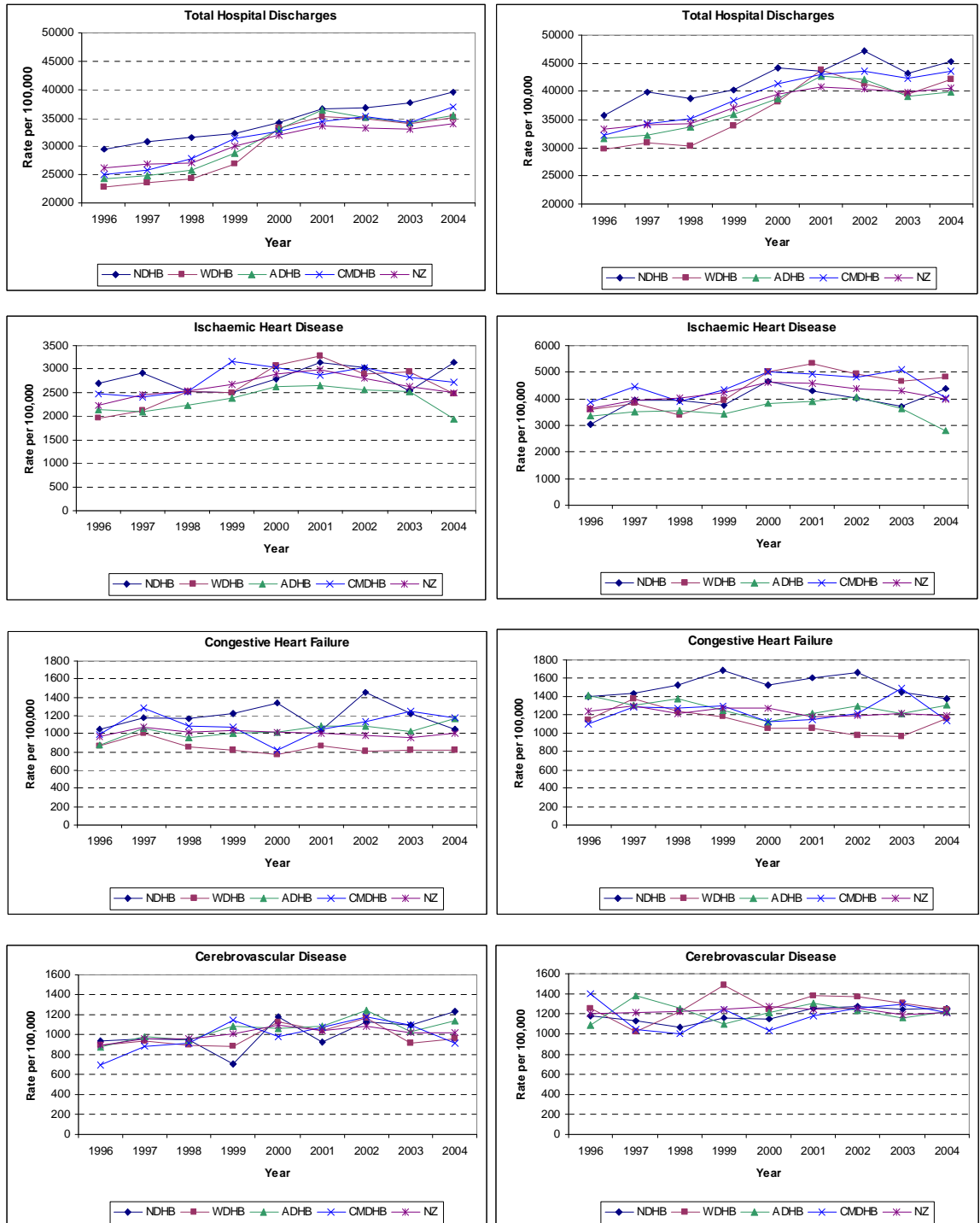
There has been a marked increase in hospitalisations for diabetes across the Northern region and nationally, with all Northern DHBs exceeding the national rate for males in 2004. This is in part due to improved hospital coding with increased emphasis on diabetes care and new coding rules introduced with ICD-10 in July 2000. So part will be a true increase, but it also reflects an unmasking of the prevalence of diabetes-related complications such as heart disease and renal disease.

The increase in CORD is attributed to the playing out of the end stages of the tobacco epidemic. Although the male rate remains higher than the female rate the gap has been closing reflecting the increased uptake of smoking by females in the past 30 years.

Figure 62: DHB trends in hospitalisation rates, female and male aged 65+, 1996-2004

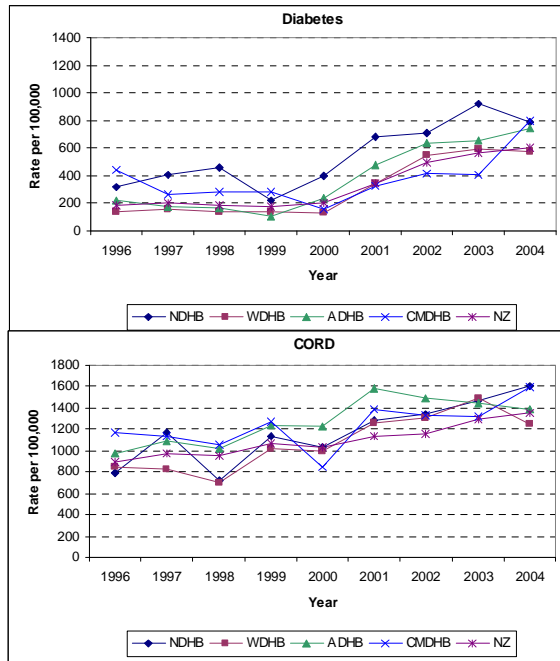
Females

Males

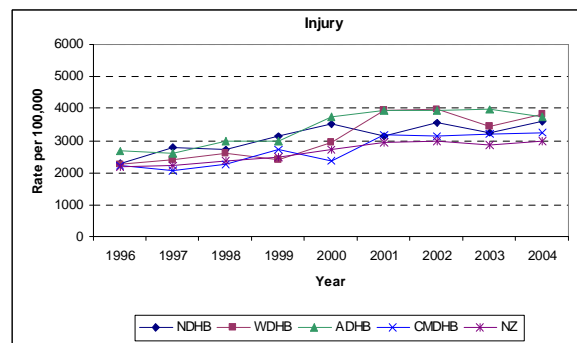
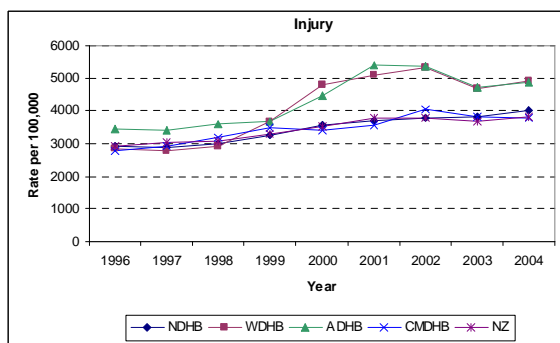
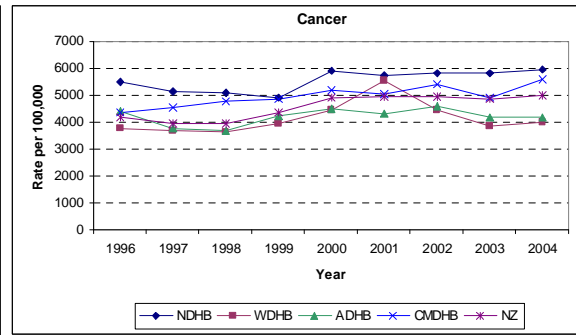
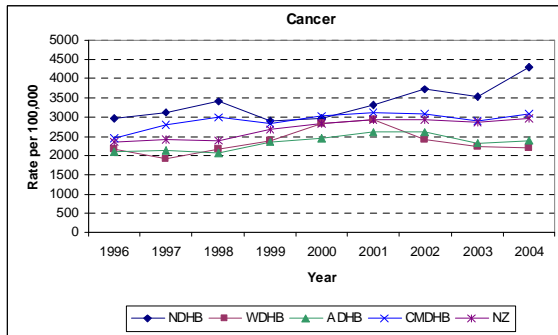
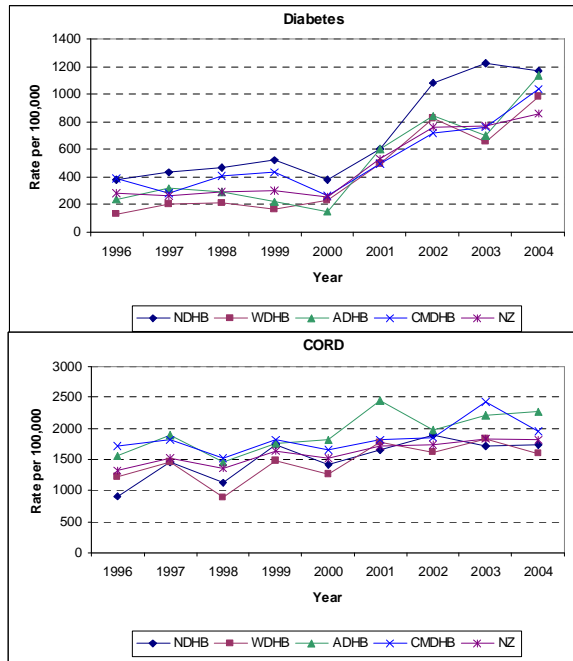


(Note changing scales on x-axis)

## Females



## Males



(Note changing scales on x-axis)

### 4.3.6 Potentially avoidable hospitalisations

The construct of 'avoidability' can be extended from fatal to non-fatal outcomes. Potentially avoidable hospitalisations (PAH) are compiled from those that could conceivably have been avoided through effective population-based or primary care. It is not necessary that all hospitalisations identified through this measure will be preventable, just that the majority might be. Injury is not normally categorised in this construct, although many injury-related hospitalisations are likely to be preventable.

Of the total number of hospitalisations for adults aged 65 years and over, between 36% - 41% could be considered potentially avoidable.

#### 4.3.6.1 Leading potentially avoidable hospitalisations by age and gender

##### Age 65-74 Years

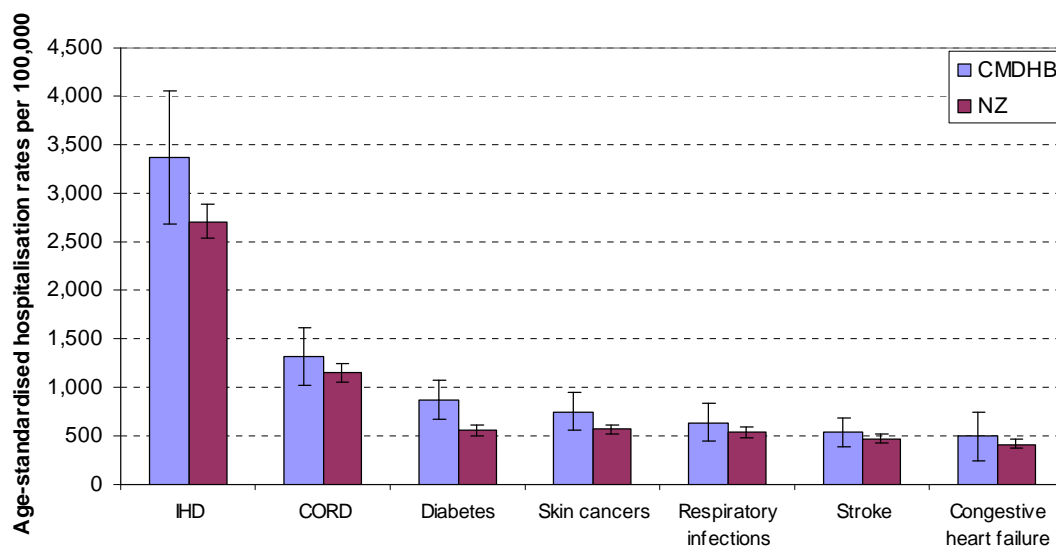
Older adults resident in CM aged 65-74 years had the same leading causes of PAH as their NZ comparators in 2004; however there are some variations in ranking (Table 73). The leading 6 causes for both males and females in this age range were IHD, CORD, diabetes, skin cancer, respiratory infections and stroke.

While hospitalisation rates for the leading causes of PAH for CM females aged 65-74 years all marginally exceeded those for NZ females, only hospitalisation rates for diabetes were significantly higher (statistically) than NZ as a whole (Table 73, Figure 63). There were no significant differences in PAH rates between CM and NZ males aged 65-74 years (Table 73, Figure 64). Counties Manukau female residents aged 65-74 had a 20% increased rate of hospitalisation for PAH conditions than their counterparts in the rest of NZ; while having a 13% excess for non-PAH. Counties Manukau males aged 65-74 had a 12% excess of PAH, and 7% non-PAH compared to the NZ male rates.

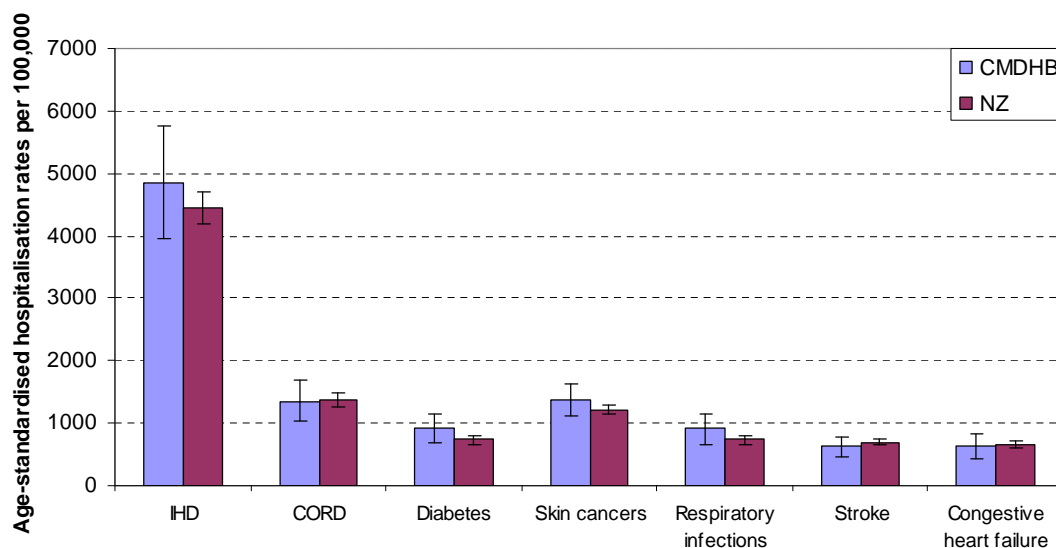
**Table 73: Potentially avoidable hospitalisations, CM and NZ aged 65-74, 2004**

PAH 65-74 year age group	No. of hospitalisations				Age-standardised rate per 100,000			
	Female		Male		Female		Male	
	CM	NZ	CM	NZ	CM	NZ	CM	NZ
IHD	383	3656	505	5552	3368	2706	4853	4449
CORD	148	1548	137	1716	1316	1146	1356	1381
Diabetes	99	754	97	921	864	557	922	737
Skin cancers	84	762	141	1507	747	565	1379	1213
Respiratory infections	72	731	98	917	638	540	922	737
Stroke	61	636	65	866	541	471	628	698
Congestive HF	54	560	65	824	494	415	628	663
Cellulitis	39	460	51	460	339	340	485	367
Breast cancer	28	371	NA	NA	249	274	NA	NA
Kidney/urinary infection	25	332	35	255	227	246	355	206
Colorectal cancer	24	418	40	480	220	310	385	385
Lung cancer	18	244	38	388	160	180	308	312
Other PAH	145	1261	142	1263	1287	934	1418	1010
PAH Total	1180	11733	1414	15149	10449	8684	13638	12158
Non-PAH	2063	21758	2120	23911	18203	16096	20582	19209
Total	3243	33491	3534	39060	28652	24780	34220	31367
% PAH	36%	35%	40%	39%				

**Figure 63: Leading causes of PAH for CM and NZ females aged 65-74 years, 2004**



**Figure 64: Leading causes of PAH for CM and NZ males aged 65-74 years, 2004**



### Age 75+

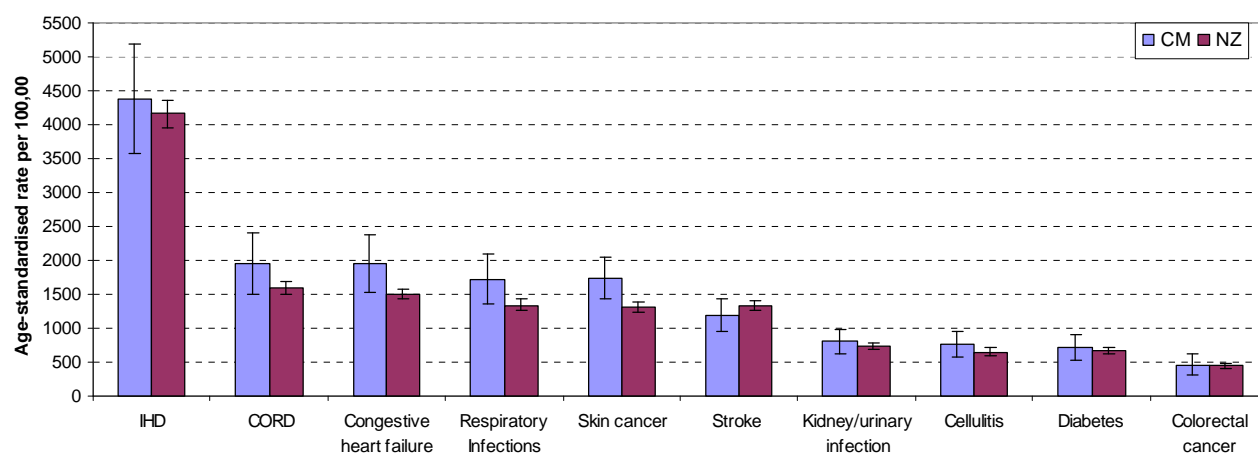
For adults aged 75 years and over the leading causes of PAH are IHD, CORD, congestive heart failure and skin cancer. There is some variation in ranking between genders with skin cancer, diabetes and cellulitis ranked higher relatively amongst males than females.

CM females have higher rates of PAH than NZ for all leading causes, except for stroke. However, only the skin cancer PAH rate for CM females is statistically significantly higher than for NZ as a whole (Table 74, Figure 65). Similarly CM males have significantly higher PAH rates for skin cancer in comparison with national rates. Colorectal cancer PAH rates in CM males aged 75+ are significantly lower than their NZ comparators (Table 74, Figure 66).

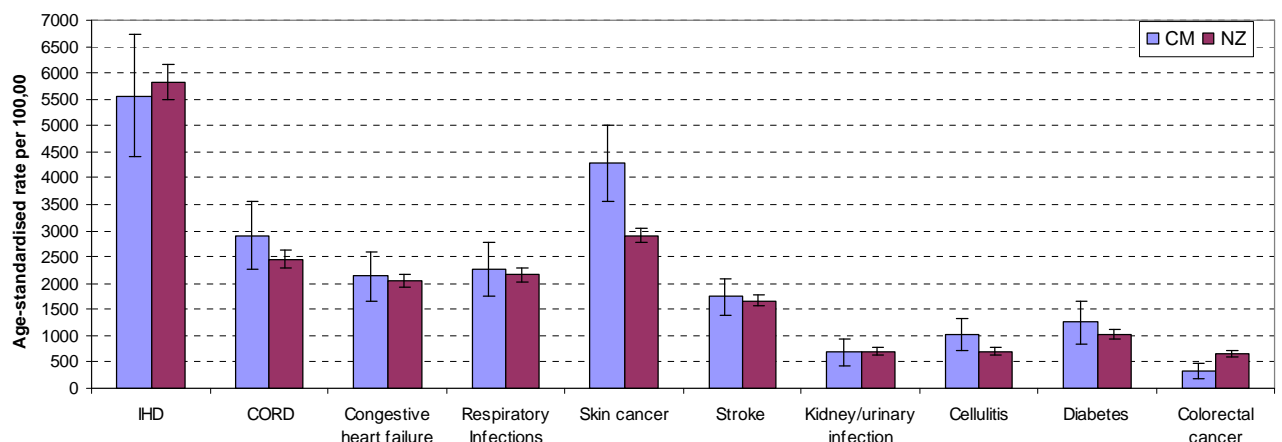
**Table 74: Potentially avoidable hospitalisations for CM and NZ adults aged 75+ by gender for 2004**

PAH 75+ year age group	No. of hospitalisations				Age-standardised rate per 100,000			
	Female		Male		Female		Male	
	CM	NZ	CM	NZ	CM	NZ	CM	NZ
IHD	426	5757	353	5145	4379	4155	5563	5827
CORD	188	2144	188	2205	1959	1592	2903	2458
Congestive heart failure	195	2158	126	1741	1950	1503	2131	2043
Respiratory Infections	170	1914	134	1825	1720	1345	2253	2164
Skin cancer	170	1840	303	2533	1744	1316	4289	2910
Stroke	117	1892	112	1459	1186	1334	1745	1674
Kidney/urinary infection	80	1054	41	596	799	739	687	708
Cellulitis	76	931	62	610	767	654	1015	707
Diabetes	68	915	78	931	716	669	1259	1036
Colorectal cancer	45	609	21	599	464	441	326	667
Nutrition	30	431	20	230	305	305	315	264
Lung cancer	12	171	28	328	131	129	422	353
Other PAH	164	2009	91	1163	1694	1449	2202	1329
PAH Total	1741	21825	1557	19365	17814	15631	25110	22140
Non-PAH	2787	37387	2239	28608	28616	26873	35782	32579
Total	4528	59212	3796	47973	46430	42504	60892	54719
% PAH	38%	37%	41%	40%				

**Figure 65: Leading causes of PAH for CM and NZ females aged 75+, 2004**



**Figure 66: Leading causes of PAH for CM and NZ males aged 75+, 2004**



#### 4.3.6.2 Leading potentially avoidable hospitalisations by ethnicity

##### Females 65-74

The leading causes of PAH amongst CM females aged 65-74 are similar between ethnic groups; however there is some variation in ranking (Table 75). Notably potentially avoidable hospitalisations for diabetes are significantly higher amongst Māori and Pacific peoples and stroke PAH are significantly higher in Pacific females than non-Māori, non-Pacific (Figure 67).

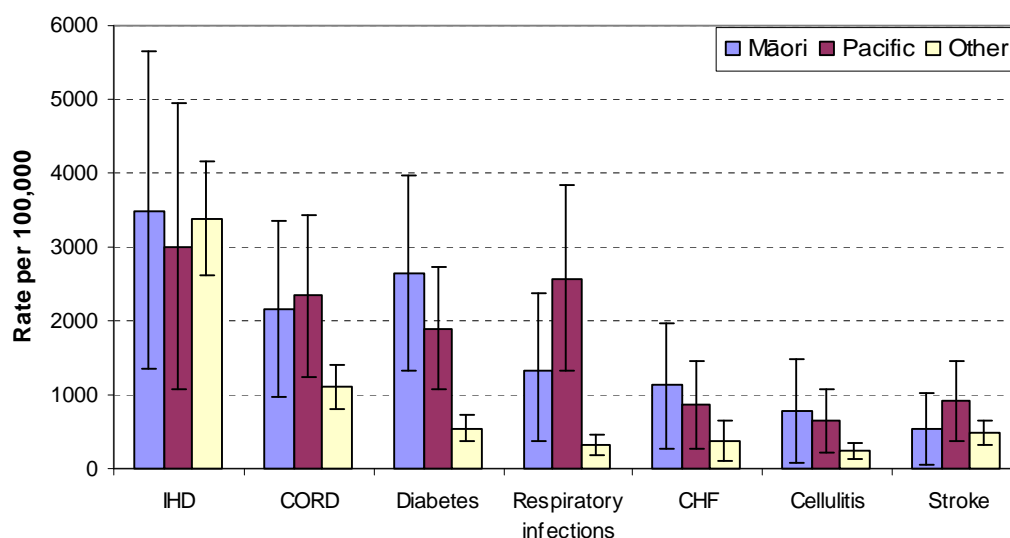
Both total hospitalisation and PAH rates are significantly lower for non-Māori, non-Pacific in comparison with Māori or Pacific females in this age range (Table 75, Figure 68). PAH accounted for 35% of all hospitalisations for non-Māori, non-Pacific, but 41% for Pacific and 43% for Māori.

**Table 75: Leading causes of PAH in CM females aged 65-74 by ethnicity, 2004**

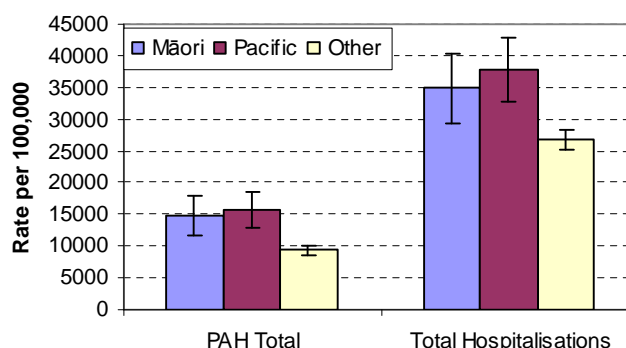
Females aged 65-74 years	No.			Rate per 100,00		
	Māori	Pacific	Other	Māori	Pacific	Other
IHD	33	38	312	3473	2997	3384
CORD	18	28	102	2153	2346	1108
Diabetes	24	24	51	2660	1898	551
Respiratory infections	11	32	29	1333	2581	316
Congestive heart failure	9	11	34	1129	869	384
Cellulitis	7	9	23	785	646	251
Stroke	5	12	44	545	917	483
Leading causes PAH	107	154	595	12078	12254	6477
PAH Total	129	198	853	14814	15688	9298
non-PAH	171	285	1607	20083	22149	17447
Total hospitalisations	300	483	2460	34897	37838	26745
% PAH of total hospitalisation	43%	41%	35%	42%	41%	35%

Source: NMDS

**Figure 67: Leading causes of PAH for females aged 65-74 years by ethnic group, 2004**



**Figure 68: PAH and total hospitalisation rates by ethnicity, females aged 65-74, 2004**



**Males 65-74 Years**

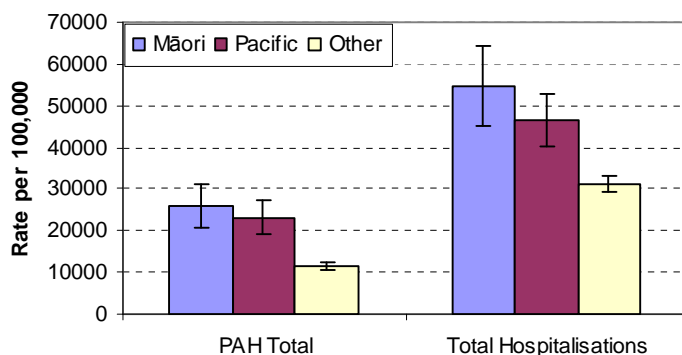
Around half of all hospitalisations for Maori and Pacific males aged 65-74 years in CM might be considered potentially avoidable. Rates of total and potentially avoidable medical-surgical hospitalisations for non-Maori, non-Pacific males are significantly lower than those for Maori and Pacific males (Table 76, Figure 69 ).

IHD was the second leading cause of hospitalisations in this age group and is the leading cause of potentially avoidable hospitalisation for Maori, Pacific and non-Maori, non-Pacific males in this age range. The second leading contributor to PAH for non-Maori, non-Pacific males is skin cancers accounting for 1609 potentially avoidable hospitalisations per 100,000 population. Maori and Pacific males had significantly higher PAH for CORD, respiratory infections and diabetes than non-Maori, non-Pacific males. In addition, Maori males lung cancer PAH is significantly higher than non-Maori, non-Pacific males aged 65-74 years (Figure 70).

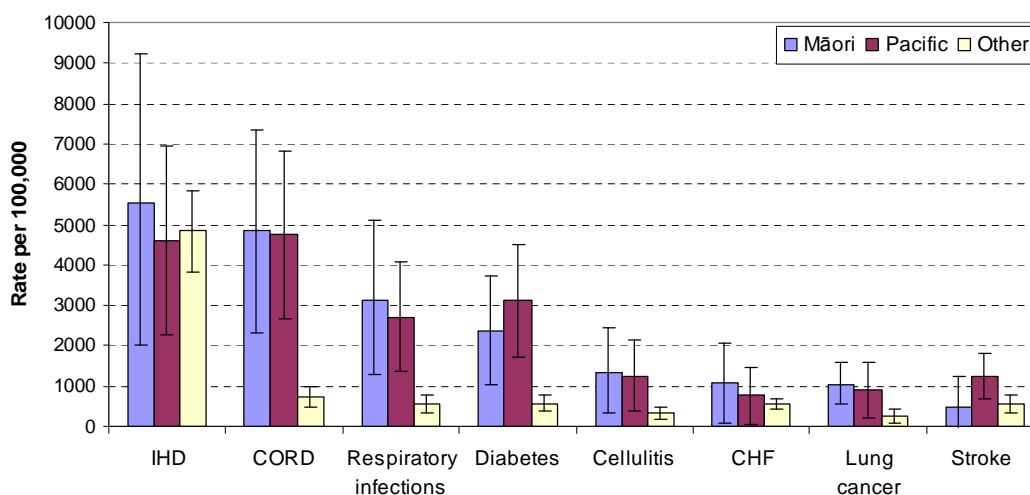
**Table 76: Leading causes of PAH in CM males aged 65-74 by ethnicity, 2004**

Males 65-74	No.			Rate per 100,00		
	Māori	Pacific	Other	Māori	Pacific	Other
IHD	34	49	422	5516	4590	4833
CORD	30	45	64	4831	4751	735
Respiratory infections	19	29	50	3138	2692	576
Diabetes	15	32	50	2378	3117	564
Lung cancer	6	9	26	1027	906	266
Cellulitis	9	13	29	1352	1263	330
Stroke	3	13	49	476	1226	565
Congestive heart failure	8	9	48	1068	758	555
Leading causes PAH	124	199	738	19784	19302	8424
PAH Total	163	237	1014	25816	23233	11652
non-PAH	174	244	1702	28940	23349	19661
Total Hospitalisations	337	481	2716	54756	46582	31314
% PAH of total hospitalisation	48%	49%	37%	47%	50%	37%

**Figure 69: PAH and total hospitalisation rates by ethnicity for males 65-74, 2004**



**Figure 70: Leading causes of PAH for males aged 65-74 years by ethnicity, 2004**



Data are not presented for the over 75+ age group as the numbers were small and difficult to interpret, and PAH is normally restricted to 0-74 years of age.

## 4.4 Specific chronic and disabling medical conditions

### 4.4.1 Prevalence of chronic conditions

Disease prevalence measures the total number of people in a specified population with a disease at a given point or period in time i.e. not just those admitted to hospital [32]. The prevalence of selected chronic diseases in the older population is shown below in Table 77. The national point prevalence data is derived from the New Zealand Health Survey 2002/2003 and has been applied directly to the CMDHB older population structure to estimate the numbers in CM who are likely to have these conditions at present. There are a number of important caveats that must be considered when interpreting these numbers however. The national prevalence is given by age only. Given, in comparison to the NZ average, CM has higher proportions of Māori and Pacific and lower socio-economic groups in which for example diabetes is 2-3 times more likely it is probable this simple method of projecting from the NZ point prevalence level will underestimate the numbers affected by these diabetes, respiratory disease, some cancers, heart disease and stroke.

Of note, the prevalence of each of condition increases with age. By age 75, an estimated 48-56% of the population will be affected by arthritis and between 37-44% of the population will have experienced some form of heart disease.

**Table 77: Prevalence of selected chronic disease in the older population – NZ percentages applied to CMDHB population for 2001 and projected to 2006 and 2011.**

Chronic Disease	New Zealand			CMDHB								
	% Total Population 2001			Estimated No. 2001			Estimated No. 2006			Estimated No. 2011		
	55-64	65-74	75+	55-64	65-74	75+	55-64	65-74	75+	55-64	65-74	75+
Heart disease	13-19	26-33	37-44	5190	5770	5760	6560	7040	7000	7700	8830	8280
Stroke	2-4	4-8	9-14	970	1170	1570	1230	1430	1900	1440	1800	2250
Chronic respiratory disease	3-6	5-10	6-11	1460	1470	1210	1850	1790	1470	2170	2250	1740
Arthritis	26-32	42-50	48-56	9400	9000	7400	11890	10970	8990	13950	13770	10630
Osteoporosis	3-5	6-10	9-14	1300	1560	1640	1640	1910	1990	1920	2400	2350
Cancer	6-9	11-16	14-21	2430	2640	2490	3070	3220	3030	3610	4040	3580
Diabetes	7-11	10-16	7-13	2920	2540	1423	3690	3100	1730	4330	3900	2050

\* Percentages show upper and lower confidence levels. Numbers are calculated from mid point of the CI and rounded to the nearest 10. 2006 and 2011 projections are based on Stats NZ Projections medium growth assumptions. source: NZ Health Survey 2002/2003

### 4.4.2 Incidence of chronic disease resulting in hospitalisation

The incidence of disease refers to the number of new disease events that occur in an at risk population in a specified period of time. For this assessment, cumulative incidence has been described, whereby the numerator is all new disease events (public hospital discharges, first admission for disease only) and the denominator includes all CM residents who were free of disease at the start of the period of observation (CM population used as proxy).

This section presents annual incidence rate data averaged for the period 2000-2004 for CM adults aged 65-74 and 75+ compared with national data. Data is given for prioritised ethnic groups (Māori, Pacific, Other). The following selected chronic diseases are described:

- Ischaemic heart disease (IHD)
- Congestive heart failure (CHF)
- Stroke (excluding Subarachnoid haemorrhage)
- Chronic obstructive respiratory disease (CORD)

- Diabetes mellitus
- Cancer (all cause)
  - Colorectal cancer
  - Lung cancer
  - Breast cancer

Amongst adults aged 65-74 years, CM had higher annual incidence rates for IHD, CHF, stroke, CORD, diabetes mellitus, all-cause cancer, and lung cancer in comparison with NZ as a whole. CM incidence rates of breast cancer were also marginally greater than national rates, however comparatively lower for colorectal cancer (Table 78, Figure 71).

CM Māori in this age group had the highest incidence rates for IHD and CORD relative to CM Pacific and Others. Māori and Pacific had similar incidence rates for CHF, all-cause cancer and lung cancer in this age group. Pacific people had the highest incidence rates relative to Māori and non-Māori, non-Pacific peoples during this period, for stroke and diabetes mellitus. Non-Māori, non-Pacific peoples had the highest incidence rates for all-cause cancer, and similarly high rates of colorectal (c.f. Māori) and breast cancer (c.f. Pacific).

**Table 78: Incidence of selected diseases, 65-74 year olds in CM and NZ by ethnicity, 5 years 2000-2004 combined**

Disease (ICD-10)	65-74 Age Group Incidence Rate per 100,000/year							
	Maori		Pacific		Other		Total	
	CM	NZ	CM	NZ	CM	NZ	CM	NZ
IHD (I20-I25)	2575	1852	2498	1892	2422	1833	2439	1835
CHF (I50, J81)	1200	1027	1218	967	335	293	476	352
Stroke (I61, I63-I66)	1007	653	1644	1130	676	526	791	548
CORD (J40-J44, J47)	1781	1244	1557	1179	474	432	663	498
Diabetes mellitus (E10-E14)	1142	804	1331	1290	312	239	464	298
All cancer (C00-C97)	2323	1940	2385	1593	2523	2072	2497	2053
Colorectal cancer (C18-C21)	290	158	138	106	266	270	255	260
Lung cancer (C33-C34)	348	355	339	192	157	144	187	157
Breast cancer (C50)	97	160	138	102	140	110	137	112

In the older age range, CM population is increasingly comprised of non-Māori, non-Pacific. Thus not unexpectedly the incidence rates for all ethnicities combined more closely approximate national levels compared to the younger age band.

Similar ethnic disease incidence disparities persist to the CM 75+ age group, however as the numbers are small there is likely to be increasing random variation. Notably the incidence rate for lung cancer in CM Māori, is two-fold greater than that for NZ Māori or CM Pacific and Other peoples.

**Table 79: Incidence of selected diseases, 75+ year olds in CM and NZ by ethnicity, 5 years 2000-2004 combined**

Disease (ICD-10)	75+ Age Group Incidence Rate per 100,00/year							
	Maori		Pacific		Other		Total	
	CM	NZ	CM	NZ	CM	NZ	CM	NZ
IHD (I20-I25)	2061	1694	2029	2064	2378	2316	2348	2298
CHF (I50, J81)	1735	1687	1453	1561	1018	1012	1063	1036
Stroke (I61, I63-I66)	1681	1221	1880	2010	1240	1321	1291	1327
CORD (J40-J44, J47)	1356	1335	1859	1858	677	669	768	700
Diabetes mellitus (E10-E14)	1085	832	641	1226	268	340	312	364
All cancer (C00-C97)	2332	1954	1944	2094	2803	2820	2737	2789
Colorectal cancer (C18-C21)	217	154	171	152	340	392	326	383
Lung cancer (C33-C34)	597	308	278	289	141	140	160	146
Breast cancer (C50)	163	117	85	99	123	124	122	123

**Figure 71: Incidence rate for selected diseases for age group 65-74 years, 2000-2004**

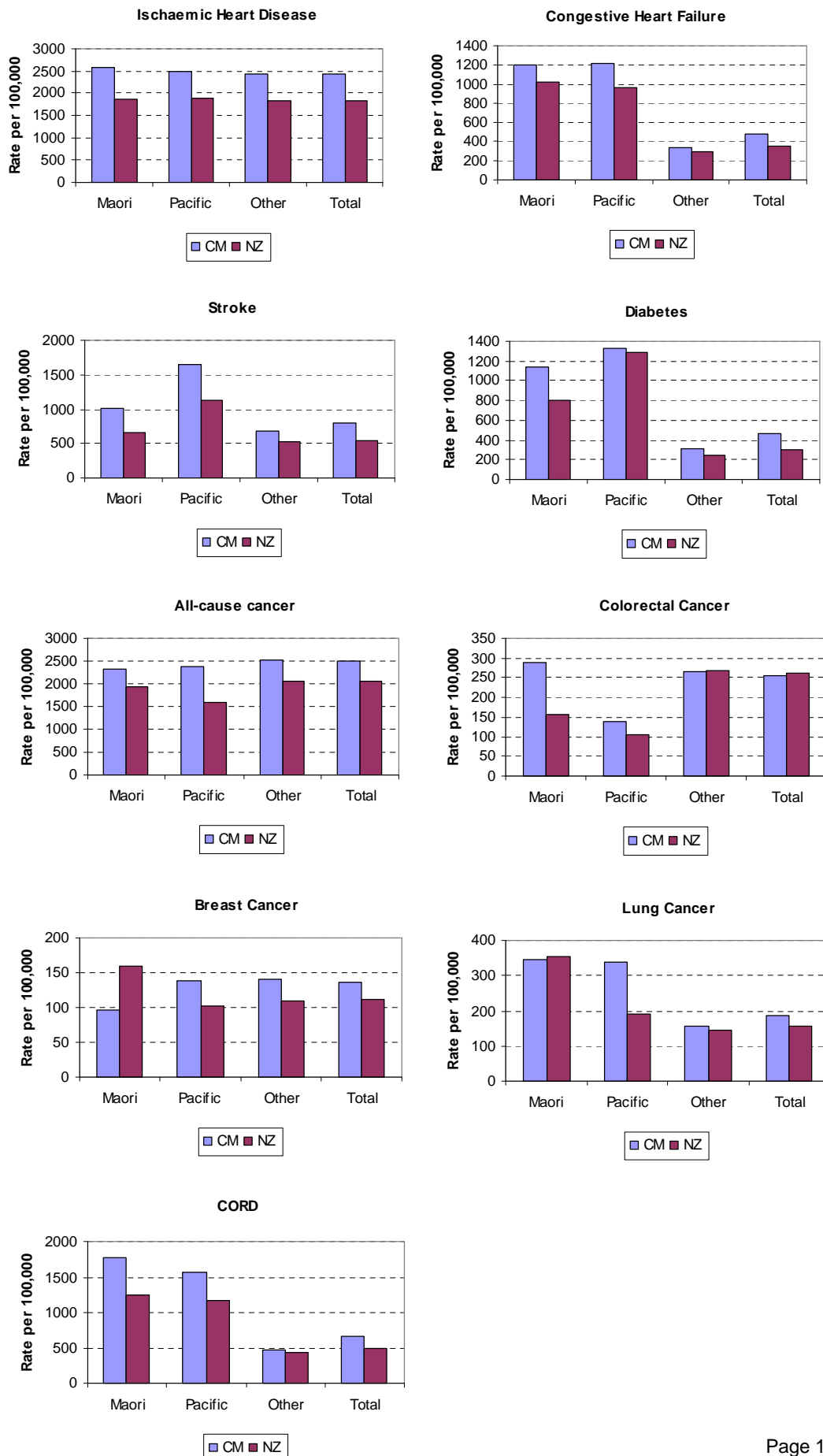


Figure 72: Incidence rate for selected diseases for age group 75+ years, 2000-2004

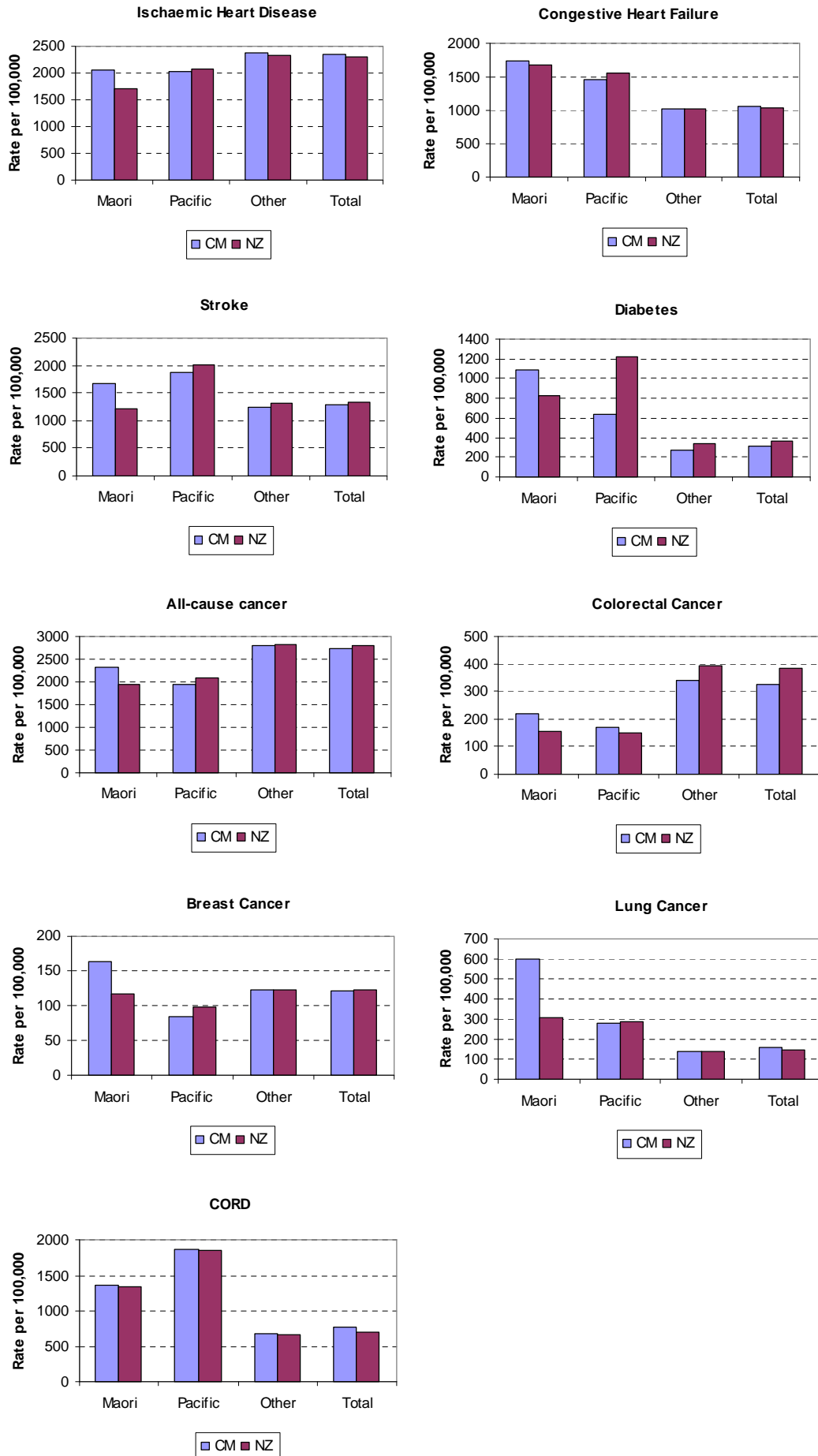
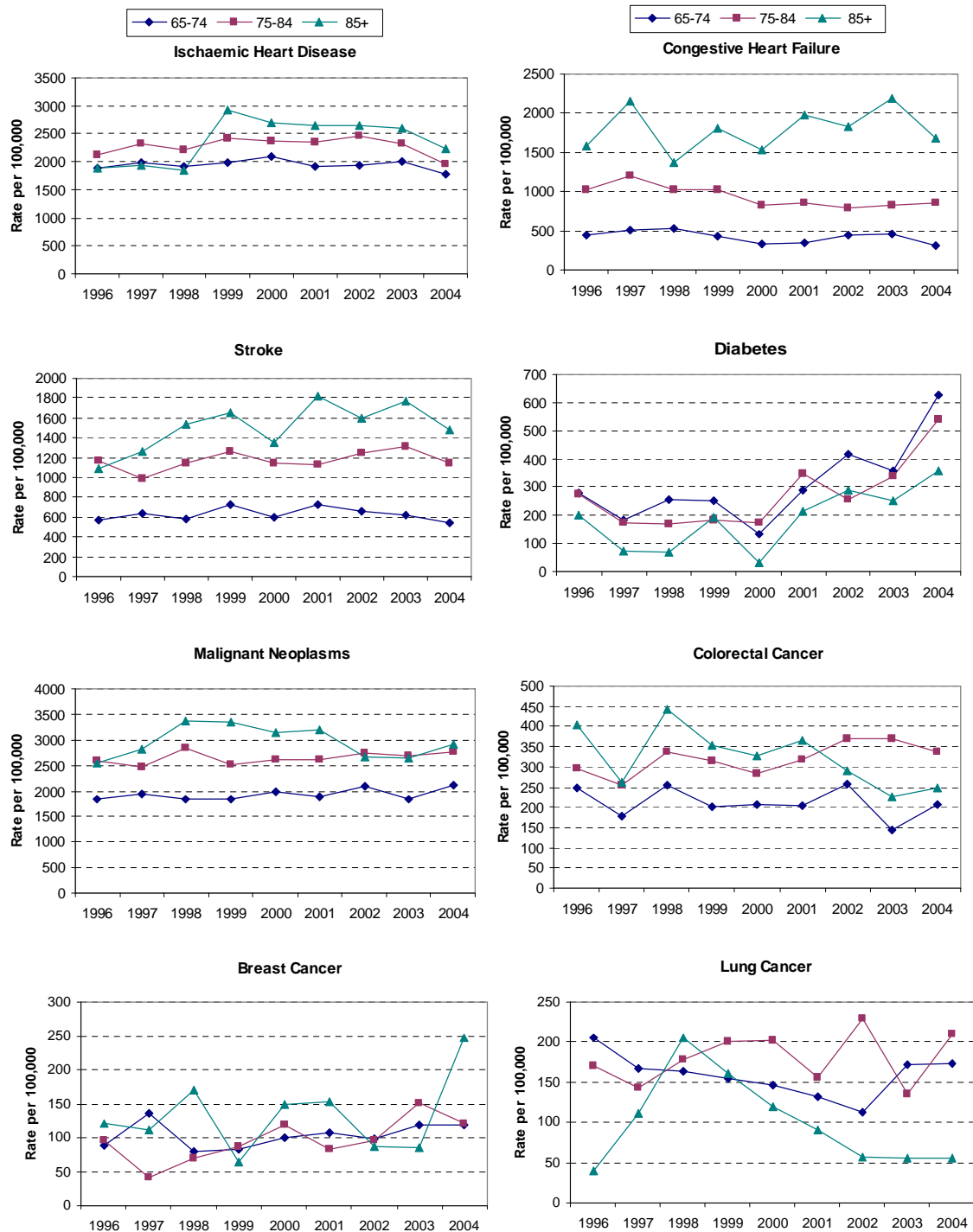
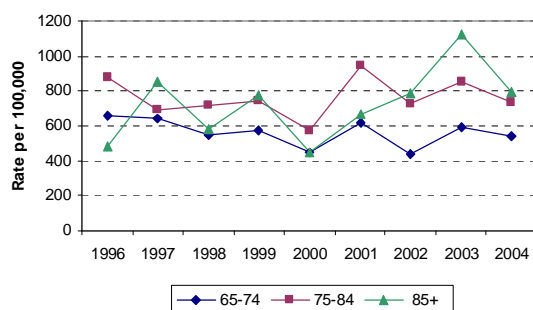


Figure 73 shows selected disease incidence using first hospitalisation rates in CM by age group over time. The incidence of IHD, stroke (in younger age groups) and most cancers (aka neoplasms) have remained relatively stable over this period. There is some suggestion that the incidence of CHF may be declining in the 65-74, 75-84 year old age bands. Aligned with the trends in hospitalisation rates for diabetes amongst all adult ages groups[33], there is clear increasing trend for diabetes hospitalisation amongst the older CM population, some due to extra coding of existing conditions but probably some genuine increase too.

**Figure 73: Trends in incidence of selected disease for CM older population, 1996-2004**



## CORD



### 4.4.3 Selected conditions

The following selected conditions have a high burden of disease for the elderly population.

#### 4.4.3.1 Cerebrovascular disease

Stroke is defined by the World Health Organisation as a clinical syndrome, of presumed vascular origin, characterised by rapidly developing signs of focal or global disturbance of cerebral functions lasting more than 24 hours or leading to death. It encompasses both cerebral infarction due to ischaemia and haemorrhagic causes (intracerebral and subarachnoid). Stroke is the second leading cause of death in New Zealand [34] and a leading contributor to the burden of disease accounting for 7% of all cases of severe disability[35].

Stroke incidence increases with age, peaking in the 75+ age group [36]. The Auckland Region Coronary or Stroke study (ARCOS) reported incidence rates for females of 712 per 100,000 for the age range 65-74, to 3,287 at 85+ and for males from 1,132 to 1,665 per 100,000 respectively.

Cerebrovascular disease accounts for between 2-4% of all hospitalisations in CM each year among those aged 65 years and over (see pages 89 on for details by age groups, gender and ethnicity). Intracerebral ischaemic and haemorrhagic events leading to stroke contributed to a mortality rate of 68 per 100,000 for females aged 65-74, 411 per 100,000 for females aged 75-84 and 1672 per 100,000 for females aged 85 years and over. The corresponding age-specific rates are higher for CM males aged 65-74 (106 per 100,000), and 75-84 years (513 per 100,000), but lower for those 85+ (1477 per 100,000). The mortality rates for subarachnoid haemorrhage are difficult to interpret due to small absolute numbers. Overall cerebrovascular mortality rates were similar for 2000-2001 in CM to the NZ average for all age groups except CM males aged 75-84 years where which was marginally higher.

The rate of mortality for cerebrovascular disease increases with age for both males and females (Table 80 & Table 81). Stroke accounts for the majority of deaths for cerebrovascular disease both in CM and nationally.

A considerable proportion of stroke mortality is considered to be potentially avoidable. Important potentially modifiable proximal risk factors for stroke include hypertension, smoking, heavy alcohol consumption, atrial fibrillation and sub-optimal dietary patterns and physical inactivity associated with obesity and diabetes. It is the cumulation of these factors over the life course that must be addressed through population-based strategies that consider the wider socio-cultural and socio-economic, and environmental structural determinants of this risk.

**Table 80: Cerebrovascular mortality rate for females in CM and NZ, 2000-2001**

Cerebrovascular diseases I60-I69	Female 65-74				Female 75-84				Female 85+			
	CM		NZ		CM		NZ		CM		NZ	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
I60 Subarachnoid haemorrhage	5	24	47	18	5	39	61	33	20	434	20	29
I61, I63-I66 Stroke	14	68	227	87	53	411	895	481	77	1672	1223	1789
I62 Other non traumatic intracranial haemorrhage	1	5	10	4	4	31	20	11	16	348	16	23
I67 Other cerebrovascular diseases	1	5	8	3	7	54	51	27	11	239	145	212
I69 Sequelae of cerebrovascular disease	3	15	25	10	8	62	133	72	18	391	221	323
I60-I69 Total	24	117	317	122	77	598	1160	624	111	2411	1625	2377

Source: NMDS, NZHIS. # Numbers for 2000-2001 combined. \* Rates annualised for period 2000-2001  
 Stroke subgroup: Intracerebral haemorrhage (I61), Cerebral Infarction (I63), Stroke not specified (I64),  
 Occlusion/stenosis Cerebral Artery not leading to infarction (I66).

**Table 81: Cerebrovascular mortality rate for males in CM and NZ, 2000-2001**

Cerebrovascular diseases I60-I69	Male 65-74				Male 75-84				Male 85+			
	CM		NZ		CM		NZ		CM		NZ	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
I60 Subarachnoid haemorrhage	4	21	31	13	0	0	17	13	0	0	4	14
I61, I63-I66 Stroke	20	106	283	117	46	513	592	463	30	1477	457	1570
I62 Other non traumatic intracranial haemorrhage	1	5	8	3	4	45	18	14	1	49	9	31
I67 Other cerebrovascular diseases	1	5	11	5	3	33	33	26	2	98	44	151
I69 Sequelae of cerebrovascular disease	3	16	56	23	10	112	135	105	4	197	118	405
I60-I69 Total	29	154	389	161	63	703	795	621	37	1822	632	2171

Source: NMDS, NZHIS. # Numbers for 2000-2001 combined. # Rates annualised for period 2000-2001  
 Stroke subgroup: Intracerebral haemorrhage (I61), Cerebral Infarction (I63), Stroke not specified (I64),  
 Occlusion/stenosis Cerebral Artery not leading to infarction (I66)

Stroke mortality in New Zealand as in other OECD countries, has declined steadily over the previous three decades, with an increasing absolute number of stroke survivors[34]. There is however persisting evidence of ethnic disparities in both stroke incidence and outcomes in New Zealand. Māori and Pacific Island peoples experience higher stroke incidence and poorer stroke outcomes compared with their non-Māori, non-Pacific counterparts[34, 36, 37]. This is likely to reflect disparities in underlying socio-economic and socio-cultural determinants of health which in turn influence lifestyle factors such as nutrition, physical activity and smoking and also access to quality and timely health promotion and services.

#### 4.4.3.2 Respiratory disease

The main causes of respiratory disease in the over 65+ population are CORD (chronic obstructive respiratory disease), pneumonia and influenza. The burden of disease associated with CORD closely reflects the smoking experience of older cohorts. In CM male rates of respiratory disease mortality are more than twice as high as females in the 85+ age group, mainly attributed to the differential exposure to tobacco.

In the over 85 year age group, influenza and infection are among the leading causes of hospitalisation. Influenza is a significant public health issue in New Zealand, contributing to considerable burden in terms of mortality and morbidity, its economic impact, and its potential to overwhelm both primary care and hospital services during winter epidemics[38].

Overseas evidence indicates that influenza vaccination is effective in reducing morbidity and mortality from influenza, and that targeted influenza vaccination programmes are cost-effective[39]. A free influenza vaccination programme for those aged 65 years and over was introduced in New Zealand in 1997. A target of 75% coverage of eligible groups set by the NZ MOH has not been realised by Northern region DHBs for the over 65 years old populations [38] Northern District Health Board Support Agency (NDSA) reports based on HealthPAC vaccination data indicate that 56% of the population aged 65 years and over in CM were vaccinated during the period January to December 2004. The number of vaccinations and proportion vaccinated in CM and neighbouring DHBs by age and ethnicity are given in Table 82 & Table 83 below. The rate of influenza vaccination uptake appears to be greater for those aged 75 years and over. The coverage is similar across all meta Auckland DHBs (Waitemata, Auckland and Counties Manukau) by age (Table 82)[40].

**Table 82: Influenza vaccination by DHB, ages 65 years and over, 2004**

DHB	No.			Percentage coverage		
	65-74	75+	Total 65+	65-74	75+	Total 65+
WDHB	13,262	15,814	29,076	48%	66%	56%
ADHB	10,614	12,786	23,400	52%	65%	58%
CMDHB	11,040	10,316	21,356	50%	64%	56%
Metro Auckland DHBs	34,916	38,916	73,832	50%	65%	57%

Source: HealthPac (via NDSA)[40]

Vaccination coverage rates were greatest for non-Māori, non-Pacific for all the metro Auckland DHBs, followed by Pacific then Māori.

**Table 83: Influenza vaccination by DHB and ethnicity, ages 65 years and over 2004**

DHB	Number of vaccinations				Percentage coverage			
	Maori	Others	Pacific	Total	Maori	Others	Pacific	Total
WDHB	359	28,267	450	29,076	30%	57%	36%	56%
ADHB	403	21,572	1,425	23,400	31%	59%	55%	58%
CMDHB	802	18,846	1,708	21,356	42%	58%	49%	56%
Total	1,564	68,685	3,583	73,832	36%	58%	49%	57%

Source: HealthPac (via NDSA)[40]

#### 4.4.3.3 Cancer

Reducing the incidence and impact of cancer is one of the 13 priority population health objectives in the New Zealand Health Strategy [41]. There is considerable scope to reduce the cancer burden in CM, particularly the disproportionate burden of lung cancer for Māori and Pacific peoples, and comparatively high rates of colorectal and skin cancer mortality among non-Māori, non-Pacific peoples.

Cancer mortality and morbidity rates have been described in the sections above. Differential cancer risk, incidence and outcomes are evident by ethnicity at a national level. There is evidence of a widening of the gap in cancer mortality rates between Māori and non-Māori nationally [31, 42, 43]. A recent report investigating access to cancer services for Māori indicates that disparities between Māori and non-Māori in timely access to definitive diagnostic procedures, staging procedures, and optimal treatment or management of cancer are likely to contribute to differential cancer-specific survival disparity between Māori and non-Māori for some cancers [44]. There is work underway in CM to improve the access, process and outcomes of CMDHB cancer services.

Primary prevention strategies that prevent initiation or aid cessation of smoking, limiting exposure to harmful ultraviolet sunlight, optimising fruit and vegetable intake and promotion physical activity are advocated across the life-course. Secondary prevention through quality, acceptable, accessible screening programs for breast and cervical cancer must be ensured.

Achieving equitable access to quality cancer and palliative services, and equitable outcomes is important to addressing disparities in cancer mortality and morbidity.

#### 4.4.3.4 Dementia

Dementia is “a clinical syndrome characterised by acquired losses of cognitive and emotional abilities severe enough to interfere with daily functioning and quality of life” pg1 [45]. The most common deficits manifesting in dementia are impairments in memory, concentration, judgement, and eventually, motor function[46]. It is a major cause of profound disability in the older population [47], with the prevalence increasing markedly with increasing age. There is considerable variation in worldwide estimates of prevalence and incidence of dementia in part due to the heterogeneity of criteria used to classify the syndrome. There has only been one published study that has examined the prevalence of dementia in New Zealand [48]. This study randomly sampled 559 subjects aged 65 years and over living in both community and institutions. It was estimated that 7.7% of those aged 65 years and over suffered from dementia, with the prevalence rate increasing exponentially with age so that in those aged 85 years and over the prevalence is estimated to be 32% (see Table 77 & Figure 74) [48]. These estimates parallel those reported for populations aged 65+ with moderate/severe dementia in Australia and Canada (8.7%)[46].

The prevalence of dementia does not differ by gender. There is, however, a paucity of information on the prevalence of dementia by ethnicity or cause for New Zealand populations. There are more than 55 different recognised aetiologies that result in dementia, with Alzheimer’s disease and vascular dementia making up 50-70% and 10-20% of cases respectively.

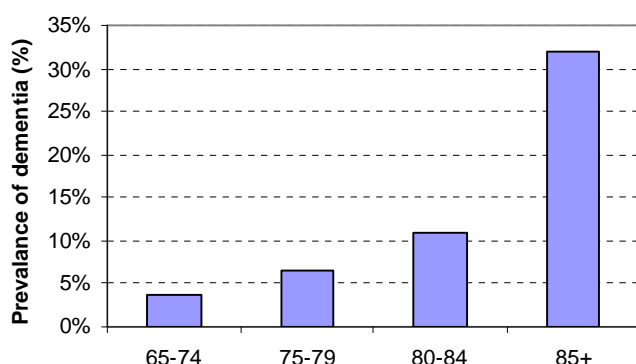
Dementia is a major determining factor in precipitating entry to residential care. Those with dementia are significantly more likely to be in residential care and people with dementia in the community are more likely to be heavier users of home based services and respite care. Thus with the demographic transition of an ageing population is useful to have some idea of the projected burden of dementia. A simple model based on population growth shows the numbers of CM population aged 65+ with dementia is likely to increase from 2600 in 2001 to an estimated 2026 in 2026 (Table 84).

**Table 84: NZ prevalence of dementia with estimates for CMDHB for 2001-2026**

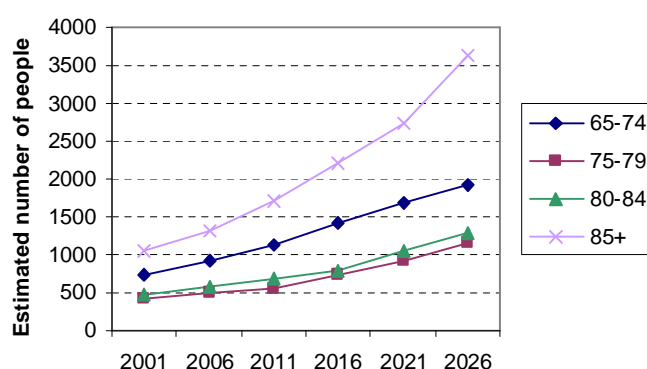
Age Group	Prevalence NZ Popln (%)	Estimated No. CM	Projected No. in CM				
			2001	2006	2011	2016	2021
65-74	3.8%	740	910	1,140	1,430	1,680	1,920
75-79	6.4%	430	510	560	740	910	1,170
80-84	11.0%	470	580	690	790	1,050	1,300
85+	32.0%#	1,050	1,320	1,720	2,220	2,740	3,630
All aged 65+	7.7%	2,600	3,170	3,880	4,860	5,880	7,090

Source: Campbell, A J. Dementia in old age and the need for services. Age & Ageing. 12(1):11-6, 1983 [5, 48]. Numbers rounded to nearest 10. #Prevalence for 85+ estimated to be average of NZ prevalence for 85-89 years (23.6%) and for 90-94 years (40.4%).

**Figure 74: Prevalence of dementia in NZ older population in CMDHB, 2001-2026**



**Figure 75: Estimated dementia numbers, 2001-2026**



#### **4.4.3.5 Vision conditions**

Visual impairment in the older population can reduce psychosocial and physical functioning and lessen both independence and quality of life. Approximately 4% of NZ older adults aged 65-74 and 11% of those 75 years and over reported that they were experiencing long-term visual impairment not corrected by corrective lens in the 2001 NZ Disability survey. Based on these NZ proportions, it is estimated that this would equate to 770 CM adults aged 65-74 and over 1,600 adults aged 75 and over.

Common causes of impaired vision in older adults include cataracts, glaucoma, macular degeneration and diabetic retinopathy[49]. Age-related macular degeneration (AMD) is one of the leading causes of visual loss in people over 65 years of age. It is characterised by degeneration of the area of the retina responsible for central vision. Important risk factors for AMD include hypertension, tobacco smoking, a family history and advancing age.

Cataracts (non-congenital) are also associated with advancing age and are the most common cause of blindness worldwide. A cataract is the partial or complete clouding or opacity of the lens that impedes light from reaching the retina and so reduces visual acuity. It is estimated that cataracts affect more than 20 per cent of the population over the age of 65 years, more than 35 per cent over the age of 75 years and more than 60 per cent over the age of 85 years. Cataract formation is associated with smoking, diabetes, ultraviolet light, medications, such as cortisone, and following an eye injury. Exposure to ultraviolet light may also contribute to the progression of cataract formation.

Cataract surgery is an effective method of re-establishing unimpeded light transmission to the retina. An average of 10.7 cataract extractions per 1000 65+ were undertaken each year in CMDHB during 2002-2004. This is marginally less than the NZ average of 13.1 per 1000 for the same period. Rates have increased in 2005/06 with additional central funding being made available.

Diabetic retinopathy is progressive damage to the eye's retina caused by long-term diabetes. With the obesity epidemic and associated projected increase in diabetes complications of diabetes will become more prevalent.

Glaucoma involves increased intraocular pressure, which damages the optic nerve and causes partial vision loss and may progress to blindness. The most prevalent form of glaucoma is primary open-angle glaucoma. Common factors associated with primary open-angle glaucoma include a family history of glaucoma, increasing age, a high degree of myopia, hypertension and diabetes.

Medications to lower intraocular pressure are typically the first line of treatment for primary open-angle glaucoma. Surgery is indicated when medications are not able to adequately control the intraocular pressure.

#### **4.4.3.6 Oral health**

Oral health is an important and often neglected element of healthy ageing [50]. Poor oral health in the older population is manifest through:

- changing dentition status
- high prevalence of caries with unmet need for dental care
- periodontal pocketing/loss of attachment
- poor oral hygiene typically as a result of poor mobility, dexterity and impaired cognition
- tooth loss and limited oral functioning
- ill fitting removable dentures
- high rates of xerostomia (dry mouth) and oral cancer [18, 51, 52]

Poor oral health can reduce self-confidence and quality of life. Oral health problems arising from missing teeth, cavities, gum disease or infection or ill-fitting dentures can lead to deterioration in comfort, function, hygiene and appearance[53]. Pain and functional loss can cause difficulty eating and force people to modify the consistency and type of food eaten increasing the potential for malnutrition and its complications. Many systemic diseases and their treatments (radiotherapy, medications) can increase the risk of oral diseases as a result of reduced salivary flow increasing the risk of caries and impeding the ability to wear dentures, altered senses of taste and smell, gingival overgrowth, and mobility of teeth. Other relevant risk factors detrimental to oral health include high sugar content diets, suboptimal oral hygiene due to poor dexterity and impaired cognition, and alcohol and tobacco use[51].

Trends suggest that there has been considerable improvement in oral health of older populations of industrialised countries over the last few decades. More elderly are retaining teeth than a decade ago; however a recent NZ based study suggests many retaining teeth have dental caries with 50% in need of conservative dental treatment and 40% benefiting from one or more extractions. While dental prostheses improve quality of life by restoring lost function and aesthetics, it is estimated up to 30% of denture wearers required review [53].

Research overseas and in NZ indicates that older people in long term residential care are especially vulnerable to poor oral health, compared to those living in the community. A recent Christchurch based NZ study reported many older adults living in residential care have poor oral hygiene and do not receive regular dental care[53].

The major dental conditions of dental caries, periodontitis, and dental injury are all potentially preventable through adoption of low sugar consumption, regular tooth brushing with fluoride toothpaste and smoking cessation. These can all help to prevent the onset of disease, while regular dental checkups can detect early problems and arrest disease progression over the life course. However, most dental services are not publicly funded for older people, so there is an economic barrier to accessing regular dental checkups seen in socioeconomic status inequalities in access and outcomes due to unmet need.

#### **4.4.3.7 Urinary continence**

Urinary incontinence (UI) is the involuntary loss of urine [54]. The prevalence of urinary incontinence in older adults is estimated to be between 8 per cent and 34 per cent for those living in the community, and around 50% of those in long term residential care[54-56]. The prevalence of UI in CMDHB has not been determined.

Prevalence of UI increases with age[55, 57]. A number of aged related physiological changes to the urinary tract predispose older people to urinary incontinence. These include:

- an increase in uninhibited detrusor contractions. These are present in a large proportion of continent and incontinent older men and women
- Benign prostatic hypertrophy in men can cause urinary outflow obstruction with urinary retention and/or uninhibited detrusor muscle contraction
- Decreased oestrogen with decrease in urethral sphincter function in women
- Decreased bladder capacity, increased residual urine, and increased nocturnal urine production
- Diseases affecting the bladder and urinary system such as those affecting mobility, cognition and neural control, diabetes mellitus
- Some medications[54-56, 58]

Urinary incontinence contributes to considerable morbidity, predisposing those afflicted to rashes, pressure sores, falls, and skin and urinary tract infections, and often associated with decreased social activity and impaired quality of life. Furthermore it poses considerable embarrassment to the sufferer, and can be a heavy caregiver burden. Overseas research suggests that many older people experiencing urinary incontinence and their caregivers do not seek help from a health professional. Common reasons for not seeking advice include: not considering UI as a serious medical condition; accepting it as a normal part of ageing; not feeling comfortable to do so; or not believing anything can be done to alleviate the

problem[54-56, 59]. The onset of incontinence is a frequent trigger for people entering long term residential care[60]

#### 4.4.3.8 Arthritis

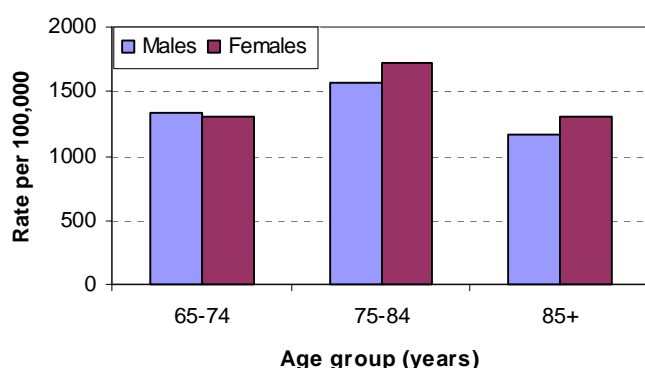
Arthropathies, better known as arthritis, encompass a group of diseases characterised by inflammation of one or more joints[36]. Osteoarthritis and rheumatoid arthritis are common and disabling conditions amongst older people, leading to impairment of mobility, independence and quality of life. It is estimated around half of the population aged 65 years and over have some form of arthritis. Osteoarthritis (OA) is a disorder of hyaline cartilage and subchondral bone, primarily affecting the hand joints, spine, and joints of the lower extremity. It ranks as the 4<sup>th</sup> leading cause of years lost to disability (YLD) in NZ (all ages). Obesity, repetitive occupational joint use, physical inactivity, and joint injury all predispose to OA.

A recent review of GP consultations for rheumatic disorders indicates that age is a significant variable associated with increased consultations particularly for osteoarthritis, gout, osteoporosis and joint surgery[72]. Māori were more likely than non-Māori non-Pacific to consult with gout, but less likely to consult with back pain or regional pain disorders. People residing in the most deprived areas (based on NZDep96) were found to have significantly higher probability of consulting with any rheumatic disorder but particularly for gout, regional pain and back pain[72]. This is consistent with the trend (non-significant) shown in the NZ Health Survey 2002/2003 in which the prevalence of arthritis was higher in NZ Dep2001 quintile 5 (most deprived) than the least deprived quintile 1[36]

The self-reported prevalence of arthritis in NZ older adults increased with advancing age, ranging from 26-32% in those aged 65-74, 42-50% of those aged 75-84 and 48-56% of those aged 85 years and over in the 2002/2003 NZ Health Survey[36]. In CM, the rate of hospitalisations for arthropathies (gout, arthritis) peak for the 75-84 year age group (male 1560 per 100,000 and females 1720 per 100,000) (Figure 76).

The main cause of hip and knee joint replacement is arthritis. The average annual rate of total hip joint replacements in CM for the period 2002-2004 was 3.6 per 1000 for males and 4.2 per 1000 for females aged 65 years and over. For this same period, an average of 2.4 per 1000 males and 3.1 per 1000 females had total knee joint replacements.

**Figure 76: CM hospitalisation rate for any arthropathy, 2004**



Source: NMDS. Includes all arthritis, gout etc

#### 4.4.4 Injury

Injury is a leading cause of mortality and morbidity in the older population. While it is not captured in the potentially avoidable rubric, it is likely that a considerable proportion of Injury is preventable and thus it is useful to look at it in more detail. Within the broad construct of Injury the main mechanism of injury leading to hospitalisation in the CM older population for females is given in Table 85, and males Table 86.

There are both age and gender specific variations in the cause of hospitalisations associated with injury. The most marked increase with age is seen for fall related injury. Amongst the population aged 85 years and over, falls are the leading cause of injury-related hospitalisation for both genders.

**Table 85: Selected leading causes of injury resulting in hospitalisation in CM and NZ older females, 2001-2004**

Cause of injury: females	Number of hospital discharges per year								Rate per 100,000/year							
	65-74		75-84		85+		Total 65+		65-74		75-84		85+		Total 65+	
	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ
Falls (W00-W19)	144	1545	238	3402	220	3115	603	8062	1338	1165	3530	3530	9045	8510	3015	3035
Therapeutic substances (Y40-Y59)	137	1219	140	1678	65	808	342	3704	1273	918	2070	1738	2660	2203	1710	1393
Surgical/medical procedures causing abnormal reaction (Y83-Y84)	142	1509	94	1382	36	500	271	3391	1310	1140	1388	1433	1473	1365	1355	1275
Exposure to mechanical forces (W20-W64)	24	220	23	272	12	170	59	662	228	165	335	280	515	465	295	250
Transport Related Injury (V01-V99)	19	216	17	216	6	85	42	517	180	160	255	210	233	235	200	180
Total Injury Hospitalisations (V01-Y98)	517	5212	559	7623	364	5071	1440	17906	4783	3925	8280	7903	14958	13843	7203	6733

Source: NMDS

**Table 86: Selected leading causes of injury resulting in hospitalisation amongst CM and NZ older males, 2001-2004**

Cause of injury: males	Number of hospital discharges per year								Rate per 100,000/year							
	65-74		75-84		85+		Total 65+		65-74		75-84		85+		Total 65+	
	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ	CM	NZ
Surgical/medical procedures causing abnormal reaction (Y83-Y84)	187	2148	119	1724	36	450	342	4321	1888	1745	2423	2490	3443	2895	2158	2080
Adverse effects of therapeutic substances (Y40-Y59)	132	1211	125	1329	38	418	295	2958	1335	985	2545	1913	3620	2685	1860	1423
Falls (W00-W19)	93	1006	127	1548	72	974	292	3528	943	818	2580	2240	6878	6275	1845	1700
Exposure to mechanical forces (W20-W64)	41	429	22	239	5	71	68	738	413	345	453	348	483	455	428	355
Transport related injury (V01-V99)	21	256	15	170	4	52	40	477	218	203	313	240	363	335	258	223
Total Injury Hospitalisations (V01-Y98)	525	5623	449	5514	173	2147	1146	13283	5318	4573	9133	7965	16395	13810	7230	6390

Source: NMDS

#### 4.4.4.1 Falls/fractures

Falls-related injuries are both an important health problem in their own right and also an important clinical marker of frailty[61]. In any given year, one-third of all community-based adults aged 65 years and over, and 50% of those aged 80 years and over, are estimated to sustain a fall. Falls are more common amongst those in residential care facilities, with over 50% falling annually[54, 61, 62]. Rates are higher for non-Maori, non-Pacific people than Māori or Pacific people[63].

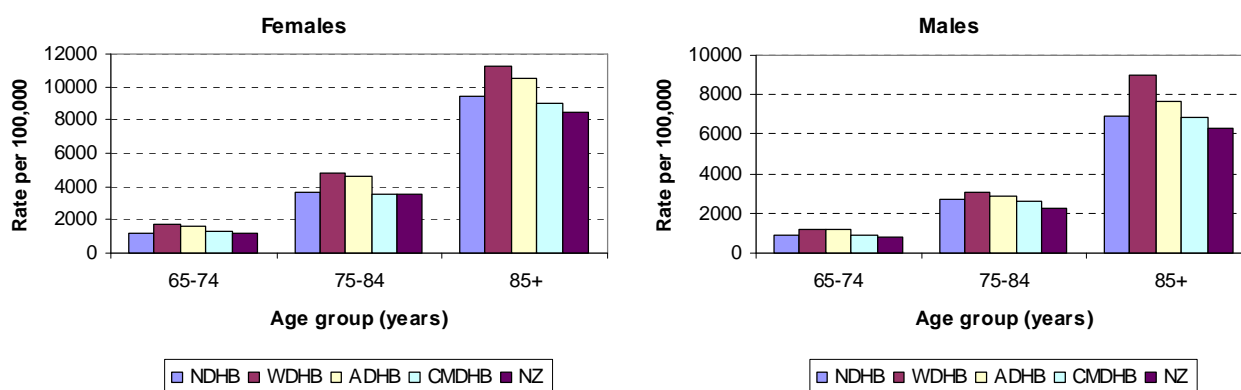
Amongst the older CM population, falls are the leading cause of injury related hospitalisations for females and 3<sup>rd</sup> leading cause for males aged 65 and over in CM. By age 85+ fall-related hospitalisations are the leading cause of hospitalisations for injury for males also.

Risk factors for falls include extrinsic factors such as environmental hazards (e.g. loose floor coverings, clutter, slippery surfaces, wearing slippers[64]), and intrinsic factors such as: arthritis, depressive symptoms, orthostatic hypotension, impaired vision, muscle strength and balance, gait or cognition, incontinence, more than 4 medications or psychoactive medications, a history of falling, age and gender. Residing in a residential care facility is also associated with an increased risk of falls[61, 62, 65-67].

Loss of confidence, and decreased mobility as a result of a fall, can contribute to social isolation and can trigger the move to residential care[54, 61]. A high proportion of falls result in injury. An estimated 20% of older people who fall require medical attention, with between 5-10% of all falls resulting in fractures and 2% resulting in fracture of the proximal femur (hip fractures). The risk of injury following a fall is associated with muscle strength, osteoporosis, low body weight, and cognitive impairment. Hip fracture is a serious outcome of a fall in the elderly as significant co-morbidities may prevent surgical treatment, with immobilisation and traction leading to high risk of muscle wasting and reduced mobilisation, and of pneumonia. Hip fractures are associated with 33% mortality within one year (likely to be an underestimate of the true burden as most will not be categorised as the primary cause of death[68])[67].

The overall rate of fall-related hospitalisation in adults aged 65 and over is approximately 60% higher in females than for males (Figure 77). There is a clear increase in fall-related hospitalisations with age for both males and females.

**Figure 77: Hospitalisation rates from falls, age 65+, Northern DHBs, 2001-2004**



A recent Auckland NZ based study recorded all falls experienced by a cohort of 680 residents of 14 residential care facilities over a 18 month period. 271 residents (40%) sustained a total of 954 falls. 605 of the total 954 falls (63%) resulted in injury of which 46% were minor, 12% were moderate and 5% were major e.g. hip fractures. Environmental hazards were associated with 15% of the falls[65].

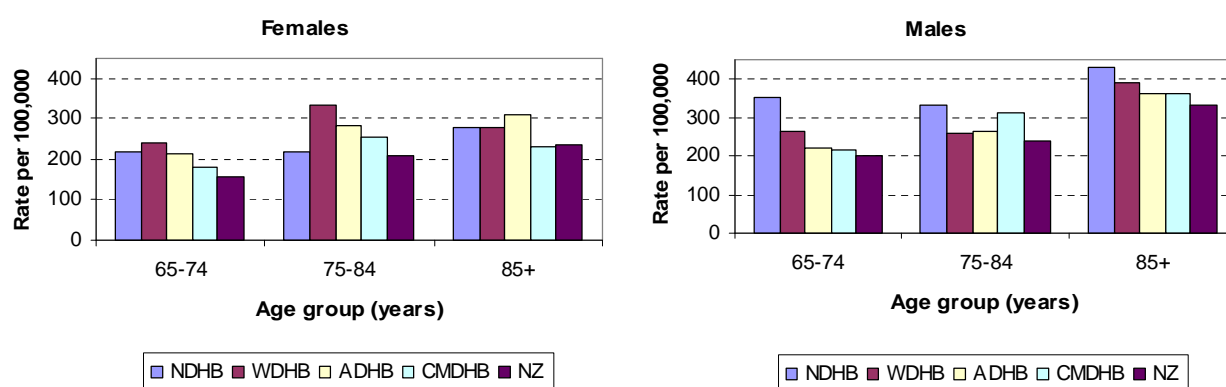
Over the last decade there have been a number of large randomised controlled trials and systematic reviews that indicate the value of preventive strategies[69]. The Cochrane collaboration (2004) reported that adoption of the best interventions can produce a 20% relative risk reduction and around a 9% absolute risk reduction in falls. This review suggests that 11 people would need to be treated to prevent one fall. The best evidence is for multi-

dimensional interventions, which include a range of medication review, environmental assessment, individualized moderate-to high –intensity strength and balance training, and hip protectors. There is good evidence for exercise-only strategies which increase lower body strength and flexibility, and improve balance[70], and of course exercise has benefits for many other conditions. Tai Chi is one type of exercise that has been shown to be effective[69, 71].

#### 4.4.4.2 Transport related injury requiring hospitalisation

Transport related injury requiring hospitalisation is the fifth leading cause of injury related hospitalisation for CM adults aged 65 years and over (although the absolute numbers are low).

**Figure 78: Hospitalisation rate due to transport related injury by DHB, 2001-2004**



#### 4.4.5 Surgical indicators

This section examines a selected range of high-volume/high-cost surgical procedures received by adults aged 65 years and over. The data includes both acute and elective surgery and is presented as age-specific rates per 1000 by gender and comparatively across the wider Auckland DHBs. For further information on these indicators by ethnic group or trends for 2000-2004 please refer to age standardised rates for all adults in the CMDHB Population Health Indicators, 2005 (available at [www.cmdhb.org.nz](http://www.cmdhb.org.nz)).

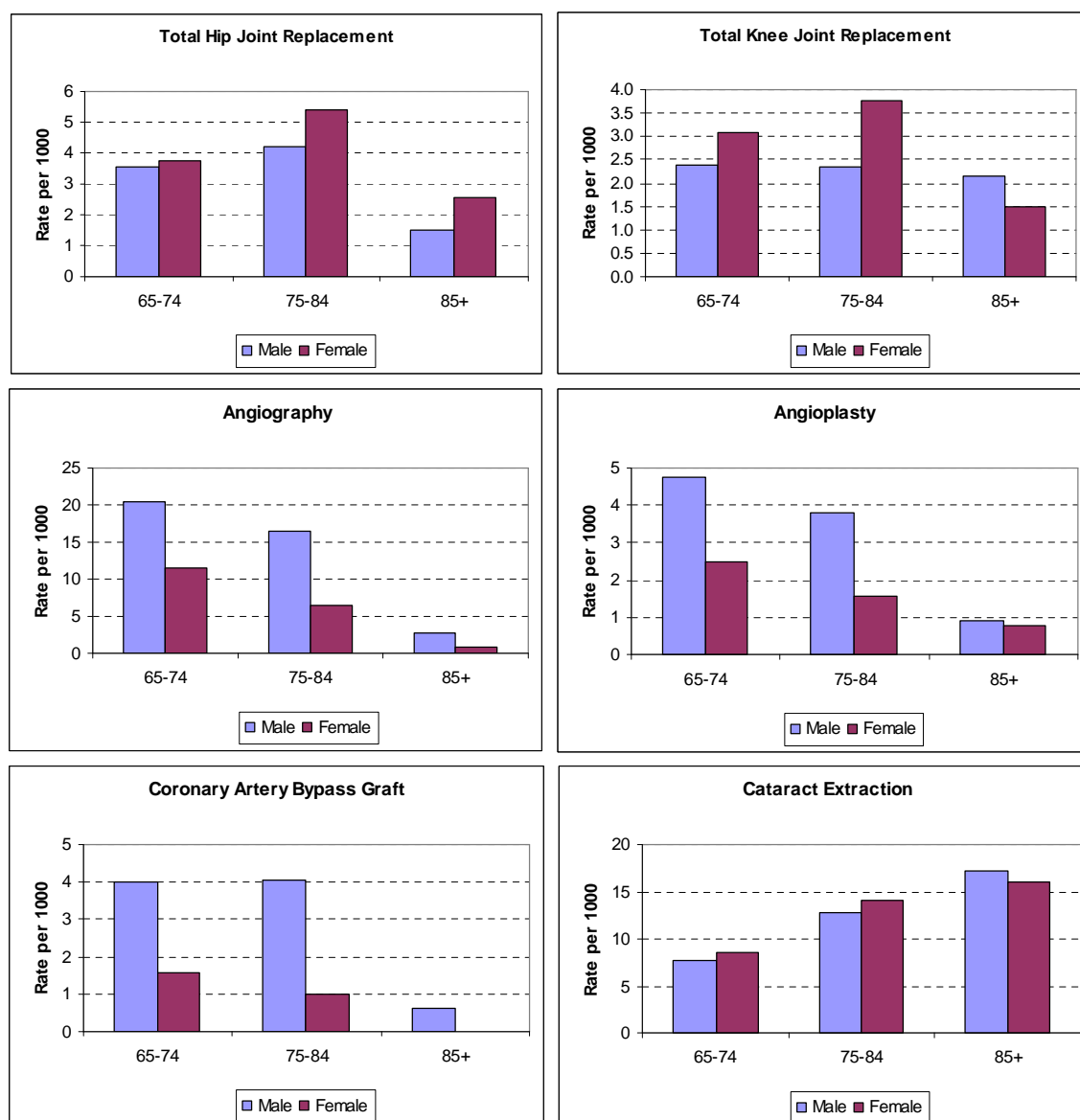
##### 4.4.5.1 Selected surgical indicators by age and gender

There are some clear gender specific patterns evident, with males having higher rates of cardiovascular procedures (angioplasty, angiography and coronary artery by-pass grafts) than females (Figure 79). This is congruent with higher rates of cardiovascular morbidity amongst males. With the exception of cataract surgery, those aged 85 years and over were less likely to have undergone the more major surgical procedures. This pattern is likely to be indicative of increasing co-morbidities with age contributing to an increased anaesthetic risk and altered balance between perceived risks/benefits of major surgery (Figure 79 & Table 87).

**Table 87: Selected surgical procedures, CM procedure rate by age, 2002-2004**

Procedure	Rate per 1000/yr, 2002-2004			
	65-74	75-84	85+	All 65+
Total hip joint replacement	3.7	4.9	2.2	3.9
Total knee joint replacement	2.7	3.2	1.7	2.8
Cataract extraction	8.1	13.6	16.5	10.7
Cholecystectomy	2.6	2.5	1.2	2.4
Prostatectomy	2.2	3.5	1.2	2.5
Angiography	15.8	10.7	1.5	12.7
Angioplasty	3.6	2.5	0.8	3.0
Coronary artery bypass graft	2.7	2.3	0.2	2.3

**Figure 79: Selected procedures, CM older adult rate by age and gender, 2002-2004**



#### 4.4.5.2 Selected surgical indicators by DHB

Compared with the national rates averaged for 2002-2004, adults aged 65 years and over in CMDHB had higher surgical intervention rates for angiography, similar cholecystectomy, angioplasty and coronary artery bypass graft rates, and lower rates of total hip or knee replacements, angioplasty, cataract extraction and prostatectomy (Table 88).

**Table 88: Selected surgical procedures by DHB ages 65 +, 2002-2004**

Procedure	DHB annualised a-s rate/1000, 2002-2004				
	NDHB	WDHB	ADHB	CMDHB	NZ
Total hip joint replacement	4.2	3.9	2.7	3.9	4.7
Total knee joint replacement	3.7	3.0	2.0	2.8	3.3
Cataract extraction	15.8	12.5	13.2	10.7	13.1
Cholecystectomy	2.5	2.2	1.6	2.4	2.3
Prostatectomy	3.5	3.0	2.5	2.5	3.3
Angiography	8.4	10.8	11.6	12.7	10.2
Angioplasty	2.6	3.3	3.5	3.0	3.4
Coronary artery bypass graft	2.4	2.4	2.4	2.3	2.2

Source: NMDS

## 4.4.6 Disability

'Disability' is defined by Statistics New Zealand as any self-perceived limitation in activity resulting from a long-term health problem or condition, lasting or expected to last six months or more and not completely eliminated by an assistive device (e.g. hearing aid) [12]. The NZ Disability Strategy emphasises that disability is not a property of individuals, but rather the process arising when individuals with impairments (physical, sensory, neurological, psychiatric, intellectual or other types) are limited in full participation in society by barriers within their environment [13].

There are two key sources of disability data in New Zealand available through Statistics NZ. The first is based on the 5 yearly Census Questions 14 and 15 in the Individual Form. The second data source is two disability surveys of a sample of New Zealanders undertaken by Statistics NZ in 1996/97 and 2001. The sample data is then used to estimate the number of people with disability in the overall population. Unfortunately the survey sample sizes are too small to provide DHB level data, thus the data is aggregated to regions based on the former Regional Health Authorities. The number estimates below for CM are estimated from the Disability Survey data provided for the region corresponding to the Northern Region encompassing Counties Manukau, Auckland, Waitemata and Northland DHBs. All data is for adults normally resident in private households.

### 4.4.6.1 Prevalence and severity of disability

Table 89 presents the number and percentage of adults aged 15 years and over estimated to be living in private households experiencing disabilities in the Northern region. The proportion of the population experiencing some disability increases with age. The proportion of each age group experiencing moderate or severe levels of disability also increases with age.

In the under 65 age group, it is estimated 14% of the population have some level of disability, and 86% report no disability in the Northern region, compared with 17% and 83% respectively nationally. Based on the Northern region proportions this would equate to an estimated 36,300 CM residents in this age group experiencing some type of disability. In the younger age group, the majority of disability is mild or moderate.

In the 65-74 year age group, an estimated 40% of the Northern region population and 42% of the NZ population experience some disability. The levels of severity of disability are similar in the Northern region in comparison with NZ as a whole.

In the 75+ year age group, the proportion of the Northern region population living with disability has increased to 61% compared to 63% nationally. A slightly greater proportion of the 75+ population in the Northern region report moderate disability compared to the levels reported for NZ (35% vs 39% respectively).

**Table 89: Estimated number of CM residents experiencing disability, by severity of limitation 2001**

Severity of limitation	Under 65		65-74		75+	
	No.	%	No.	%	No.	%
Mild	16,320	6.4	3,230	16.6	2,190	15.7
Moderate	15,480	6.1	3,320	17.0	4,910	35.3
Severe	4,480	1.8	1,120	5.8	1,420	10.2
Total adults with disability	36,300	14.2	7,700	39.6	8,510	61.2
No disability	218,720	85.8	11,780	60.6	5,390	38.8
Total all adults (disability + No disability)	255,020	100.0	19,460	100.0	13,910	100.0

Source: Statistics NZ, Household Disability Survey 2001

# Percent is derived from data from Stats NZ Disability Survey, 2001 for the Northern region. The number is an estimate for CMDHB based on Northern region %, and estimated population for CMDHB in 2001.

#### 4.4.6.2 Type of disability

Table 90 estimates the number of CM older population who could be experiencing the specified types of disability. It is estimated that at age 75 years and over, 50% will experience some type of mobility limitation, affecting for example their ability to walk, carry their own weight or climb stairs; 37% will have their agility limited which may manifest as difficulty bending, dressing, or grasping objects; 28% will find it difficult to hear conversations despite hearing devices; and 11% will have problems seeing for everyday tasks despite corrective lenses.

**Table 90: Estimated number of CM residents experiencing disability, by type 2001**

Type of Disability	Under 65		65-74		75+	
	No.	%	No.	%	No.	%
Hearing impairment	10,430	4.1	2,860	14.6	4,040	28.4
Vision impairment	4420	1.7	770	3.9	1,610	11.3
Mobility limitation	15,500	6.1	5,650	28.9	7,130	50.1
Agility limitation	14,060	5.5	4,130	21.1	5,190	36.5
Intellectual disability	1770	0.7	-	-	-	-
Psychological/psychiatric disability	6220	2.4	-	-	460	3.3
Other disability	15,530	6.1	2,640	13.5	2,920	20.5
Total adults with disability	36,300	14.2	7,740	39.6	8,710	61.2
Total all adults	255,020	100.0	19,560	100.0	14,230	100.0

Source: Statistics NZ, Household Disability Survey 2001

# Percent is derived from data from Stats NZ Disability Survey, 2001 for the Northern region encompassing CMDHB, ADHB, WDHB, NDHBs. The number is an estimate for CMDHB based on Northern region %, and estimated population for CMDHB in 2001.

Notes: (1) Estimates are rounded to the nearest hundred and suppressed (-) for high sampling error.  
(2) Disability Types do not sum to Total as people may have more than one Disability

#### 4.4.6.3 Need for services

The receipt of help with everyday activities increases with age (Table 91). In 2001, 28% of adults aged under 65 years, 44% of those 65-74 years and 67% of those aged 75 years and over received some assistance with everyday activities in the Northern region. This closely approximates national estimates of 30%, 44%, and 67% for respective age groups.

**Table 91: CM estimated number receiving assistance with everyday activities, 2001**

Receipt of help with everyday activities	Under 65		65-74		75+	
	No.	%	No.	%	No.	%
Yes receive help	10,250	28.2	3,420	44.1	5,790	66.5
No help	23,170	63.8	3,720	48.0	2,100	24.1
Not specified or unstated	2,890	7.9	610	7.8	790	9.1
Total	36,300	100.0	7,740	100.0	8,710	100.0

Source: Statistics NZ, Household Disability Survey 2001

# Percent is derived from data from Stats NZ Disability Survey, 2001 for the Northern region encompassing CMDHB, ADHB, WDHB, NDHBs. The number is an estimate for CMDHB based on Northern region %, and estimated population for CMDHB in 2001.

A wide range of everyday assistance is received by adults living in private households experiencing disability (Table 92).

**Table 92: Type of everyday assistance received in the Northern Region, 2001**

Type of everyday assistance	Under 65		65-74		75+	
	No	%	No	%	No	%
Preparing meals	13900	40.8	4000	32.3	4400	20.8
Shopping	16500	48.4	6300	50.8	9500	44.8
Everyday housework	19000	55.7	6100	49.2	12900	60.8
Heavy housework	25100	73.6	10500	84.7	17500	82.5
Private finances	9900	29.0	2400	19.4	4700	22.2
Personal care	6100	17.9	2200	17.7	3300	15.6
Communicating with others	8400	24.6	2300	18.5	2200	10.4
<b>Total</b>	<b>34100</b>	<b>100.0</b>	<b>12400</b>	<b>100.0</b>	<b>21200</b>	<b>100.0</b>

Source: Statistics NZ, Household Disability Survey 2001, adults living in private households. % is of all those receiving assistance

**Table 93: Type of everyday assistance received in New Zealand, 2001**

Type of everyday assistance	Under 65		65-74		75+	
	No	%	No	%	No	%
Preparing meals	36300	29.2	12000	26.9	19100	25.1
Shopping	49600	39.9	17600	39.5	32500	42.8
Everyday housework	58000	46.7	23000	51.6	47500	62.5
Heavy housework	87200	70.2	38100	85.4	61400	80.8
Private finances	25600	20.6	9100	20.4	16600	21.8
Personal care	14900	12.0	7100	15.9	12900	17.0
Communicating with others	25200	20.3	5800	13.0	8100	10.7
<b>Total</b>	<b>124200</b>	<b>100.0</b>	<b>44600</b>	<b>100.0</b>	<b>76000</b>	<b>100.0</b>

Source: Statistics NZ, Household Disability Survey 2001

The use of special equipment increases with age. In the Northern region, 25% of the under 65 year, 39% of the 65-74 year and 57.1% of the over 75 year old age group use special equipment. In comparison with the national average the proportion of adults using special equipment is marginally higher in the Northern region than the national average for the under 65 year age group (25% compared with 22%) and lower for the older age groups (65-74 years 39% in North vs 42% nationally; 75+ 57% in North vs 64% nationally).

**Table 94: Use of special equipment by adults experiencing disabilities, Northern region, 2001**

Use of Special Equipment	Under 65		65-74		75+	
	No	%	No	%	No	%
use special equipment	30,600	25.3	11000	39.1	18200	57.1
no use of special equipment	85,000	70.4	15900	56.6	11900	37.3
not specified	5,200	4.3	NA	NA	1800	5.6
<b>Total</b>	<b>120,800</b>	<b>100.0</b>	<b>28100</b>	<b>100.0</b>	<b>31900</b>	<b>100.0</b>

Source: Statistics NZ, Household Disability Survey 2001

Thirteen percent of the under 65 year, 14% of the 65-74 year and 15% of the 75+ year age groups in the North reported an unmet need for special equipment, compared to 12%, 13%, 14% respectively nationally.

**Table 95: Unmet need for equipment reported in the Northern Region, 2001**

Unmet Need for Special Equipment	Under 65		65-74		75+	
	No	%	No	%	No	%
Unmet Need	15,100	12.5	3,900	13.9	4,700	14.7
No Unmet Need	100,600	83.3	23,000	81.9	25,300	79.3
Not specified or unstated	5,100	4.2	NA	NA	1,800	5.6
Total	120,800	100.0	28,100	100.0	31,900	100.0

Source: Statistics NZ, Household Disability Survey 2001

## Summary

This section has provided an overview of the health status of the older population in Counties Manukau. The key findings under each sub-section are summarised below.

### *Life expectancy and mortality*

In general, the current Counties Manukau older population has life expectancy and mortality rates similar to overall NZ figures, but slightly below those for Auckland and Waitemata. Maori, Pacific and older people living in more deprived areas probably have worse health outcomes, but this is difficult to quantify due to the low numbers involved.

### *Morbidity*

A number of data sources were examined in an attempt to describe the incidence and prevalence of diseases affecting the older adult population of CM. There is limited prevalence data available at regional level, and thus approximations have been made from national ad hoc survey data.

Hospitalisation data provides an imperfect view of morbidity as it is influenced by factors other than disease prevalence and incidence such as disease severity, referral patterns, primary care availability, proximity to hospital care, patient preferences and resources, and service access barriers. Unfortunately disease-specific primary care data is not readily available. Disease registers provide a more accurate indication of disease incidence; however the only national register relevant to this population is the New Zealand Cancer Registry.

Hospitalisation rates in CM tend to be higher than NZ and neighbouring DHBs. Acute hospitalisations, particularly for IHD and diabetes have been consistently increased over the past 5 years. The lack of integration of primary care and secondary care in the management of chronic conditions such as these has led to a number of interventions by CMDHB to address this, including CCM, FAMA, and POAC.

Apart from a few exceptions, the prevalence of chronic disease increase with age, indicative in part of cumulative exposure to risk factors and reduction in physiologic reserve.

### *Disability*

Disability rates increase with age, but most older people are maintained in their own home, with assistance.

There is still considerable scope for health gain. While the focus of this section has been on health indicators for those aged 65 years and over, a life course approach must be taken to address the main contributors to the burden of disease in older age groups, namely cardiovascular, cerebrovascular and chronic respiratory disease, diabetes and its complications, cancers and injury and population-based and likely intersectoral strategies needed to address the underlying determinants of these disease patterns. The determinants that impact on the health of older people will be considered in the next section.

## 5 Issues impacting on health

Health, health status and medical care exist within a social, economic, cultural, political and environmental setting. They are grown from the knowledge, current and historical beliefs and practices of governments, health care workers and communities[73]. Health varies over time and within and between different social classes, ethnic and cultural groups and iwi, hapu, and families/whanau[24, 74].

The Ottawa Charter (1986) characterised health as a “resource for everyday life...a positive concept emphasising social, personal resources and physical capacities”. This looks to create health through the provision of basic resources which empower individuals to achieve their goals[75].

The structural features considered to have the greatest influence on health across a wide range of settings are: socio-economic factors - income and poverty, employment and occupation, education, housing; population based services; family and social support, and culture and ethnicity. The distribution of some of these structural determinants has been described in section 4. It is these broad structural factors that shape the health of populations and drive health-related behaviours and utilisation of health services [24]. Socio-economically disadvantaged households have less disposable income to spend on eg physical activity or community activities and may act as a barrier to accessing adequate health services in a timely fashion. These factors are cumulative across the life course, and can span across generations. For example, Māori land confiscations eroded the economic base of many communities. Socioeconomic disadvantage in early life also influences health outcomes in later life[76].

Inequalities in the distribution of these broader structural determinants contribute to inequalities in health status between different socioeconomic and ethnic groups. There is also evidence of inequalities in health by gender and geography [76]. Differential access ‘to and through’ health services and in the adequacy of care also impact on inequalities in health outcomes.

Reducing inequalities in health benefits not only the individual and their family/whanau but the wider community[20, 76]. This requires intersectoral collaboration with sectors outside of health such as social development, housing, transport and education. Interventions at four levels have been proposed:

1. Structural: addressing the underlying determinants of health inequalities, namely, the social, economic, cultural and historical factors that fundamentally determine health
2. Intermediary pathways: targeting material, psychosocial and behavioural factors that mediate the impact of structural factors on health
3. Health and disability services: ensuring equity in access to and through health services; supporting ethnic specific services, and mainstream responsiveness and accountability.
4. Impact: minimising the impact of disability and illness on socioeconomic position [76].

### 5.1 Health related factors

The health of older people in Counties Manukau is influenced throughout the life-course by cumulative exposure to risk or protective factors. The CMDHB Population Health Indicators report [33] covers this in more detail and is available on [www.cmdhb.org.nz](http://www.cmdhb.org.nz). This report does not attempt to analyse the effects of these factors longitudinally but presents risk or protective factors for those aged 65 years and over where available.

The major preventable risk factors for onset of disease and injury are related to:

- suboptimal nutrition: inadequate fruit and vegetable intake, high cholesterol, being overweight or obese or conversely being malnourished;

- inadequate physical activity
- smoking
- consumption of alcohol at levels hazardous to health

Conversely adequate nutrition and regular physical activity, not smoking or drinking hazardously are protective. Other protective factors described in the literature include strong social capital (staying actively involved in social networks), and having regular health assessments.

The New Zealand Health Survey 2002/2003 provides an overview of the proportion of New Zealand older adults with selected risk/protective factors. These survey derived data are provided below in Table 96, along with estimates of the numbers of CMDHB residents postulated to have these factors.

**Table 96: Proportion of older population with specific risk factors, 2001**

Reducing the risk of illness	% of NZ 65-74 year olds		Estimated no. of CMDHB 65-74 years		% NZ 75+ year olds		Estimated no. of CMDHB 75+ years	
	Male	Female	Male	Female	Male	Female	Male	Female
High cholesterol	35	43	3276	4386	25	24	2175	1327
3+ vegetables a day	75	80	7020	8160	80	80	6960	4424
2+ fruit a day	50	70	4680	7140	60	75	5220	4148
Physically active #	75	65	7020	6630	53	43	4611	2378
Sedentary ##	12	17	1123	1734	33	40	2871	2212
Over-weight	51	38	4774	3876	45	36	3915	1991
Tobacco smoking	12	12	1123	1224	6	4	522	221
Potentially hazardous alcohol use	12	NA	1123	NA	3	NA	261	NA

Source: MOH, 2001 New Zealand Health Survey. Estimated no for CM based on NZ proportions by age & gender  
 # Physically active: 2.5 hours moderate activity/week  
 ## Sedentary: less than 30 minutes physical activity/week

### 5.1.1 Nutrition related factors

There is increasing evidence that the optimum body weight for older adults is higher than that for the younger population [77-79]. Weight loss of 4-5% or more of body weight over 1 year or in excess of 10% over 5-10 years is associated with increased mortality and morbidity associated with decline in physical function and quality of life (even when adjusting for comorbidity, disability, smoking, alcohol use, level of physical activity and excluding deaths proximal to weight loss to eliminate possible undiagnosed illness) [80]. A recent systematic review by Heiat and colleagues concluded that for adults aged 65 years and over the relation between BMI and mortality is a flat bottomed, U-shaped curve, with mortality rising only with a BMI above 31 kg/m<sup>2</sup> and possibly not at any BMI in those aged 75 years and over [77, 78].

Weight loss is more common than weight gain in older people[79]. Unintentional weight loss is defined as the involuntary reduction in total body weight over time and is an important risk factor in the older population. Unintentional weight loss may be indicative of disease presence and severity (e.g. advanced cardiovascular or respiratory disease, alcoholism, gastrointestinal disease or cancer) or undiagnosed illness. Contributors to weight loss in the older population include organic conditions (e.g. cancer, age-related physiological changes), psychological conditions (e.g. depression, dementia) and broader socioeconomic determinants of malnutrition arising from poor food security, and ill-fitting dentures. Age-associated physiological changes predisposing older people to weight loss include decreasing sense of smell and taste, reduced efficiency of chewing and slowed gastric emptying and neuroendocrine changes associated with early satiety and decline in appetite[80-82] We were not able to derive figures for the prevalence of under-nutrition in the CMDHB older population.

### **5.1.2 Physical activity**

Physical activity is associated with better health outcomes and can reduce the likelihood or slow the progression of the number of illnesses common in the older population, including diabetes, CHD, arthritis, respiratory disease, falls and their associated injuries. Physical activity is also protective for mental health[83]. Low impact exercise such as gardening, walking and housework are all that is needed. Environments need to encourage people to get out and get active – clear footpaths, local parks, good lighting, and safety concerns met.

### **5.1.3 Smoking**

Tobacco smoking is identified as an important risk factor for many leading causes of morbidity and mortality including heart disease and stroke, cancers (lung, throat, colorectal), and CORD. Between 1985 and 1995 tobacco product consumption in NZ adults reduced more rapidly than in any other OECD country, however gains have tailed off. There are marked gender and ethnic disparities still. The NZ Health Survey indicates that the prevalence of smoking peaks in the 25-44 year age group and then decreases, to the older population aged 65 years and over. Tobacco consumption amongst Māori markedly exceeds that of Pacific and Other.

A number of public health services exist to deter non-smokers from starting smoking, assist smoking cessation. These include: ARPHS smoke free promotion programme, and enforcement of the Smoke free Environments Act, Smokefree Hospitals operating in CMDHB, Te Hou Manawa Māori is a by Māori for Māori Provider that promoted smokefree Kohanga Reo, and Kura Kuapapa Māori, smoke free pregnancies and smoke-free activities, and education resources, Action on Smoking and Health (ASH) an NGO with a role in liaison and public health advocacy, Health Sponsorship Council Smokefree and Auahi Kore brands, Aparangi Tautoko Auahi Kore (ATAK Maori Smokefree Coalition) and personal health services Quit Group Quit/Me Mutu and Quitline.

### **5.1.4 Social capital**

A high level of social cohesion or 'connectiveness' in society is related to better health status of both individual and communities[24]. High social connectiveness is founded on strong family/whanau ties; good public transport and social/communication networks; a strong community/cultural identity; community participation and a safe environment.

In many Polynesian cultures, the older people are highly valued and central to their community[84, 85]. Older people in such communities are not necessarily defined by a chronological age but by their social standing[85, 86]. Kaumātua are kuia (older Māori women) and koroua/koro (older Māori males) that traditionally are conferred a status and role in the community that acknowledges their whakapapa, leadership and experience. They are considered to be taonga of the wider whanau/hapu/iwi and guardians of wisdom, tikanga Māori, and of moana, awa, whenua, forests, the marae and whanau [85]. Traditional Māori and Pacific practices are to care for Kaumātua and elders in a family community setting which provides strong support networks and positive social contact and identity. Increasingly diverse realities for all families, including Māori [87] and Pacific families will impact on their abilities to care for, and benefit from, their elders. Increasing pressures on families living and working patterns may exceed the capacity for family members to fit with traditional practices[85] or accepted norms. In addition, changing life roles may mean family members who historically would have been informal carers are now in paid employment outside the home, potentially increasing social isolation for the elders[85].

## **5.2 Age discrimination/ ageism**

Age discrimination is "the practical manifestation of ageism, which is a form of prejudice as unacceptable as racism or sexism." Discrimination on the basis of age can manifest directly or indirectly. Direct discrimination involves the presence of explicit discriminatory policies that disadvantage older people based on chronological age. Whereas, indirect discrimination does not involve explicit policies, it emerges in established practices and the use of language that disadvantages or excludes older people. Ageism results in exclusion of the older population thereby depriving the wider society of their potential contribution. Little data exists

on the prevalence of ageism in New Zealand, though it is expressly covered in the Human Rights legislation.

“Rooting out Ageism” is one of the central tenets of the English and Welsh National Frameworks for Older People which postulate the following key actions for the health sector to eliminate ageism:

- Strong leadership and ownership – including the identification of ‘champions’ and commitment to active involvement of older people in service planning
- Policy review to ensure that older people are not discriminated implicitly or explicitly.
- Workforce development
- Communication
- Advocacy

## **Summary**

The key structural features considered to have the greatest influence on health across a wide range of settings are: socio-economic factors - income and poverty, employment and occupation, education, housing; population based services; family and social support, and culture and ethnicity. The distribution of these determinants shape the health of populations and drive health-related behaviours and utilisation of health services.

Amongst older adults, the main risk factors associated with chronic disease are poor nutrition, high cholesterol, low physical activity, high blood pressure and tobacco use.

Social capital is protective and traditional patterns of family/whanau life and status of elders in Māori and Pacific communities confer strong community/cultural identity; and community participation.

Ethical principles of equity/justice, Government strategies and Treaty of Waitangi rights demand action to reduce inequalities in health outcomes and to work to ensure equitable and timely access to affordable health services.

## 6 Service utilisation in Counties Manukau

There are a number of different service areas with roles in service provision for the older population, ranging from:

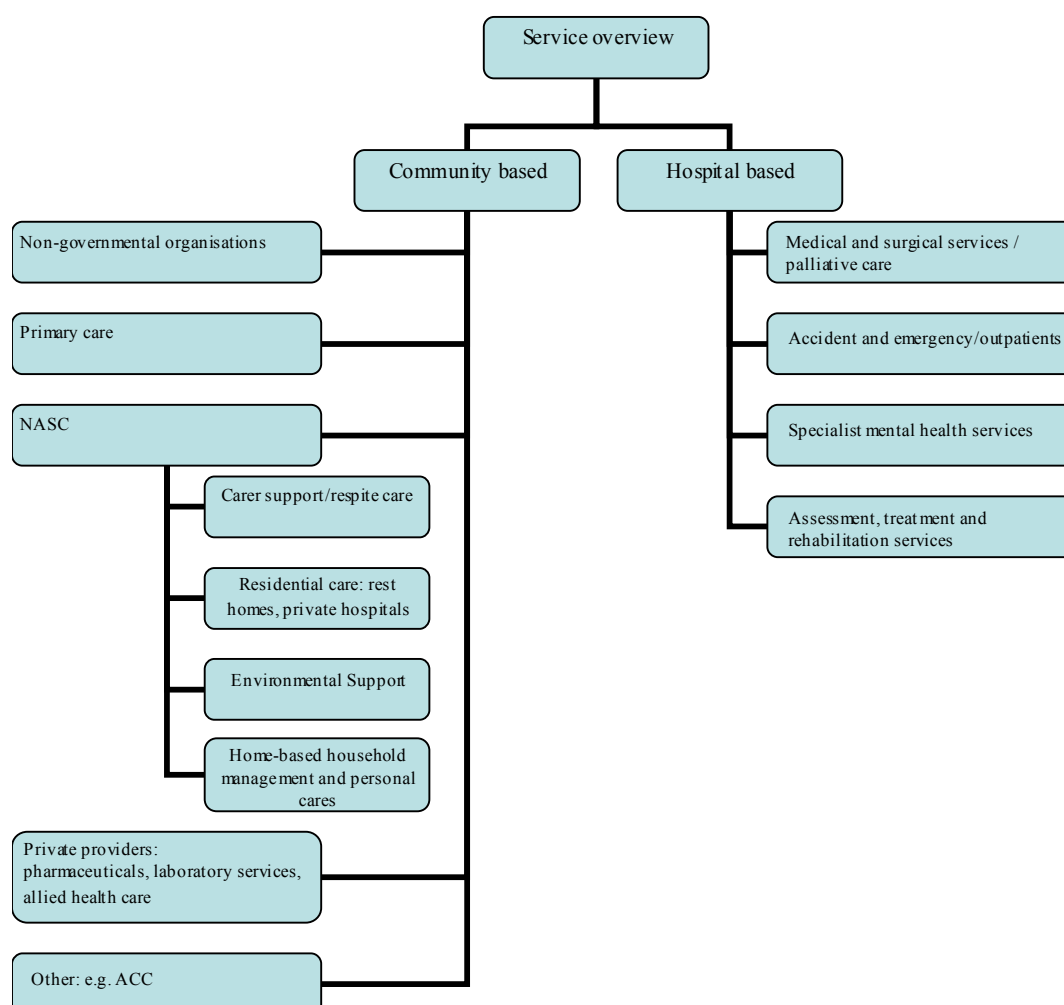
- Private hospitals, rest homes, respite and day care
- Home based support
- Community health
- Information services
- Secondary/tertiary hospital-based assessment, treatment and rehabilitation
- Needs assessment and service coordination

A pivotal parameter in maximising health gain for our older population is their access to timely, appropriate, acceptable and quality health services that will allow them to maintain their ageing in place in the community for as long as possible.

There are four broad sectors of service that will be explored:

1. Primary care/PHOs (delivered by GPs, Nurses and allied health professionals)
2. Hospital based services
3. Community based support services (comprising home-based and residential care)
4. Community based NGOs (Age Concern, Blind Foundation, Alzheimer's Society, Stroke Foundation)

**Figure 80: Overview of services provided community and hospital based settings for the CMDHB older population**



This section benchmarks patterns of service utilisation by those aged 65+ years in CMDHB. It is useful to be mindful that service utilisation is an imperfect proxy for health need, as use of any service is subject to varying constraints based on actual and perceived availability, accessibility, affordability and acceptability of that service. Furthermore, that the picture provided of service provision for the older population in this section is not comprehensive, and is biased by data availability and quality.

## 6.1 Primary care

Primary health care is typically the first level of contact with the health system where services are mobilised to promote health, prevent illnesses, care for common illnesses and manage ongoing health problems. Core primary health care services include assessment, diagnosis and treatment of common illnesses, health promotion, illness prevention (e.g. screening), health maintenance and home support, community rehabilitation, pre hospital emergency medical services and coordination and referral to allied and secondary health services.

As noted in section 2.2.7, p1, the scope of information available on primary care is limited to high level characteristics of providers and enrolled patients and Counties Manukau specific data on problems presented and management offered are not readily available. The data presented in this section comprises:

- Counties Manukau PHO enrolment data by age (65+), ethnicity (Māori/Pacific grouped, non-Maori/non-Pacific) and gender, sourced from HealthPac in form of Northern Region Support Agency Quarterly PHO Capitation Reports.
- The number of active GPs per 100,000 population, sourced from the Medical Council of New Zealand Workforce Survey, 2003 [88].
- National Primary Medical Care Survey (NatMedCa), 2003, a nationwide survey undertaken to describe primary health care in New Zealand, including characteristics of providers, practices and patients, the problems presented and management offered.
- New Zealand Health Survey (1996/7, 2002/3) national data

The General Practice (GP) workforce in CMDHB is described in the 2005 CMDHB Health Indicators Report [89]. Briefly, general practitioners are the largest group of medical practitioners in New Zealand, comprising approximately 34% of respondents to the 2003 nationwide Medical Council Workforce Survey<sup>iii</sup> [90]. At that time there were 3,006 active GPs, with a gender split of 61% male and 39% female GPs (slightly above the average for all female medical practitioners 35%)<sup>iv</sup>.

The number of active GPs ranged from 52.8 in West Coast DHB to 96.5 per 100,000 population in Auckland DHB, with Counties Manukau at the lower end of the range with 67.9 per 100,000 population. When looking at the relationship of full time equivalent (FTE) GPs per 100,000 population, Counties Manukau has the lowest rate of GPs with 61 per 100,000 population and Otago the highest at 99 FTE GPs per 100,000. The Northern DHBs are shown in

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<sup>iii</sup> This Workforce Survey had a 95% response rate, thus is likely to be reasonably representative of all NZ medical practitioners.

<sup>iv</sup> An active medical practitioner is defined in this survey as one who holds an Annual Practising Certificate and works four or more hours per week in NZ in medical or related work.

Table 97.

**Table 97: GP workforce by main DHB locality, 2003**

DHB	2003			2002	
	No. of GPs	FTEs for GPs at all work sites	DHB locality Population	FTEs for GPs per 100,000 population	FTEs for GPs per 100,000 population
NDHB	116	131	146,550	89	81
WDHB	313	308	474,700	65	65
ADHB	400	384	415,300	92	86
CMDHB	252	253	416,100	61	63
NZ	3,006	3,075	4,008,470	77	76

Data source: New Zealand Medical Council Workforce Survey, 2003 [88].

There are eight Primary Health Organisations (PHOs) in Counties Manukau, with a total enrolled population of 459,862. Of these enrollees 38,402 (8%) are aged 65 years and over (figures as at March 2005)[91]. This enrolled proportion of 8% is marginally less than the estimated 8.9% proportion the 65 year and over population are of the total population. The enrolled population includes residents of other DHBs however, and does not include CMDHB residents who may be enrolled in PHOs outside the CMDHB area, making it difficult to interpret population coverage figures.

The gender and ethnic split of the PHO enrolled population aged 65+ parallels that of the total population (55% females, 45% males; 5% Māori, 11% Pacific, 84% Other). Of the over 65 years old enrolled population

- 14% are in Access PHOs and 86% in Interim PHOs.
- 8% are High Use Health Card Holders
- 60% hold a Community Services Card
- Only 5.6% of those considered eligible are enrolled in Care Plus (Auckland 0.3%, Waitemata 1.7%, Northland 3.6%) [91]

Of the CM PHOs, there is one Pacific Provider TaPasefika Health Trust and two Māori Providers Tamaki PHO (Ngati Whatua, Otara Union Health) and Te Kupenga O Hoturoa Charitable Trust.

Currently, there are no CM PHO Health Promotion Plans that specifically target older people. However, health promotion projects that have capacity to benefit older people include the Walking School Bus Programmes (exercise, social interaction, and increasing connectiveness with community) and those with an explicit focus on increasing physical activity and healthy nutrition.

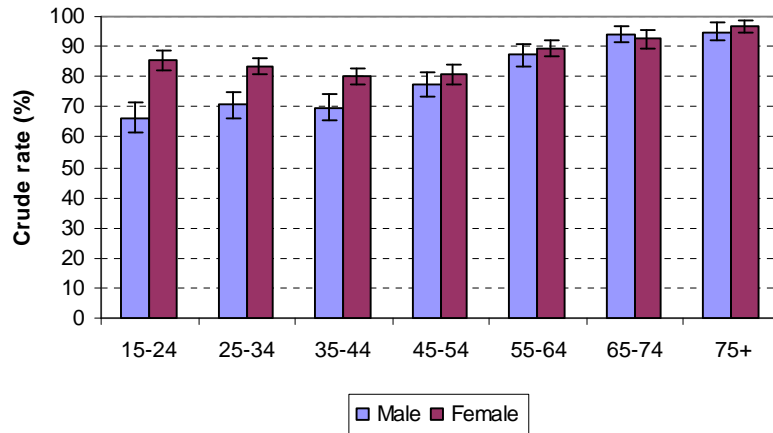
Information on primary care service utilisation has been elicited in three main national health surveys. The NZ Health Survey 2002/03 and NZ Health of Older People Survey 2000 surveyed approximately 2245 and 3060 older individuals respectively from the community nationwide, and the National Primary Medical Care Survey (NatMedCa) 2002, surveyed health professionals in private general practices (i.e. family doctors), community-governed organisations, and Accident and Medical (A&M) clinics and Emergency Departments. The key findings from these surveys focusing on the health of older people summarised below.

### 6.1.1 General practitioners

The NZ Health Survey 2002/3 indicates that over 97% of all NZ adults aged 65 years and over have a usual health practitioner. The older adults are significantly more likely than younger age groups to have consulted a GP in the last 12 months (

Figure 81) [36]. There is no significant difference in the consultation rates by patient gender.

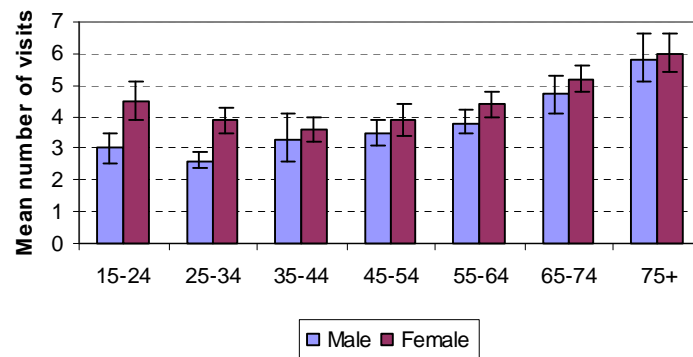
**Figure 81: Percent of NZ population who consulted a GP in the last 12 months, 2002/03**



Source: MOH, PHI NZ Health Survey 2002/2003

It is estimated that 93% of the NZ population aged 65-74 years and 96% of those aged 75 years and over visited their GP in the last 12 months. Of those who had seen a GP in the previous 12 months, the average number of visits was 5.2 and 6 for females aged 65-74 and 75+ respectively, and 4.7 and 4.8 for males aged 65-74 and 75+ respectively (Figure 82).

**Figure 82: Mean number of visits to GP for NZ population in last 12 months, 2002/03**



Source: MOH, PHI NZ Health Survey 2002/2003 (excludes those who had zero visits)

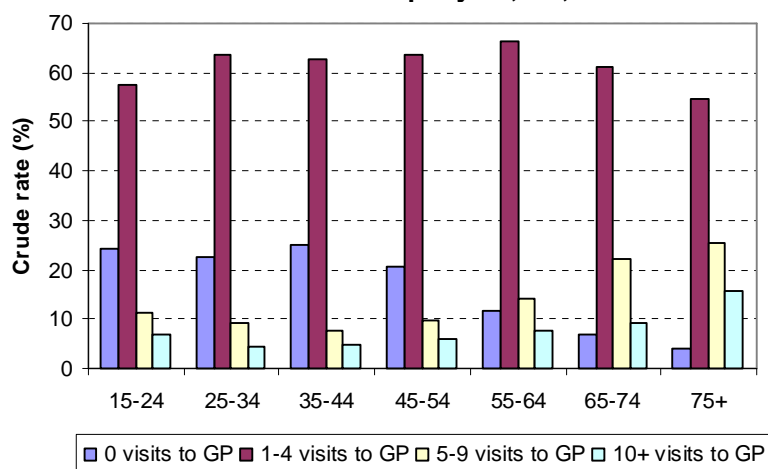
The average number of GP visits per year increases with age in adult life (with smaller peak for females of reproductive age). It is estimated that around a quarter of those aged 65 and over visit a GP 5-9 times a year. Ten or more GP visits are made by 10% of 65-74 year olds and 16% of those aged 75+ years. Only 4% of those 75+ years are estimated to not have visited a GP in the previous 12 months (

Figure 83 & Table 98).

**Table 98: Estimated number of visits to a GP per year, NZ, 2002/03**

Age group (years)	Percentage of age-specific population						
	15-24	25-34	35-44	45-54	55-64	65-74	75+
0 visits to GP	24.1	22.5	24.9	20.7	11.7	6.9	4.1
1-4 visits to GP	57.6	63.5	62.6	63.4	66.5	61.3	54.8
5-9 visits to GP	11.5	9.4	7.6	9.7	14.2	22.4	25.4
10+ visits to GP	6.9	4.6	5	6.2	7.6	9.5	15.7

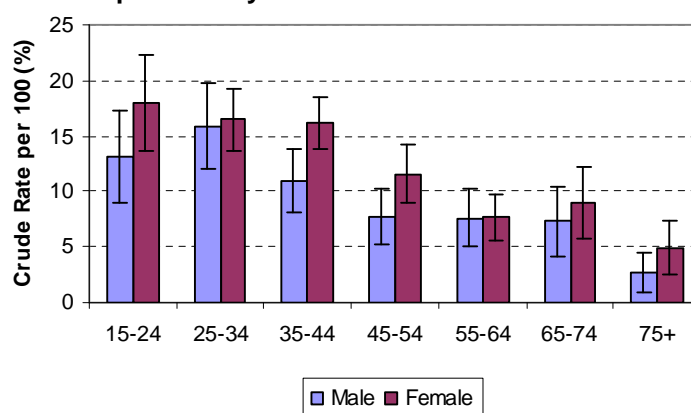
**Figure 83: Estimated number of visits to a GP per year, NZ, 2002/03**



Source: MOH, PHI NZ Health Survey 2002/2003

Nationally, approximately one in twelve adults aged 65 years and over stated they needed to see a GP in the last 12 months but did not see one. There is a tendency for the proportion of the population reporting unmet need to decrease with age (Figure 84)[36]. Common reasons for not seeing a GP when they needed to include cost, transport difficulties, not wanting to make a fuss or not being bothered or time scarcity [36]. The NZ Survey of Older People in 2000, indicated that between 7-13% of respondents reported postponing visits to the doctor or dentist because of costs.

**Figure 84: Adults who reported they needed to see a GP but did not see one, 2002/03**



Source: MOH, PHI NZ Health Survey 2002/2003; all New Zealand aged 15+

**Table 99: Proportion of total GP visits by age and gender, 2000.**

Age (Years)	% of total visits	
	Males	Females
<1	5.4	3.5
1-4	11.9	8.1
5-14	11.4	7.8
15-24	7.7	9.8
25-34	8.3	12
35-44	11.1	12.5
45-54	11.5	12.1
55-64	11.2	10.4
65-74	11	10.1
75+	10	13.2

Source: Adapted from Table 4.1 NatMedCa [92]

The National Primary Medical Care Survey (undertaken in 2000) provides some insight into primary care at a national level prior to the implementation of PHOs. This data is not available at DHB level.

People aged 65 years and over accounted for approximately 21-23% of total GP consultations at family GP practices in 2000 (Table 99).

The percentage distribution of visits by age group and gender as a ratio of the population is shown in Table 100. The consultation rate is highest at either extreme of the life course.

**Table 100: Ratio of visits to national population, by age and gender (log data), 2000**

Gender	All ages	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Male	0.86	1.96	0.60	0.48	0.52	0.62	0.75	1.06	1.45	2.00
Female	1.14	1.92	0.60	0.85	0.95	0.91	1.07	1.33	1.73	2.29

Source: Table 4.2 NatMedCa [92]

**Table 101: Age and gender specific rates (per 100 visits) of the most common causes**

Condition	Gender	All ages	Age groups									
			<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Respiratory	Male	28	45	45	41	27	27	25	19	17	21	19
	Female	22	31	44	38	22	17	20	19	18	18	15
Cardiovascular	Male	16	0.8	0.4	0.5	2	5	6	22	36	35	39
	Female	15	1	2	0.5	1	4	9	14	28	40	38
Nervous system/ sense organ	Male	14	17	28	17	10	11	13	9	10	13	10
	Female	14	19	26	14	10	9	14	14	13	13	13
Injury/poisoning	Male	14	3	6	12	25	22	18	17	12	11	10
	Female	11	3	7	14	9	10	11	9	14	12	14
Skin/subcutaneous	Male	11	11	9	10	20	11	9	11	8	13	12
	Female	11	17	15	14	9	9	10	7	12	15	
Musculoskeletal	Male	9	0.9	0.7	2	3	5	14	14	15	14	12
	Female	10	0.9	1	2	4	6	10	13	13	22	18
Mental	Male	7	0.9	0.9	7	9	10	13	10	7	7	7
	Female	9	0.9	2	2	5	11	12	13	9	8	10
Genitourinary	Male	4	3	3	3	0.8	3	3	3	6	8	8
	Female	10	0	4	4	13	15	16	17	7	7	8
Infectious	Male	7	6	12	14	11	13	6	4	4	2	3
	Female	7	12	11	13	13	7	7	6	4	4	2
Digestive	Male	7	10	7	4	6	9	6	8	5	7	13
	Female	7	5	5	5	7	8	7	8	9	10	8
Endocrine	Male	7	0.7	1	0.8	0.8	4	5	11	17	14	11
	Female	6	1	0.7	0.6	2	5	6	8	13	14	8
Neoplasms	Male	4	0	0	0.8	1	3	3	5	7	9	12
	Female	4	0.1	0.7	1	3	2	5	6	6	5	5

Source: Table 8.8 NatMedCa[92]

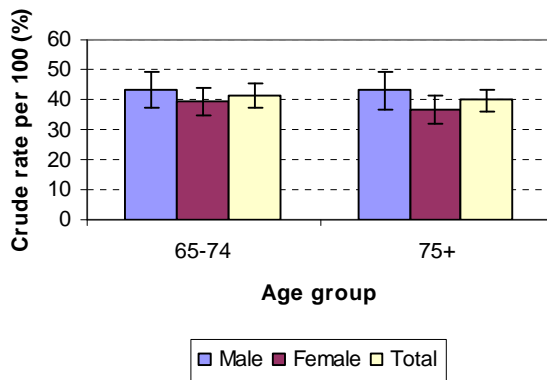
Table 101 shows the age and gender specific rates per 100 visits of problems most commonly presenting to primary care. Notably, consultations for cardiovascular disease, musculoskeletal disorders, neoplasms and male genitor-urinary conditions increase with age. The most common problems of the older population (age 65+) managed in primary care were cardiovascular (35-40 per 100 visits), respiratory (15-21 per 100 visits) and musculoskeletal (12-22 per 100 visits).

## 6.1.2 Nurses

One of the strengths of the PHO environment is the explicit multidisciplinary approach to health care. The expanding roles of primary care nursing continue to contribute significantly to caring for the older population in the community. At the time of the NZ Health Survey (2002/2003), approximately 40% of adults surveyed, aged 65 years and over, reported having seen a nurse separately as part of their GP consultation (

Figure 85) [36].

**Figure 85: GP consultations in which nurse was seen alone as part of consult, 2002/03**

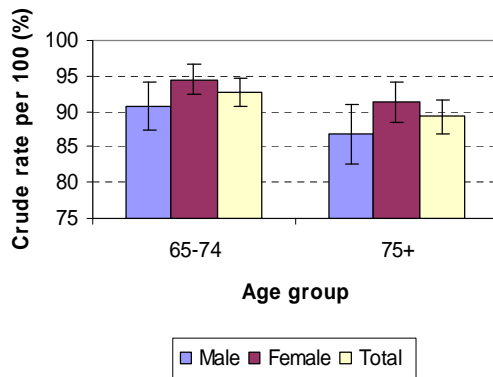


Source: MOH, PHI NZ Health Survey 2002/2003

### 6.1.3 Pharmacists

The NZ Health Survey indicated that a high proportion (~90%) of older adults had visited a pharmacy for health products or health information in the previous 12 months (Figure 86). Females were more likely to have been to a pharmacy in the last 12 months than males, but this was not statistically significant within age bands[36].

**Figure 86: Older adults seeing pharmacist or chemist in the last 12 months, 2002/03**

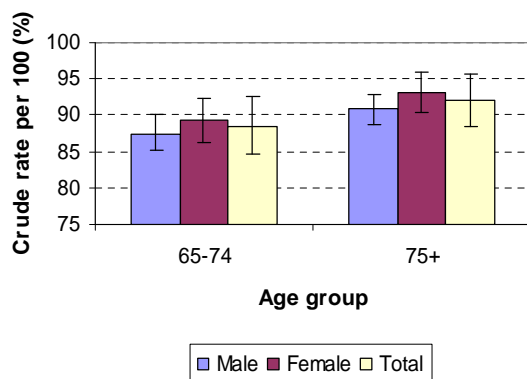


Source: MOH, PHI NZ Health Survey 2002/2003

### Prescriptions

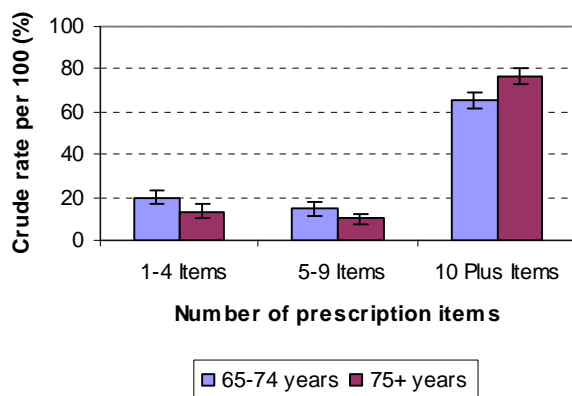
Between 85-95% of surveyed adults aged 65 years and over were estimated to have received a prescription in the preceding 12 months. In this age band the likelihood of having received a prescription was marginally higher for females; however this was not statistically significant. GPs were the most common source of prescriptions Figure 87 [36].

**Figure 87: Percentage of older adults who received a prescription in the last 12 months, 2002/03**



Amongst adults aged 65-74 years who had received a prescription in the previous 12 months, 20% had been prescribed 1 to 4 items, 14.5% 5 to 9 items and 65.5% 10 items or more. The proportion of those aged 75 and over prescribed 10 or more items (76.5%) was significantly higher than those aged 65-74 years (65.5%) Figure 88 [36].

**Figure 88: Number of items prescribed in the previous 12 months, by age, 2002/03**



Source: MOH, PHI NZ Health Survey 2002/2003

## 6.2 Hospital based services

### 6.2.1 Disability support services (DSS)

Disability support services of older people encompass the following services:

1. Assessment, treatment and rehabilitation services (AT&R)
2. Needs assessment and service co-ordination (NASC)
3. Home support services (personal care and household management)
4. Carer support and respite care
5. Environmental support (equipment, home and vehicle modifications)
6. Residential care (rest home facilities, dementia unit or continuing care hospital)
7. Information and advisory services

The pattern of utilisation of each of these services by the older population of CM is described below. In this section the focus is on hospital based services AT&R and NASC.

#### 6.2.1.1 Assessment, Treatment and Rehabilitation Services (AT&R)

Specialist Assessment, Treatment and Rehabilitation services provide a comprehensive and coordinated multi-disciplinary team approach to meet the complexity of need of older people. The structures of AT&R services differ across New Zealand DHBs making it problematic to compare DHB utilisation rates or expenditure. For example, Southern and Central Region DHBs include mental health services for older people within their specialist AT&R service expenditure, while those in Northern and Midland regions include these services as part of the mental health services[93].

Specialist inpatient Assessment Treatment and Rehabilitation (AT&R) services for older people in CM are provided in three locations:

1. Middlemore Hospital provides three wards, containing a combined total of 56 beds, for older people with sub-acute medical and surgical conditions. The Middlemore team operates outpatient clinics at Middlemore, Pukekohe, and Franklin Memorial Hospitals and at the Botany, Manukau Superclinics.

2. Franklin Memorial Hospital is situated in Waiuku in the Franklin TLA. There are 12 beds for continuing care and 6 for assessment, treatment and rehabilitation, or respite and palliative care.
3. Pukekohe Hospital has 30 beds, 26 for continuing care, and 4 for assessment treatment and rehabilitation, respite or palliative care. An outpatient Rehabilitation Unit provides physiotherapy and occupational therapy.

**Table 102: AT&R service hospitalisation rates by age, CMDHB residents, 2004**

Health related speciality DSS	Number of discharges				Rate per 100,000			
	65-74	75-84	85+	65+	65-74	75-84	85+	65+
Geriatric A, T & R (Active rehabilitation)	236	496	351	1083	11	40	96	29
Geriatric A, T & R (Intermittent Planned Programme)	19	27	11	57	1	2	3	2
Geriatric Residential Care (Hospital – long term)	5	9	14	28	0	1	4	1
Physical Disability A,T & R Sub-Series	4	13	2	19	0	1	1	1
DSS	264	546	378	1188	12	44	104	31
%	22%	46%	32%	100%				

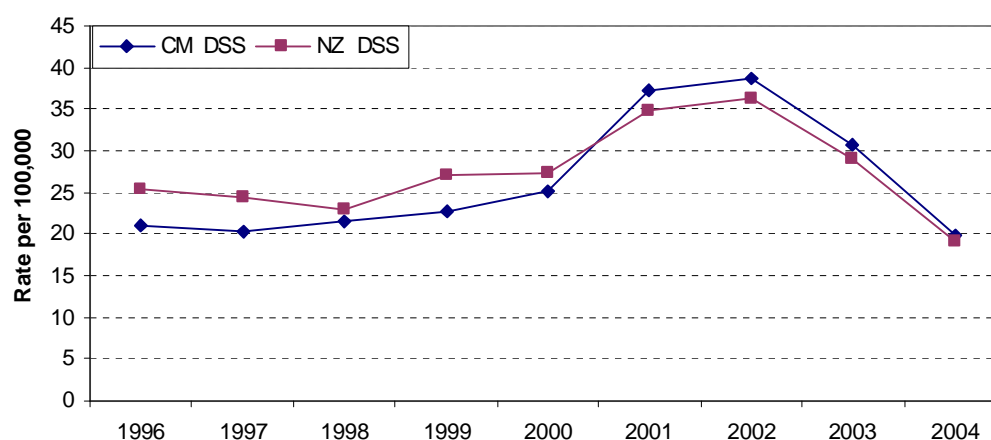
**Table 103: AT&R service bed days and ALOS by age, CMDHB residents, 2004**

Health related speciality DSS	Bed-days				Average length of stay			
	65-74	75-84	85+	65+	65-74	75-84	85+	65+
Geriatric A, T & R (Active rehabilitation)	3807	7365	5198	16370	16	15	15	15
Geriatric A, T & R (Intermittent Planned Programme)	249	341	119	709	13	13	11	12
Geriatric Residential Care (Hospital – long term)	1347	1181	3263	5791	269	131	233	207
Physical Disability A,T & R Sub-Series	184	567	59	810	46	44	30	43
DSS	5587	9454	8639	23680	21	17	23	20
%	24%	40%	36%	100%				

**Table 104: AT&R service hospitalisation rates by ethnicity, CMDHB, 2004**

Health related speciality DSS	No.				Rate per 100,000			
	Maori	Pacific	Other	Total	Maori	Pacific	Other	Total
Geriatric A, T & R (Active rehabilitation)	45	61	977	1083	24.1	17.7	30.0	28.6
Geriatric A, T & R (Intermittent Planned Programme)	8	8	41	57	4.3	2.3	1.3	1.5
Geriatric Residential Care (Hospital – Long term)	1	0	27	28	0.5	0.0	0.8	0.7
Physical Disability A,T & R Sub-Series	0	1	18	19	0.0	0.3	0.5	0.5
DSS	54	70	1064	1188	28.9	20.3	32.6	31.3
%	5%	6%	90%	100%				

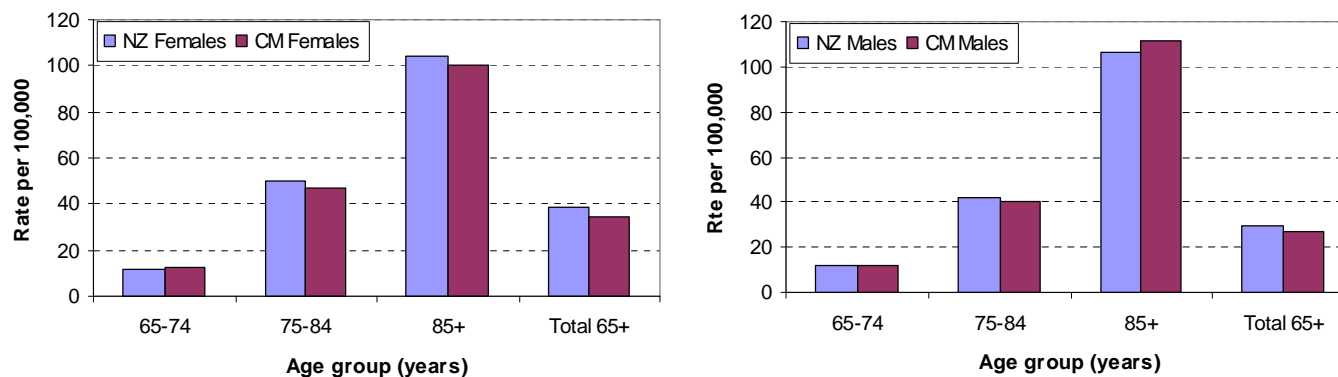
**Figure 89: AT&R hospitalisation rates, CM compared to NZ, 1996-2004**



**Table 105: AT&R hospitalisation rates by gender, CMDHB, 2004**

Health Related Speciality DSS	No.								Rate per 100,000							
	65-74		75-84		85+		Total 65+		65-74		75-84		85+		Total 65+	
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Geriatric A, T & R (Active rehabilitation)	127	109	306	190	239	112	672	411	11.1	10.4	42.9	36.0	94.5	100.9	31.9	24.4
Geriatric A, T & R (Intermittent Planned Programme)	10	9	13	14	5	6	28	29	0.9	0.9	1.8	2.7	2.0	5.4	1.3	1.7
Geriatric Residential Care (Hospital – Long term)	4	1	6	3	9	5	19	9	0.3	0.1	0.8	0.6	3.6	4.5	0.9	0.5
Physical Disability A,T & R Sub-Series	1	3	8	4	1	1	10	8	0.1	0.3	1.1	0.8	0.4	0.9	0.5	0.5
Physical Disability A, T & R (Active rehabilitation)	0	0	0	1	0	0	0	1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1
DSS	142	122	334	212	254	124	730	458	12.4	11.7	46.8	40.2	100.4	111.7	34.6	27.2
% gender -specific no. aged 65+	19%	27%	46%	46%	35%	27%	100%	100%								

**Figure 90: AT&R hospitalisation rates by gender for CM and NZ, 2004**



### 6.2.1.2 Needs Assessment and Service Coordination (NASC)

The Needs Assessment and Service Coordination (NASC) undertakes assessments of the level of support needs of the older person. Support services can then be coordinated to assist the older person to 'age in place' if this is appropriate. Such services include home based support, carer support and respite care, and environmental support to facilitate. If the level of support needs exceed the capacity of community based support services, the individual will be authorised access to residential care.

In the 12 months to June 2005 there were on average 6447 active NASC clients in CM. This equates to 17% of the population aged 65 years and over accessing NASC. There were an average 344 new referrals to NASC per month during this period, with higher rates of referral during the winter months.

The leading source of referrals to NASC is from acute hospital services, followed by GP, family and other health professionals.

### 6.2.1.3 Mental Health Services for Older People (MHSOP)

Mental Health Service for Older People (MHSOP) provides an integrated community and in-patient mental health service for the older population of CM.

**Table 106: Mental health service for older people (MHSOP) hospitalisations, CM, 2004**

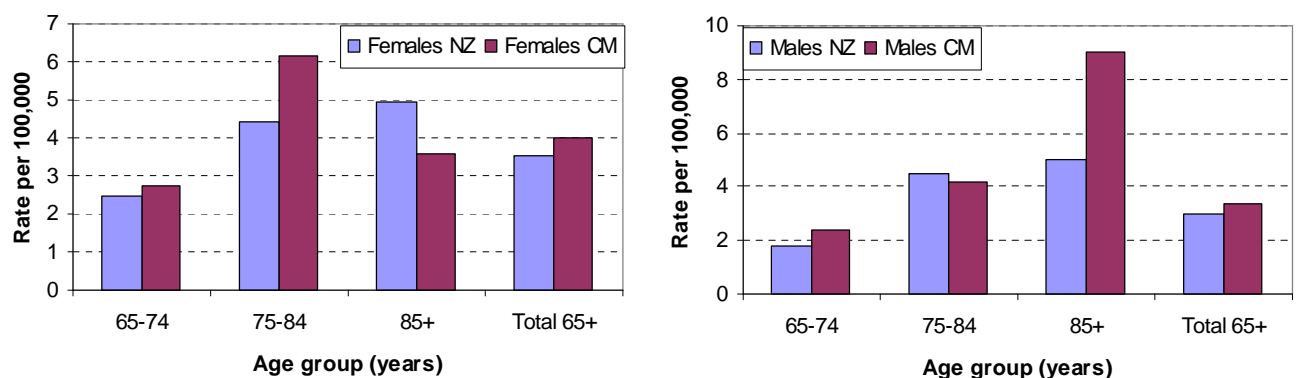
Mental Health Services for Older People #	Number				Rate per 100,000			
	65-74	75-84	85+	65+	65-74	75-84	85+	65+
A, T & R (active rehabilitation)	1	1	1	3	0.0	0.1	0.3	0.1
A, T & R (continuing care)	52	61	18	131	2.4	4.9	4.9	3.5
Residential care (hospital – Long term)	3	4	0	7	0.1	0.3	0.0	0.2
Mental health %	56	66	19	141	2.6	5.3	5.2	3.7
	40%	47%	13%	100%				

#also known as psycho-geriatrics

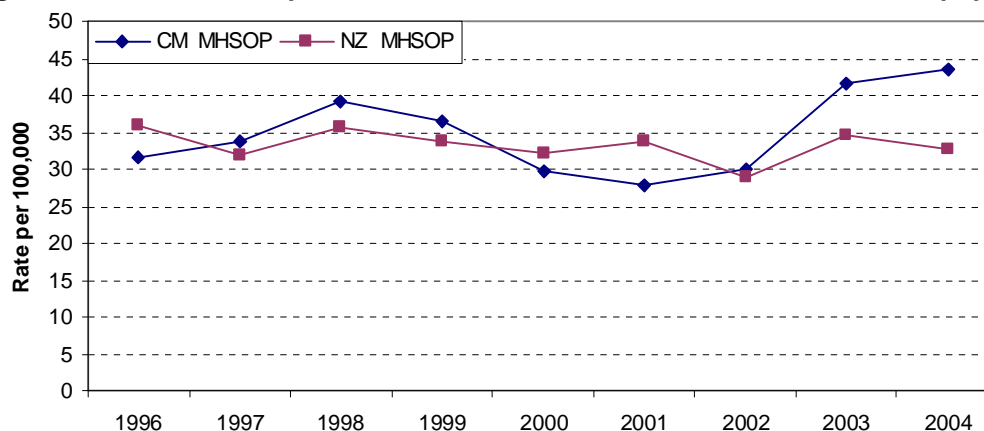
**Table 107: Mental health services for older people bed-days and ALOS, CM 2004**

Mental Health Services for Older People	Bed-days				ALOS			
	65-74	75-84	85+	65+	65-74	75-84	85+	65+
A, T & R (Active rehabilitation)	42	50	40	132	42	50	40	44
A, T & R (Continuing care)	1599	1892	352	3843	31	31	20	29
Residential care (hospital – long term)	1095	1068	0	2163	365	267	0	309
Mental health	2736	3010	392	6138	49	46	21	44
	45%	49%	6%	100%				

**Figure 91: Mental Health Services for Older People hospitalisations, CM and NZ, 2004**



**Figure 92: Trends in hospitalisations to mental health services for the older population**



## 6.2.2 Personal health

### 6.2.2.1 Adult medicine

Counties Manukau DHB provides the following medical specialities locally: cardiology, clinical haematology, endocrinology, gastroenterology and hepatology, infections diseases, internal (general) medicine, neurology, palliative care, renal, respiratory and rheumatology. Oncology, complex neurology, transplant medicine and clinical genetics services are provided by Auckland District Health Board for CM residents.

The population aged 65 years and over comprise approximately 12% of the adult population aged 15+ years. The older population account for approximately 35% of all adult medicine discharges, but for approximately 50% of all bed days in 2004. There is a clear increase in the rate of discharges from combined adult medicine specialities with age (from 62 per 1000 for the 15-64 age groups to 388 per 1000 for those aged 85 years and over). The ALOS associated with combined medical speciality discharges in the over 65 year age sub-groups range from 4.1-4.3 days and exceed that of those aged 15-64 years (3.5 days) (Table 108).

Within the medical speciality service, General medicine has the highest rate of discharges for adults of all ages. For the 65-74 year old population the highest rates of medical sub-speciality discharges are seen for general medicine, followed by cardiology, renal medicine, haematology, gastroenterology, oncology and respiratory. The highest ALOS for this age group was for palliative care (18.6 days in 2004), followed by rheumatology, respiratory and renal medicine (Table 108).

In the 75-84 aged cohort, the top sub-speciality discharge rates were for general medicine, cardiology, haematology, gastroenterology and then renal medicine. The longest ALOS for this age-group was for respiratory medicine, followed by palliative care, neurology, renal medicine and oncology (Table 108).

In the 85+ population, general medicine, cardiology, gastroenterology and haematology and palliative care have the highest rates of discharges. The longest ALOS for adults of this age are seen in neurology, palliative care, haematology services (Table 108).

**Table 108: Number and rate of hospital discharges, and ALOS by medical sub-speciality and age group, CMDHB residents, 2004**

Medical Speciality	Number				Rate per 1000				Bed days				ALOS			
	15-64	65-74	75-84	85+	15-64	65-74	75-84	85+	15-64	65-74	75-84	85+	15-64	65-74	75-84	85+
General medicine	13203	2853	3163	1348	47.6	130.5	254.9	370.3	23274	9519	12500	5685	1.8	3.3	4.0	4.2
Cardiology	1438	534	280	27	5.2	24.4	22.6	7.4	3485	1434	1009	98	2.4	2.7	3.6	3.6
Dermatology	72	33	30	3	0.3	1.5	2.4	0.8	205	95	49	0	2.9	2.9	1.6	0.0
Endocrinology	9	0	0	0	0.0	0.0	0.0	0.0	24	0	0	0	2.7	0.0	0.0	0.0
Gastroenterology	285	74	90	16	1.0	3.4	7.3	4.4	811	137	206	67	2.9	1.9	2.3	4.2
Haematology	451	193	113	6	1.6	8.8	9.1	1.6	1885	585	501	38	4.2	3.0	4.4	6.3
Infectious disease	19	0	0	0	0.1	0.0	0.0	0.0	50	0	0	0	2.6	0.0	0.0	0.0
Neurology	87	44	6	1	0.3	2.0	0.5	0.3	333	39	43	12	3.8	0.9	7.2	12.0
Oncology	284	67	20	3	1.0	3.1	1.6	0.8	1524	320	93	9	5.4	4.8	4.7	3.0
Renal medicine	742	203	85	3	2.7	9.3	6.8	0.8	2863	1035	413	28	3.9	5.1	4.9	9.3
Respiratory	324	50	13	2	1.2	2.3	1.0	0.5	841	315	147	4	2.6	6.3	11.3	2.0
Rheumatology	181	12	8	0	0.7	0.5	0.6	0.0	303	78	21	0	1.7	6.5	2.6	0.0
Palliative care	10	11	9	4	0.0	0.5	0.7	1.1	92	205	78	33	9.2	18.6	8.7	8.3
Adult medicine	17105	4074	3817	1413	61.7	186.3	307.6	388.2	35690	13762	15060	5974	3.5	4.3	4.2	4.1
% Discharges	65%	15%	14%	5%												
% Bed days									51%	20%	21%	8%				

Source: NMDS, 2004

# Acute and elective admissions combined

Table 109 presents the discharge rates and ALOS for CM and NZ population aged 65 years and over, from medical sub-specialities during 2004. The CM older population had higher discharge rates from general medicine, gastroenterology, and haematology, and twice the discharge rate for renal medicine than NZ as a whole. CM had an apparent lower rate of discharges from cardiology and respiratory medicine which would be unexpected given the higher burden of disease in the CM population. However much cardiology and respiratory care is carried out under the general medicine service in Middlemore Hospital. CM has a lower average length of stay for medical services relative to NZ as a whole.

**Table 109: Hospitalisation rate and ALOS, CM and NZ medical sub-specialities, 2004**

Age 65+	Rate per 1000		ALOS	
	CM	NZ	CM	NZ
Speciality/Sub-specialty				
General medicine	194.2	161.9	3.8	4.6
Cardiology	22.2	30.0	3.0	3.5
Dermatology	1.7	0.9	2.2	1.1
Endocrinology	0.0	0.3	0.0	2.8
Gastroenterology	4.7	3.3	2.3	2.7
Haematology	8.2	3.1	3.6	4.2
Infectious disease	0.0	0.2	0.0	7.3
Neurology	1.3	1.7	1.8	4.6
Oncology	2.4	4.8	4.7	5.5
Renal medicine	7.7	3.6	5.1	5.6
Respiratory	1.7	7.3	7.2	5.7
Rheumatology	0.5	0.7	5.0	3.1
Palliative care	0.6	1.2	13.2	9.0
Adult Medicine	245.4	218.9	4.0	4.6

### 6.2.2.2 Adult surgery

Counties Manukau residents are able to access most surgical specialities locally. The key exceptions are cardiac/cardio-thoracic surgery, neurosurgery and transplant surgery which Auckland District Health Board provides for the greater Auckland region (including Waitemata and CM DHBs).

In CM for 2004 older adults made up 18% of acute and 38% of non-acute adults surgical speciality discharges (average of 26% of combined acute and non-acute surgical services). For both acute and non-acute surgical speciality services combined, 37% of the total adult bed-days in 2004 were taken up by the 65 years and over population.

General surgery dominates the acute surgical discharge rates in the older population, followed by orthopaedics. There is a more variable pattern of discharge rates by older population age groups, with increasing rates of surgical discharges by age for general, ENT, plastics and burns and orthopaedics, but decreasing surgical service discharge rates amongst the oldest cohort (those aged 85+ years) for cardiothoracic, neurosurgery, ophthalmology, vascular and dental. It is reasonable to deduce that this partially reflects the increasing influence of multiple co-morbidities in the older population increasing the risks over possible benefits likely to be achieved through surgical intervention.

**Table 110: Hospitalisations by surgical sub-speciality for acute surgery in 2004**

Acute surgical specialities	Number of discharges				Rate/1000 population				ALOS			
	15-64	65-74	75-84	85+	15-64	65-74	75-84	85+	15-64	65-74	75-84	85+
General surgery	3721	605	496	227	13.4	27.7	40.0	62.4	3.8	6.7	7.1	7.1
Cardiothoracic	171	67	35	4	0.6	3.1	2.8	1.1	10.5	10.1	10.5	8.8
ENT	286	22	22	9	1.0	1.0	1.8	2.5	2.2	3.6	5.4	4.3
Gynaecology	2989	19	12	4	10.8	0.9	1.0	1.1	1.5	3.5	4.6	4.0
Neurosurgery	177	25	14	2	0.6	1.1	1.1	0.5	8.2	9.9	12.7	9.5
Ophthalmology	174	32	23	5	0.6	1.5	1.9	1.4	2.2	0.8	1.4	0.4
Orthopaedics	2394	276	268	171	8.6	12.6	21.6	47.0	3.9	7.9	9.8	10.5
Plastics/burns	1133	42	55	28	4.1	1.9	4.4	7.7	3.4	5.7	9.7	8.4
Urology	362	77	67	19	1.3	3.5	5.4	5.2	2.0	3.2	4.4	4.1
Vascular	14	8	3	0	0.1	0.4	0.2	0.0	5.5	2.8	7.3	0.0
Dental	160	6	3	0	0.6	0.3	0.2	0.0	2.6	4.2	4.7	0.0
Total acute surgery	11581	1179	998	469	41.8	53.9	80.4	128.8	4.2	5.3	7.0	5.2
% Discharges	81%	8%	7%	3%								

For combined non-acute surgical service discharges the highest rates occur in the 75-84 year age group (102 per 1000), followed by 85+ (99 per 1000), 65-74 (70 per 1000) and then 15-64 (18 per 1000). The older cohorts have relatively high rates of discharges from plastics/burns. This may reflect high rates of skin cancers and possibly burns (given overall lower socioeconomic groups) in the CM population. Note that the ALOS of 19.0 for adults aged 85+ for ENT services is based only on a small number of head and neck patients.

**Table 111: Hospitalisations by surgical sub-speciality for non-acute surgery in 2004**

Non-acute surgical specialities	Number				Rate				ALOS			
	15-64	65-74	75-84	85+	15-64	65-74	75-84	85+	15-64	65-74	75-84	85+
General surgery	1153	375	260	54	4.2	17.1	21.0	14.8	2.0	3.2	4.4	3.9
Cardiothoracic	38	19	3	0	0.1	0.9	0.2	0.0	6.3	10.7	6.3	0.0
ENT	591	47	28	5	2.1	2.1	2.3	1.4	0.9	2.5	1.6	19.0
Gynaecology	1305	88	34	5	4.7	4.0	2.7	1.4	1.2	2.7	2.7	3.0
Neurosurgery	60	19	5	0	0.2	0.9	0.4	0.0	5.2	6.4	5.2	0.0
Ophthalmology	461	269	254	74	1.7	12.3	20.5	20.3	0.1	0.1	0.0	0.0
Orthopaedics	519	282	195	26	1.9	12.9	15.7	7.1	3.8	5.3	6.5	8.1
Plastics/burns	534	308	402	185	1.9	14.1	32.4	50.8	1.2	0.3	0.7	1.2
Urology	224	108	81	12	0.8	4.9	6.5	3.3	2.2	2.6	2.4	2.1
Vascular	3	9	2	0	0.0	0.4	0.2	0.0	5.7	7.0	5.0	0.0
Dental	158	2	2	1	0.6	0.1	0.2	0.3	0.3	0.5	1.5	0.0
Total non-acute surgery	5046	1526	1266	362	18.2	69.8	102.0	99.5	2.6	3.7	3.3	3.4
% Discharges	62%	19%	15%	4%								

Table 112 benchmarks the CM surgical speciality discharge rate for the population aged 65 years and over against the NZ average. The high rate of plastics/burns discharges compared to the NZ average reflects the presence of a specialised plastics/burns unit in CMDHB with areas such as hand surgery being covered here rather than under orthopaedics.

While it is important to be mindful that this comparison is based on only one year of data and that the numbers may be small for CM, it appears that CM ALOS is marginally longer for general surgery, ENT, neurosurgery, orthopaedics, and plastics/burns(acute only). The numbers and rates in CM for vascular and dental make it difficult to interpret the findings.

**Table 112: Surgical speciality discharges, 65 years and over, CM and NZ 2004**

Surgical speciality	Rate per 1000				ALOS			
	Acute		Non-acute		Acute		Non-acute	
	CM	NZ	CM	NZ	CM	NZ	CM	NZ
General surgery	35.0	34.3	18.2	23.0	6.9	5.8	3.7	2.8
Cardiothoracic	2.8	2.1	0.6	1.1	10.2	14.9	10.1	9.6
ENT	1.4	1.7	2.1	3.2	4.4	3.5	3.2	1.5
Gynaecology	0.9	0.9	3.3	3.2	3.9	4.3	2.7	3.0
Neurosurgery	1.1	1.1	0.6	0.7	10.9	9.5	6.2	4.8
Ophthalmology	1.6	1.6	15.7	16.8	1.0	1.9	0.1	0.1
Orthopaedics	18.9	20.7	13.3	13.6	9.2	7.8	5.9	5.3
Plastics/burns	3.3	1.8	23.6	7.5	8.1	6.3	0.7	1.2
Urology	4.3	4.4	5.3	7.1	3.8	3.2	2.5	2.2
Vascular	0.3	3.0	0.3	1.4	4.0	7.1	6.6	4.7
Dental	0.2	0.2	0.1	0.4	4.3	1.3	0.8	0.5
Total surgical services	69.8	71.8	83.2	77.9	66.7	65.5	42.4	35.5

### 6.2.2.3 Otago Spinal Rehabilitation Unit

The Otago Spinal Rehabilitation Unit is a regional service providing comprehensive care for people with spinal cord injury. Over the 4 year period spanning 2001-2004 there was a total of 33 admissions of CM adults aged 65 years and over, equating to an average of around 8 admissions per year (at an average rate of 21 per 100,000/year). The average absolute numbers are small and the age-specific rates similar (Table 113).

**Table 113: Spinal Rehabilitation Unit for CM aged 65 years and over, 2001-2004**

Spinal Unit	Average per year 2001-2004	
Age (years)	Discharges#	Rate per 100,000/yr#
65-74	5	23
75-84	3	24
85+	1	27
Total 65+	8*	21

\*averaged over 4 years and rounded, so do not equal sum

# excludes patients who are not normally resident in CM. Rates based on 2004 projected population.

### 6.2.2.4 Emergency care

Middlemore Hospital provides a full (level 6) admitting and emergency care (EC) service, operational for 24 hours a day, seven days a week, one of the busiest in New Zealand. The older population use emergency departments less frequently than the younger adults [35]. The following series of tables documents the number of presentations to EC for 2004, the number of individuals presenting and the number who were subsequently admitted to an inpatient bed (does not include ED presentation to other hospitals by CMDHB residents as this data is not readily available).

In 2004 there were 53,585 adult presentations to ED of which 23% (12,441) were for those aged 65 years and over. While the number of presentations in the younger adults exceed that of the older age group, a much higher proportion of the older age population present at EC each year (Table 114). For simplification the CMDHB population has been used as a denominator for the EC rates – most attendances are from CM residents.

**Table 114: Presentations to Middlemore EC for adults, 2004**

Age	No. of presentations to EC			Rate per 100 pop		
	Female	Male	Total	Female	Male	Total
15-64	20,809	20,335	41,144	14.7	15.0	14.8
65-74	2,541	2,669	5,210	22.2	25.6	23.8
75-84	2,772	2,276	5,048	38.9	43.1	40.7
85+	1,481	702	2,183	58.5	63.2	60.0
All 65+	6,794	5,647	12,441	32.2	33.6	32.8
All adults	27,603	25,982	53,585	17.0	17.0	17.0
% of EC load	25%	22%	23%			

In 2004, the absolute number of individuals aged 15-64 presenting to ED were 3-4 fold greater than those aged 65 years and over. However the age-specific rate of presentation per 100,000 population to EC increases markedly with age (11.7% those aged 15-64 years increasing to 39.6% of those aged 85+) (Table 115). Nearly a quarter of all 65+ CMDHB residents will visit EC in a given year.

**Table 115: Number of individuals presenting to Middlemore EC in 2004**

Age	Number			Rate per 100,000		
	Female	Male	Total	Female	Male	Total
15-64	15,929	16,385	32,314	11.3	12.1	11.7
65-74	1,802	1,790	3,592	15.8	17.1	16.4
75-84	1,838	1,436	3,274	25.8	27.2	26.4
85+	993	449	1,442	39.2	40.5	39.6
All 65+	4,633	3,675	8,308	24.8	23.9	24.4
All adults	20,562	20,060	40,622	12.6	13.1	12.9

For every 100 presentations (encounters) to EC by a person aged 65 years and over, 68 were admitted to an inpatient ward (i.e. physically admitted to a ward, not just in EC greater than 3 hours). The proportion of EC presentations resulting in inpatient admission increased with age (Table 116). The proportion of EC presentations resulting in inpatient that were GP referrals is similar to self-referrals (not shown).

**Table 116: Number of older adults admitted to inpatient wards from EC in 2004**

Age	Number of admits from EC			Rate per 100 encounters		
	Female	Male	Total	Female	Male	Total
65-74	1,582	1,711	3,293	62	64	63
75-84	1,919	1,638	3,557	69	72	70
85+	1,112	552	1,664	75	79	76
Total 65+	4,613	3,901	8,514	68	69	68

Middlemore Hospital EC

### 6.2.2.5 Outpatient services

Outpatient services in CMDHB are mainly located at the Manukau Superclinic, with support from Botany Superclinic, and a number of smaller venues around Counties Manukau.

In 2004, there were 53,309 outpatient discharges to CMDHB facilities for CM adults aged 65 years and over. This total comprises first appointments, follow-up appointments and also community laboratory tests and EC follow ups. First appointments account for 10,211 (19%) of these discharges, of which 9816 (96%) attended and 395 (3.9%) did not attend (DNA). This is a low rate of non-attendance. Follow-up outpatient appointments are the bulk of the total outpatient discharges (79%) and have a similar 4.1% DNA rate. The proportion of those with first outpatient appointments who DNA was marginally higher for the 65-74 age group in comparison with the over 75 age group (4.4% vs. 3.3% respectively). This pattern holds for

follow-up appointment DNAs with 4.5% of those aged 65-74 and 3.7% of the 75+ age group not attending.

The highest proportion of DNAs for both age groups and types of outpatient event occurred amongst Mangere and Otara residents. While there are transport challenges for the more rural Franklin region it does not show in the DNA rates – it is those from the poorer suburbs who tend to find it difficult to attend.

**Table 117: Outpatient appointments, CMDHB provider, ages 65+ by DHB ward, 2004**

Age (years)	CMDHB Ward	Outpatient type							Grand total
		Labs/ED	First			Follow-up			
			No Attended	No DNA	% DNA	No Attended	No DNA	% DNA	
65-74	Howick/Pakuranga	71	884	26	2.8%	2990	101	3.3%	4072
	Beachlands/Maraetai	5	57		0.0%	447	11	2.4%	520
	Otara	46	292	24	7.6%	2097	151	6.7%	2610
	Mangere	93	564	61	9.7%	3579	224	5.9%	4521
	Papatoetoe	83	795	31	3.7%	4244	147	3.3%	5300
	Manukau/Manurewa	79	932	40	4.1%	3845	225	5.5%	5121
	Takanini/Papakura	80	1015	41	3.9%	3956	151	3.7%	5243
	Franklin	32	728	19	2.5%	2426	92	3.6%	3297
75+	Howick/Pakuranga	103	1037	27	2.5%	3786	123	3.1%	5076
	Beachlands/Maraetai	5	47	1	2.1%	243	5	2.0%	301
	Otara	22	99	15	13.2%	410	45	9.9%	591
	Mangere	57	332	21	6.0%	1145	87	7.1%	1642
	Papatoetoe	102	739	25	3.2%	2678	111	4.0%	3655
	Manukau/Manurewa	76	709	20	2.7%	2536	114	4.3%	3455
	Takanini/Papakura	91	932	27	2.8%	3754	88	2.3%	4892
	Franklin	31	654	17	2.5%	2243	68	2.9%	3013
65-74+ total		489	5267	242	4.4%	23584	1102	4.5%	30684
75+ total		487	4549	153	3.2%	16795	641	3.7%	22625
Grand total		976	9816	395	3.9%	40379	1743	4.1%	53309

CMDHB residents only, first and fu o/p at CMDHB provider, 2004

## 6.3 Private hospitals/other health care

It is difficult to access data on private and other care services such as dental, optometry, podiatry, and physiotherapy services, however it is recognised that they play an important role in the care of the older population. Other health professionals' particular skills and expertise are important to people's ongoing assessment, treatment and rehabilitation.

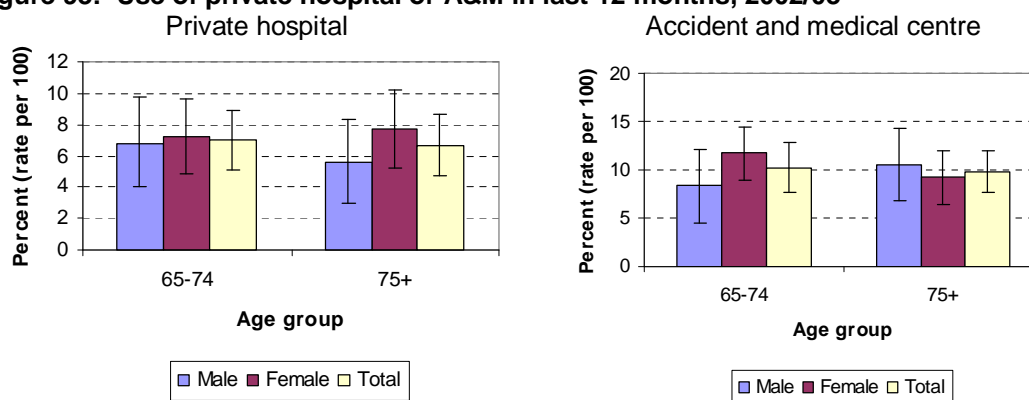
National level data is available on utilisation of private hospitals and other health professionals derived from the NZ National Health Survey, 2002/2003.

### 6.3.1 Private hospitals/ A&M clinics

Around 7% of older adults surveyed were estimated to have used a private hospital in the previous 12 months (

Figure 93) [94].

**Figure 93: Use of private hospital or A&M in last 12 months, 2002/03**



Source: MOH, PHI NZ Health Survey 2002/2003

Of the survey responders aged 65-74 years who had used a private hospital in the previous 12 months, an estimated 39% were admitted as inpatients and 42% admitted for day treatment (defined as a stay of more than 3 hours). The corresponding proportions of those aged 75 years or more did not significantly differ (36% inpatients, 51% day treatment). These figures should be interpreted with caution as they are based on small samples [94].

The NZ Health Survey estimates that close to 10% of older adults accessed a private after hours accident and medical (A&M) in the preceding 12 months. No significant differences were evident with increasing age or between genders (**Error! Reference source not found.**).

### 6.3.2 Other health care providers

Other health professionals including physiotherapists, occupational therapists, dieticians, optometrists, dentists, audiologists and podiatrists provide critical services that enable older people to recover, or maintain functions for daily living in the community. Approximately 60% of all older adults were estimated to have accessed these other types of health care providers in the preceding 12 months (NZ Health Survey 2002/03)[94]. The most commonly attended of these health care providers were optometrists/opticians, dentists, and physiotherapists (Table 118) [36, 94].

**Table 118: Other health care provider visited in last 12 months, NZ, 2002/2003**

Health care provider seen in last 12 months	Rate per 100	
	65-74	75+
Physiotherapist	13.3	11.4
Dietician	3.7	2.6
Dentist/dental therapist	37.3	26.8
Optician or optometrist	29.1	34.4
Social worker/psychologist/counsellor	2.1	2.5
Occupational therapist	1.1	1.6
Other	1.7	3

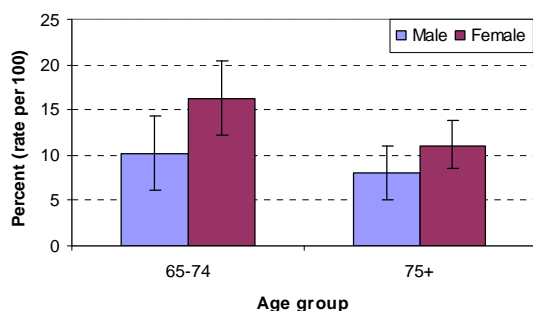
Source: MOH, PHI NZ Health Survey 2002/2003

### Telephone help lines

The National Health Survey estimated 13.5% of adults aged 65-74 years and 9.8% of those 75+ years accessed a telephone helpline in the preceding 12 months. The percentage accessing telephone help lines was marginally greater for females in both age bands; however the difference is not statistically significant (

Figure 94).

**Figure 94: Use of a telephone helpline in preceding 12 months, age 65+, NZ, 2002/03**



Source: MOH, PHI NZ Health Survey 2002/2003

## 6.4 Community Based Services

### 6.4.1 Disability Support Services

Counties Manukau specific data on utilisation of these services is presented below where data is available.

#### 6.4.1.1 Home support services (personal care, household management)

The NASC assessment, in consultation with the individual and their family/whānau/caregivers, determines an agreed number of visits per week to assist with personal cares (e.g. showering) or other household management tasks (e.g. grocery shopping, laundry).

CMDHB Home Health Care (HHC) provides a range of community based services such as nursing services, short term home assistance, 'meals on wheels', ostomy and continence supplies, assessment for equipment and housing alterations, and community allied health services (occupational therapy/physiotherapy).

Home support services are structured (funded/organised) differently around the country, making it difficult to make meaningful comparisons. Based on HealthPac HIN data, in 2004 3,190 CM adults, aged 65 years and over received assistance in their homes with household management. The proportion of the population requiring home-based services increases dramatically with age. Around 2.5 adults in every 100 aged 65-74 received home-base household management services during 2004, increasing to 30% aged 85 years or over. Similarly, the number of individuals requiring home based assistance with personal cares increased exponentially with age (Table 119 &

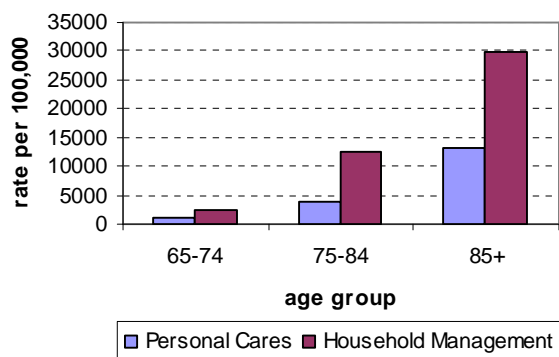
Figure 95).

**Table 119: DHB-funded long-term home based support, CM residents, 2004**

Home support	Number of individuals				Rate per 100		
	65-74	75-84	85+	All 65+	65-74	75-84	85+
Household management	549	1559	1082	3190	2.5	12.6	29.7
Personal cares	209	491	484	1184	1.0	4.0	13.3

Source: HealthPac HIN data, CM residents funded by DHB

**Figure 95: Home-based care, CM residents, 2004**



Source: HealthPac HIN data, DHB-funded care

The NDSA examined client numbers and service hours for home based support services for the Auckland Metro DHBs using data for the 2004/2005 financial year (Table 120 & Table 121). The same trend of increasing rates with age is evident. Of note, average hours per client per fortnight of household management were similar across all older age groups (Table 120). However, the average hours per client of personal cares decreased with age (Table 121) – presumably the more dependent at these ages are already in residential care.

**Table 120: Home-based household management, CM residents, 2004/2005**

Home based household management – 2004/2005					
Age	No. of clients	Rate per 100	Total hours	Mean hours per client per year	Mean hours per client per fortnight
65-74	447	2.0	38,775	86.7	3.3
75-84	1363	11.0	111,933	82.1	3.2
85+	867	23.8	70,778	81.6	3.1

Source: Adapted from report: *NDSA Home-based support services Auckland Metro DHBS. Client and volume changes actual 2005 to forecast 2006*

**Table 121: Home-based personal cares in CM, 2004/2005**

Home based personal care 2004/2005 Financial Year					
Age	No. of Clients	Rate per 100	Total hours	Mean hours per client per year	Mean hours per client per fortnight
65-74	164	0.7	43,728	267	10.3
75-84	364	2.9	73,021	201	7.7
85+	330	9.1	59,082	179	6.9

Source: Adapted from report: *NDSA Home-based support services Auckland Metro DHBS. Client and volume changes actual 2005 to forecast 2006*

#### 6.4.1.2 Carer support and respite care

Carer support entails a range of non-residential services to provide full-time unpaid caregivers some reprieve. These services span from provision of a relief carer in the home to facility based day care. The NASC service determines the number of days a client and their caregiver are eligible to use this support. The use of carer support increases with client age and with the highest rates of access for those caring for people aged 85 years and over. In 2004, it is estimated that 850 CM adults, aged 65 years and over, received carer support, equating to a rate of 2242 per 100,000 or 2.2%. Disaggregations of these figures by age group are presented below in

Table 122. On average, clients received around 20 hours of carer support per year.

**Table 122: Individuals receiving carer support , CM, 2004**

Carer support (2004)	Age Group		
	65-74	75-84	85+
No. of individuals accessing carer support	205	356	289
Total no. of client hours billed	4384	7879	6342
Average no. of hours billed per client	21	22	22
Rate per 100,000 population	937	2869	7940
Percentage of population	0.9	2.9	7.9

Source: HealthPac HIN data, based on CM population receiving Northern Carer Support

The numbers of older population in CM accessing dementia day-care are small but the rates increase exponentially with age (Table 123), paralleling the estimated prevalence of dementia (Table 84).

**Table 123: Individuals attending dementia day-care services, CM, 2004**

Dementia Day-care	Age Group		
	65-74	75-84	85+
Number of individuals	24	66	40
Total number of client hours billed	1485	3513	2331
Average number of hours billed per client/year	62	53	58
Rate per 100,000 population	110	532	1099

Source: HealthPac HIN data, based on CM population attending dementia day-care

There are an increasing number of people with higher complexity needs remaining at home. This will necessitate an increase in the provision of respite care and carer support to assist with delaying their entry into residential care facilities.

#### 6.4.1.3 Environmental support (equipment, home and vehicle modifications)

Environmental support is available to all ages, with those over 65 utilising approximately 50% of total expenditure (around 1% of total DSS spending). Key components of environmental support include: modifications to housing or vehicles; grants to assist with purchasing vehicles; assessments for aids to assist with mobility e.g. standing or walking equipment, wheelchairs; hearing and vision and other communication appliances. The funding responsibilities for DSS environmental support contracts have not been devolved to DHBs are held by the Ministry of Health Disability Services Directorate. Utilisation figures were not available.

The two key providers operating in CM to provide environmental support are Mobility Solutions and AccessAble. It is anticipated that with the increasing number of higher complexity people remaining at home, there will be a need for an increase in the provision of environmental support to assist with delaying their entry into residential care facilities.

#### 6.4.1.4 Residential care – rest homes/private long-term residential hospitals

While the majority of older adults reside in their own homes throughout their life, a minority will move to permanently reside in residential care facilities such as rest homes and long-stay hospitals. It is estimated that approximately 5.8% of all New Zealanders aged 65 years and over reside permanently in residential care – with around 4.2% in rest homes and 1.5% in long-stay hospitals[2].

A national survey indicates that the proportion of the older population in some form of supported housing increases with age. They found 6-7% of New Zealanders aged 65-84 live in retirement villages with this increasing to 12.5% of amongst those aged 85% or more[35].

During 2004, an estimated 0.4% of adults aged 65-74, 2.3% aged 75-84, and 13% of those 85 years and above were in CM funded level 2 rest home care for some or all of the year. Similar proportions of the population by age were in long-stay age-related hospital care (Table 124). The numbers and rates of those funded for long-stay mental health residential care are

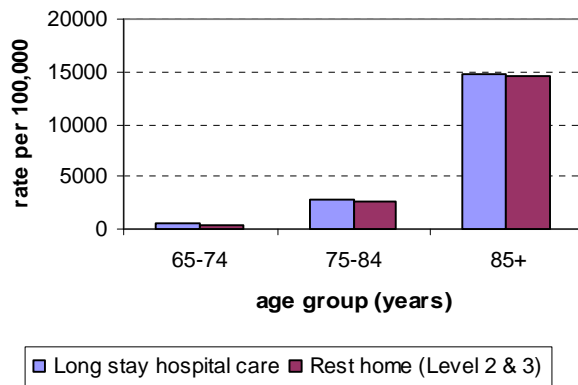
quite small. Consistent with national trends, the proportion of the CM older population requiring residential care increases considerably with age, particularly amongst those aged 85 years and over.

**Table 124: Older CM population in DHB funded residential care, 2004**

Residential care (CM funded)	Number of individuals			Rate per 100,000 population		
	65-74	75-84	85+	65-74	75-84	85+
Long stay hospital care - age related	135	346	535	617	2788	14698
Long stay residential care - mental health	1	7	1	5	56	27
Rest Home Level 2	81	281	486	370	2264	13352
Rest Home Level 3 (dementia)	10	47	45	46	379	1236

Source: HealthPac HIN data, 2004, fully funded and top-ups

**Figure 96: DHB funded residential care, CM 2004**



Source: HealthPac HIN data

In mid-2005, the NDSA reported a snapshot of residential care for the Northern DHBs. Table 125 and

Table 126 summarise this snapshot of the residential care facilities and bed capacities in CM. At this time there were 35 level 2 rest home facilities in CM region containing 1091 contracted beds and 117 non-contracted beds. Of the level 2 rest-home beds, it was estimated that 53% of the CMDHB funded beds and 4% of the MOH funded beds were utilised, leaving 44% unoccupied capacity. Of the 35 rest homes, 10 are in Howick-Pakuranga, 11 in Papakura and Franklin, 1 in Manukau and 2 in Mangere. Five facilities provide 82 certified rest home level 3 beds (dementia) for CM residents. Of the DHB contracted beds, 73 of the 80 beds (91%) were occupied. Long-term private hospital beds for age-related conditions number 746 of which there was a residual capacity of 17% at the time of the report. There are no private long-term residential mental health beds for those aged 65 years and over in CM region. As such, individuals requiring these services are assisted within the wider metro-Auckland DHBs.

**Table 125: Residential care in Counties Manukau (2005): facilities and beds**

<b>Residential Care in CM</b>	<b>No. of Facilities</b>	<b>No. of beds HealthCert</b>	<b>No. contracted beds</b>	<b>No. non-contracted beds</b>
Long-term private hospital - age related	18	746	732	14
Long-term residential care - mental health	0	0	0	0
Rest Home Level 2	35	1208	1091	117
Rest Home Level 3 (dementia)	5	82	80	2

Source: NDSA Census @ 30 June 2005

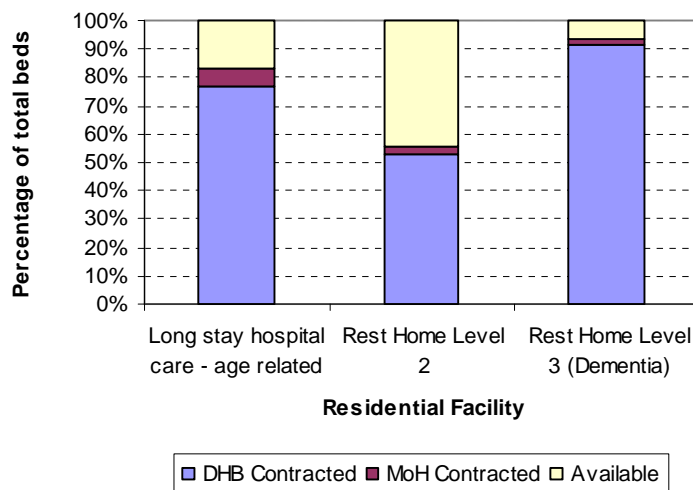
**Table 126: Residential care in Counties Manukau, bed capacity 2005**

Residential Care in CM	Utilised Beds			Capacity		
	DHB	MOH*	Private Payers#	DHB contract	MoH * contract	Available
Long stay hospital care - age related	561	45	NA	77%	6%	17%
Long stay residential care - mental health	0	0	NA	0%	0%	0%
Rest Home Level 2	582	39	NA	53%	4%	43%
Rest Home Level 3 (ementia)	73	2	NA	91%	3%	6%

Source: NDSA Census @ 30 June 2005

- MOH beds include contracts for those less than 65 years of age
- # includes ACC and private payers

**Figure 97: Snapshot of residential bed capacity in CM (June 2005)**



Source: NDSA Census @ 30 June 2005

Data limitations do not permit analysis of residential care by ethnicity. The MOH (1997) notes that increasing diversity of Māori and Pacific communities may result in adoption of a broader range of patterns of care for elders in addition to traditional patterns care in whanau/community settings. As noted in the MOH report, an Auckland based study by Richmond et al (1988-1993) found that urban Māori and Pakeha occupied residential care beds (rest home/long-stay hospital) at rates of 69 per 1000 population and Pacific at around half this (cited in [Ministry of Health, 1997 #16]). In addition, changing norms may mean family members who historically would have been the carers are now in paid employment outside the home, increasing need for alternate residential support for elders.

The demographic ageing of the population and increase in absolute numbers of those aged 85+ years will place considerable demand on residential care. This necessitates intersectoral collaboration to ensure a full range and staffing of forms of residential care including rest homes, long-stay hospitals and supported housing.

### 6.4.2 Community Based NGOs

There a number of community-based non-government organisations (NGOs) that provide services for the older CM population. Counties Manukau DHB contracts a number of these community based agencies to provide services to the CM older population.

Information and Advisory services are provided through contracts with Age Concern, the Alzheimer's Society, Treasure Older Adult (TOA), and the Pacific Information Advisory Service (PIAS)

Carer Support Services are available to caregivers who care for those aged 65 years and over. The maximum annual allocation of hours is determined via NASC assessment.

Day care services are provided by Elmwood, Howick Baptist, Alzheimers Society and Te Oranga and aim to support older people and their families/whānau to age positively in the community.

In addition, a range of non-governmental organisations provide community based services that assist older adults in CM. These include:

Advocacy groups such as Age Concern, Grey Power, Probus and the Returned Services Association.

Cause specific support groups for example: Alzheimer's Society, Royal Foundation for the Blind, Hearing Association, Parkinson's Society, Stroke Foundation, and the Arthritis Foundation.

Telephone support services operating in CM include St John's Caring Caller, and Homeline a daily volunteer call service supporting older people.

Volunteer drivers operate in the region, particularly Franklin District, providing transport for people to attend medical services.

### **Stroke Foundation**

The Stroke Foundation has a Northern Region Office based in Milford, North Shore. There are five field officers, one of which covers the South Auckland region. The field officers visit hospital and homes and provide support to stroke families and can provide information on stroke-related problems and available community services and Stroke Clubs. The Stroke Foundation coordinates stroke clubs for people who had had a stroke, and spouse support groups. It promotes stroke related research, advocates for those who have experienced a stroke and their caregivers and provides information on stroke.

### **Royal NZ Foundation of the Blind**

The Royal NZ Foundation of the Blind is a nationwide membership-based organisation that provides resources and support to around 11,500 registered members. The following CM specific anonymised data was provided by the Royal NZ Foundation of the Blind.

There are approximately 490 members in CM aged 64 and over who are sight-impaired such that their visual acuity does not exceed 6/24 in the better eye with corrective lenses or their visual field is less than 20 degrees in the widest diameter. Of the 490 CM members, 71% are aged 80 years and over. 89% of those over 64 years identify as non-Māori, non-Pacific, 4% as Māori and 3% as Pacific.

### **Age Concern**

Age Concern is a national charitable, non-profit organisation. There is a local CM office which receives partial DHB funding for:

- (1) information resources and programmes covering issues affecting older people, their families and carers,
- (2) Accredited Visiting Service.

The Accredited Visiting Service provides companionship and support for socially isolated and lonely older people. Additional services provided by the local office include Total Mobility Vouchers and wheelchair service, National newspaper distribution, and an Age Concern Elder Abuse and Neglect Service. The Age Concern Elder Abuse and Neglect Prevention Services are part-funded by the Department of Child, Youth and Family to provide awareness and education prevention about elder abuse and neglect and coordinate responses to cases of abuse and/or neglect. There are also local health promotion workshops which focus on physical activity. Field trips are run approximately 3 times a month.

## 6.5 Summary

An integral part of maximising health gain for our older population is their access to timely, appropriate, acceptable and quality health services that will allow them to maintain their ageing in place in the community for as long as possible.

Foremost interactions with the health service for the older population are with primary care providers such as GPs, practice nurses, pharmacists. In addition there are a number of community based DHB funded or non-governmental organisations that provide valuable information, advice, advocacy and support to the older population on a range of general or disease-specific issues.

A proportion of these require referral to secondary care services, resulting in admission to hospital, management through outpatient services or long-term support through disability support services.

The NASC service is a pivotal access point for a range of community based disability support services and subsidised residential care. The service assesses the needs of the older person, liaises with family/whānau and coordinates indicated services.

Older populations are high users of personal care and disability support services. There is good continuity between different services within the sector but an ongoing need to improve chronic care management and those who regularly frequent services. There is a requirement to support ethnic specific services and ensure mainstream responsiveness and accountability to equitable access and health outcomes.

The demographic ageing of the population and increase in absolute numbers of those aged 85+ years will place considerable demand on community support services. There is a need to model service utilisation for groups aged less than 65 years to assist planning.

Changing societal norms and expectations may increasingly reduce the capacity and availability of traditional informal carers such as family members/children. This necessitates intersectoral collaboration to ensure a full range of forms of residential care including rest homes, long-stay hospitals and supported housing and appropriate staffing. Workforce development and maintenance pose considerable challenges for residential care and home-based support services. Changing service utilisation patterns by ethnicity will be expected in the future.

## 7 Conclusion

The profile provided illustrates the diversity of the current cohort of people aged 65 years and over. In general the current CM older population has life expectancy and mortality rates similar to overall NZ figures, but slightly below those for Auckland and Waitemata. Hospitalisation rates tend to be higher, particularly for IHD and diabetes.

It is anticipated that the population aged 65 years and over, will live longer and be increasingly characterised by ongoing independence, continued participation in work, home and community, and health for a longer proportion of their older age than their predecessors. The increasing numbers of older people aged 85 years and over, increasing numbers of Asian, Maori and Pacific peoples, the high proportion of women in older age and likely increase in demand on health services are principal policy considerations for CM.

There is considerable scope for health gain and this data will help to inform the local HOP strategy to best meet the current and projected CM older population health

## 8 Appendices

### 8.1 Appendix 1: Data sources and limitations

The accurate and timely measurement of population health indicators is fundamental for informing health service funding and planning[95, 96].

There are a number of general data limitations common in this health needs assessment highlighted below:

#### **Reliance on use of routinely collected secondary data.**

This is routinely collected data that was not purposely collected for this use and thus analysis is constrained to the variables available.

#### **Measurement of non-fatal health outcomes**

Data on non-fatal health outcomes are limited to serial population surveys or using hospitalisation rates as a proxy for morbidity. Surveys are based on a small sample, from which estimates are made for the New Zealand population[36]. The surveys provide valuable information on outcomes that are not readily available through routinely collected health data. However, the sample sizes of these surveys limit subgroup analysis at both national and DHB level for the 65 and over age group. Moreover in NZ these surveys have been ad hoc and infrequent making it difficult to get a picture of trends. The New Zealand Health Monitor, a 10 year cycle of health surveys seeks to address these issues [95].

As the health and disability surveys information is derived from self-report, it is potentially subject to varying norms and expectations over time, and both temporal and geographic variance in access and quality of health services[36].

In this health needs analysis hospitalisation rates have been used as a proxy for morbidity. The limitations of this approach have been detailed in the body of the report, namely that rates based on health service contact are an imperfect proxy for disease prevalence as they are influenced by other factors such as disease severity and access criteria or barriers.

#### **Primary care data**

The information available on primary care is limited. While PHO enrolment data is reported centrally, the details of the GP interaction (often held electronically within GP Patient Management Systems) are not available centrally or analysed in a systematic way.

#### **Community service provision**

Data on disability support services (DSS) has not been easily accessible from administrative databases such as SCID or the HealthPac Financial HIN database. This access is starting to improve.

Information from private health providers is difficult to obtain.

#### **Timeliness and accuracy of data**

Timeliness of the data has been less of an issue than had been expected, once methods for getting access to DSS data were established. No attempt has been made to verify the accuracy of these data, though as they are based on financial transactions, which are audited, they are expected to be quite robust.

## Type and sources of health related data used in this needs assessment

Data	Source of data	Considerations
<b>Demographic</b>		
<i>Current and projected:</i>		
Age - Numbers	Stats NZ - Census 2001	
Gender	Stats NZ - Census 2001	
Ethnicity	Stats NZ - Census 2001	
Languages spoken	Stats NZ - Census 2001	
Income/SES (NZDep01)	Stats NZ - Census 2001	
Employment/Unpaid Work	Stats NZ - Census 2001	Data not routinely available at DHB/age level
Residential sitn/home ownership	Stats NZ - Census 2001	Data not routinely available at DHB/age level
Access to vehicle	Stats NZ - Census 2001	Data not routinely available at DHB/age level
Access to telephone/internet	Stats NZ - Census 2001	Data not routinely available at DHB/age level
<b>Health Status</b>		
<i>Life Expectancy</i>	NZHIS	Numbers often too small to give meaningful comparisons in subgroup analyses
<i>Mortality (*by age, gender, ethnicity, SES)</i>	NZHIS	Numbers often too small to give meaningful comparisons in subgroup analyses
<i>Morbidity (*by age, gender, ethnicity, SES)</i>	NMDS	Numbers often too small to give meaningful comparisons in subgroup analyses
Hospitalisation - numbers of separations, discharge rates	NMDS	
Average length of stay (ALOS)	NMDS	
Top 10 DRGs	NMDS	
Frequent admitters	NMDS	
Potentially avoidable hospitalisations	NMDS	
Unplanned readmissions	NMDS	
<i>Specific Chronic Conditions</i>		
Cardiovascular Disease (IHD, Hypertension)	NMDS/NZ Health Survey	Numbers often too small to give meaningful comparisons in subgroup analyses
Cerebrovascular Disease (Stroke)	NMDS/NZ Health Survey	
Diabetes	NMDS/NZ Health Survey	
Respiratory Disease (COPD, Pneumonia and influenza)	NMDS/NZ Health Survey	
Osteoarthritis/Rheumatoid Arthritis	NMDS/NZ Health Survey	
Injuries/Falls/Hip fracture	NMDS/ACC	
Cancer	NZHIS/NMDS/NZ Cancer Registry	
Dementia & Memory Loss	NMDS/NZ Health Survey	
Hearing		
Vision		
Continence		
Oral Health		
<i>Quality of Life</i>	NZ Health Survey 2002/3/ Nthrn Region Health Survey	
<i>Disability</i>	NZ Disability Survey/Stats NZ	
Prevalence	NZ Disability Survey/Stats NZ	
Estimated number/level of severity	NZ Disability Survey/Stats NZ	
Type	NZ Disability Survey/Stats NZ	

Trends	NZ Disability Survey/Stats NZ	
<b>Issues Impacting on Health</b>		
Transport	LTSA	Data not readily available by demographic variables of interest e.g. ethnicity, age-groups
Housing	Housing NZ/TLAs	
SES - as above	Stats NZ	
Immunisation - influenza	NDSA	One-off report
Risk factors: smoking, fruit/veg intake, physical activity etc)	NZ Health Survey 2002/3	
<b>Services</b>		
<b>Primary Care/Community Support</b>		
PHO/GP	HealthPac	Quarterly reports on region to CMDHB
Pharmaceuticals	Pharmhouse/ NZ Health Survey 2002/3	
Laboratory		
Dental	NZ Health Survey 2002/3	
Medical/Surgical (e.g. Southern Cross/Etna, Private Consultants)	NZ Health Survey 2002/3	
Optometry	NZ Health Survey 2002/3	
Physio	NZ Health Survey 2002/3	
NGOs: Age Concern/Grey Power/Alzheimer/Stroke Foundation/Royal Foundation for the Blind	Websites, direct contact with individual organisation	Data not readily available by demographic variables of interest e.g. ethnicity, age-groups
Mobility solutions		One off request
Access Able		One off request
District Nursing		One off request
Health Promotion	CMDHB Manager: individual Health Promotion plans submitted to DHB	One off request
<i>DSS- Community support services</i>		Date of birth, ethnicity, fields not included. Required data match with NHI to get additional fields. Dataset records every contact with the service in form that it is not possible to determine exactly when services utilised.
HBSS - Personal cares/Household management	HealthPac: HIN dataset	As for HBSS
Rest Homes/Private Hospitals	HealthPac: HIN dataset	As for HBSS
Carer support/respite care	HealthPac: HIN dataset	As for HBSS
<b>Secondary/Tertiary</b>		Numbers often too small to give meaningful comparisons in subgroup analyses
Hospital (Inpatient/Daypatient, Outpatient/EC) :		
Volumes/rates	NMDS	
ALOS	NMDS	
PAH	NMDS	
NASC	SCID database	Report parameters limited for grouped data. Many duplicates. Difficult to interpret when service utilised within reported timeframe.
CCM	CMDHB Manager	One off request
<b>Other</b>		
ACC	ACC	One off request

Note: NZHIS and NMDS data was sourced through Dean Papa, CMDHB.

## 8.2 Appendix 2: Disease or procedure codes

Disease or procedure codes used by section		Comments
<b>Mortality/Morbidity</b>	<b>Diagnosis codes ICD-10#</b>	
All cause mortality	All causes	
All cause cancer (malignant neoplasms)	C00-C97	
Cancer of the oesophagus	C15	
Stomach cancer	C16	
Colorectal cancer	C18-21	
Cancer of liver and intrahepatic bile ducts	C22	
Pancreatic cancer	C25	
Lung/bronchus cancer	C34	
Skin cancer	C43-44	
Breast cancer		
Uterine cancer	C53-55	
Ovarian cancer	C56	
Prostate cancer	C61	
Urinary tract cancer	C64-68	
Brain cancer	C71	
Ill-defined, secondary & unspecified cancer	C76-80	
Lymphoid, haematopoietic cancer	C81-96	
Cancer of unknown/uncertain behaviour	D37-D45	
Diabetes mellitus	E10-E14	
Organic mental disorders	F00-F09	
Dementia	F00-F03, G30	
Extrapyramidal movement disorders	G20-G26	
Other degenerative nervous system diseases	G30-G32	
Cataracts	H25-H26	
Influenza and pneumonia	J10-J18	
CORD	J40-J44, J47	
Chronic rheumatic heart disease	I05-I09	
Hypertensive diseases	I10-I15	
Ischaemic heart disease	I20-I25	
Other forms of heart disease	I30-I52	
Cardiac Arrhythmias	I48, I49, R00	
CHF	I50, J81	
Cerebrovascular diseases	I60-I69	
Subarachnoid haemorrhage	I60	
Stroke	I61, I63-I66	This grouping used to be consistent with CMDHB Health Indicators 2005
Other non traumatic intracranial haemorrhage	I62	
Other cerebrovascular diseases	I67	
Sequelae of cerebrovascular disease	I69	
Diseases of the arteries/arterioles/capillaries	I70-I79	
Disease of the liver	K70-K77	
Arthropathies	M00-M25	
Osteopathies & chondropathies	M80-M94	
Disorders of the kidney/urinary system	N00-N39	
Renal Failure	N17-N19	
Pain in throat and chest	R07	
Syncope and collapse	R55	
Injury (mortality)	S00-T98	
Injury (hospitalisations)	V01-Y98	
Transport related injury	V01-V99	
Falls	W00-W19	
Exposure to mechanical forces	W20-W64	
Unintentional injury	V00-X49	
Therapeutic substances	Y40-Y59	
Surgical/medical procedures causing abnormal reaction	Y83-Y84	

# Source: International Statistical Classification of Diseases and Related Health Problems. 10<sup>th</sup> Revision. Version for 2003. <http://www3.who.int/icd/vol1htm2003/navi.htm>

PAH categories*	Diagnosis codes ICD-10	Condition description
Gastroenteritis	A01-A0999	Diarrhoeal diseases, digestive symptoms
Tuberculosis	A150-A19999,B900-B90999,P370-P37099	Tuberculosis
Other infections	A23-A2399,A26-A2699,A28-A2899,A32-A3299,A38-A3899, B50-B5499,J020-J02099,J030-J03099,P23-P2399,P351-P35199, P352-P35299,P358-P35899,P359-P35999,P36-P3699,P371-P37999	Brucellosis, other zoonoses, strep throat, erysipelas, malaria, congenital infections
HIV/AIDS	B20-B2499	HIV/AIDS
Immunisation-preventable	A413-A41399,A492-A49299,B9631-B963199,B9639-B963999,G000-G00099,B05-B0599, B06-B0699, B26-B2699, P350-P35099, A37-A3799, A33-A3699,A80-A8099	Diphtheria, whooping cough, tetanus, polio, measles, mumps, Hib, rubella
Hepatitis & liver cancer	B15-B1999,C22-C2299,P353-P35399	Hepatitis A, B, C,D,E primary liver cancer
Sexually-transmitted diseases	A50-A5899,A638-A63899,A64-A6499,I980-I98099,M023-M02399, M031-M03199,M730-M73099,M731-M73199,N290-N29099,N302-N30299, N341-N34199,N70-N7799,O00-O0099	Syphilis, gonorrhoea + other STDs, PID, ectopic pregnancy
Skin cancers	C00-C0099,C43-C4499	Lip, melanoma, other skin cancer
Oral cancers	C01-C0699,C09-C1099	Malig neoplasm mouth, pharynx, larynx
Colo-rectal cancer	C18-C2199	Colo-rectal cancer
Lung cancer	C33-C3499	Malig neoplasm trachea, bronchus, lung
Breast cancer	C50-C5099	Breast cancer
Cervical cancer	C53-C5399	Cervical cancer
Thyroid disease	E00-E0599,E890-E89099	Goitre, thyrotoxicosis, hypothyroidism
Diabetes	E10-E1499,E162-E16299	Diabetes, hypoglycaemia
Nutrition	D50-D5399,E40-E4699,E50-E6499,M833-M83399,P923-P92399	Nutritional deficits incl anaemia
Dehydration	E86-E8699,E870-E87099	Hypernatraemia, dehydration/volume depletion
Alcohol-related conditions	F10-F1099,I426-I42699,K290-K29099,K292-K29299, K70-K7099	psychosis, alcoholism, cardiac, gastric or liver damage due to alcohol
Epilepsy	G40-G4199,R560-R56099,R568-R56899	Epilepsy, convulsions
ENT infections	H65-H6899,H70-H7099,J01-J0199,J028-J02999,J038-J03999	Otitis media & mastoiditis, sinusitis, tonsillitis, pharyngitis
Rheumatic fever/ heart disease	I00-I0999	Acute rheumatic fever, heart disease
Hypertensive disease	I10-I1599,I674-I67499	Hypertensive disease, hypokalaemia
Ischaemic heart disease	I21,I22,I25,I240,I241,I248,I249	Myocardial infarction, atherosclerosis, chronic IHD
Angina	I20-I2099,R071-R07499	Angina, chest pain
Congestive heart failure	I50-I5099,J81-J8199	Congestive heart failure, acute pulmonary oedema
Stroke	I61-I6199,I63-I669	Intracerebral haemorrhage or occlusion
Respiratory infections	J21-J2199, A481-A48199,J13-J1899, J00-J0099,J06-J0699,J10-J1199,J20-J2099	Common cold & URTI, acute bronchitis, pneumonia, influenza
CORD	J40-J4499,J47-J4799	Acute and chronic bronchitis, emphysema, bronchiectasis
Asthma	J45-J4699	Asthma
Dental conditions	K00-K0699	Dental conditions
Peptic ulcer	K25-K2899	Gastric & duodenal ulcers
Ruptured appendix	K350-K35199	Ruptured appendix
Obstructed hernia	K400-K40199,K403-K40499,K410-K41199,K413-K41499,K420-K42199, K430-K43199,K440-K44199,K450-K45199, K460-K46199	Obstructed or gangrenous inguinal or other hernia
Kidney/urinary infection	N10-N1099,N12-N1299,N136-N13699,N151-N15199,N390-N39099	Pyelonephritis, urinary infections
Cellulitis	A46-A46999,H000-H00099,H010-H01099,H050-H05099,J340-J34099, K122-K12299,L01-L0499,L08-L0899,L980-L98099	Skin infections - carbuncles, abscesses, impetigo, pilonidal cyst
Gangrene	R02-R0299	Gangrene

\*Source: Conditions included in PAH as listed in Jackson, G & Tobias, M. Potentially Avoidable hospitalisations in New Zealand, 1989-98. Australian and NZ J Public Health 2001;25 (3):212-22. Updated for ICD-10 from Jackson G, Palmer C, Lindsay A, Pearce J. Counties Manukau Health Profile. Counties Manukau District Health Board. May 2001.

<b>Surgical indicators*</b>	<b>Procedure codes</b>
Knee replacement	Procedure codes 4951800,4951900,4952100,4952101,4952102,4952103,4952400,4952401,4952700,4953000,4953001,4953300,4953400,4955400
Hip replacements	Procedure codes 4931800,4931900,4932400,4932700,4933000,4933300,4934500
Coronary artery bypass grafts	Procedure codes 3849700,3849701,3849702,3849703,3849704,3849705,3849706,3849707,3850000,3850001,3850002,3850003,3850004,3850300,3850301,3850302,3850303,3850304,3863700,9020100,9020101,9020102,9020103
Angioplasties	Procedure codes 360 excl 3530400,3530500,3531000,3531001,3531002

<b>Health speciality code\$\$</b>	
<b>Specific medical/geriatric hospital</b>	
Age-related disability geriatric A, T & R sub-series	D00
Geriatric A, T & R :active rehabilitation	D01
Geriatric A, T & R: continuing care	D02
Geriatric A, T & R: intermittent planned programme	D03
Geriatric A, T & R: respite/unplanned	D04
Age-related disability geriatric residential care sub-series	D10
Geriatric residential care: hospital long term	D11
Geriatric residential care: hospital short term/respite	D12
Psycho-geriatric residential care: hospital long-term	D31
Psycho-geriatric residential care: hospital respite	D32

\$\$ Source: NZHIS Health Speciality code table <http://www.nzhis.govt.nz/documentation/adf96/adf96specialtytable.html> downloaded Aug 2005

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