

APPENDIX 2

THE HEALTH AND INDEPENDENCE OF OLDER CANTABRIANS

Prepared by Torfrida Wainwright, South Island Shared Service Agency Ltd for Canterbury District Health Board

First version November 2004, updated September 2005

CONTENTS

Executive Summary	Page
The Ageing Population	5
Size of the older population	5
Older people in rural areas	6
Ethnicity	6
Gender differences	7
Living Arrangements	7
Living alone	7
Care-giving and voluntary work	8
Residential care	9
Retirement villages and supportive housing	10
Financial security	10
Paid work and income levels	10
Home ownership	11
Life Expectancy and Death Rates	12
Life expectancy	12
Expected years of independent life	12
Death rates	12
Care at the end of life	13
Avoidable deaths	13
Health and Illness	15
Keeping fit and healthy	15
Avoidable hospital admissions	16
Chronic and disabling diseases - inequalities in prevalence	17
Heart disease and high blood pressure	19
Stroke	20
Diabetes	20
Arthritis and joint replacement	21
Falls and hip fracture	21
Chronic respiratory disease, pneumonia and influenza	22
Cancer	22
Memory loss, dementia and delirium	23
Depression and suicide	24
Elder Abuse	24
Impaired vision and blindness	25
Continence	25
Disability	26
Prevalence of disability	26
Types of disability	27
Need for services	28
Unpaid Carers	29
Trends in the rate of disability	29
Use of Services	31
Impact of an ageing population on the need for services	31
Primary health care	32
Hospital specialist services	32
Specialist assessment, treatment and rehabilitation (AT&R) services for older people	33
Specialist mental health services	34
Community nursing, rehabilitation, intermediate care and short-term home support	34
Home-based and residential support services	36

Acknowledgements

This paper was prepared with help from Michael Taylor, Melita McKinlay, Petra Radnavadivel and other SISSAL staff, and Gill Coe of the Canterbury DHB Planning and Funding team. Thanks also to Professor John Campbell who commented on the first version of the paper. All mistakes and omissions are the responsibility of the author.

INTRODUCTION

This report summarises some of the major pressures on health and disability support services for older people in coming decades, in terms of demographic changes and trends in the prevalence of various health problems.

The review is intended to aid Canterbury District Health Board in planning and allocating funding among services for older people. It covers a wide range of complex topics very cursorily and the reader is referred to the source documents for more detail.

The term 'Southern Region' refers to all South Island DHB areas excluding Nelson Marlborough. It is used wherever data has been available only for this geographic area. Where the term 'South Island' is used, it refers to all South Island DHB areas, including Nelson Marlborough.

Unless otherwise stated, the term 'older people' refers to people aged 65 years or more.

KEY MESSAGES

More but healthier older people - the number of people in the 'young old' 65-74 year age group will rise fastest in the next 20 years, as baby boomers reach retirement age. However this generation is on average fitter and healthier than older people have been in the past. People's need for services is not related so much to their age per se as to chronic illness and disability and to the last year of life.

The impact of the 75+ year age group comes later - the biggest impact on health and particularly disability support services will come in 15 years time when the baby boomers reach their mid-70s, an age when people's use of hospital services peaks and their need for disability support services steadily increases.

Finding diverse ways of supporting one another - the vast majority of older people live at home until they die. Smaller and more mobile families mean fewer older people will be able to rely on their children as nearby carers. As the greater diversity of family types and ethnic groups in our society flows into older age groups, they are likely to develop innovative living arrangements for themselves. The challenge for DHBs will be how to support these fairly and ensure that people don't slip through the protective net of social support.

A growing group of chronically ill/disabled - although most 'young old' people are healthy, a minority have chronic illnesses or disability and use health services more than average. This group has often experienced social and economic hardship from middle age (e.g. job loss and/or separation). They may develop illness and disability in late middle age and enter older age with fewer supports, such as a mortgage-free home or nearby family.

Maori and Pacific health - Māori and Pacific people are disproportionately represented in the low-income group with chronic illness described above. In contrast to the rest of the older population, life expectancy for older Maori and Pacific people did not increase during the 1980s and 1990s and the disparity in health between older Maori/Pacific and non-Maori/non-Pacific has widened during that time.

Access to effective primary care is critical - the rising life expectancy of older people over recent decades, particularly among men in higher income groups, shows what can be done with lifestyle changes (e.g. stopping smoking) and effective primary care (e.g. hypertension medication, flu vaccination, diabetic eye checks). The challenge for DHBs is to ensure that these are taken up by other groups, particularly low income people, Māori and Pacific people. This would enable DHBs to reverse the rise in avoidable hospital admissions which has occurred since the late 1980s.

Keeping physically and socially active is critical - keeping physically fit and active can reduce the likelihood or slow the progression of a number of illnesses common to older people, such as diabetes, osteoarthritis, cardiovascular and respiratory disease and hip fractures or other falls-related injuries. Keeping socially active is protective of people's mental as well as physical health.

Helping older people stay independent - a wide range of community services enable older people to stay active and independent. These range from active rehabilitation programmes to help people regain health and functioning after illness or injury, to long-term disability support services such as home help, special equipment or meals on wheels, and joint initiatives with local councils and other agencies for supportive housing, transport and befriending schemes.

Growing need for disability support services - nearly half of all people aged 75 years or over need some help to remain independent, with arthritis being the most common cause of disability. A very small minority need residential care in the last years of their life. It appears likely that the rate of severe disability in the older population may lessen but that the rate of mild or moderate disability may increase in future years. The ageing of the population in itself means a rising need for support services as the actual number of people with disabling conditions such as arthritis, impaired vision, stroke and dementia increases.

Making the most cost-effective use of resources - the increasing need for long-term support services is expected to be the major cost on the health system in coming decades. It is therefore crucial that DHBs put adequate resources into interventions that help people regain and maintain their ability to function and remain independent, and reduce the necessity for ongoing disability support services.

Extending the holistic palliative care approach to all those dying - over 80% of deaths in any year are of people aged 65+ years. The holistic palliative care approach to dying that has been pioneered by the hospice movement mostly for cancer patients could be taken up more fully in other settings, such as general hospitals and residential care facilities.

Important service areas for development include:

- **Physical activity and falls prevention programmes** - physical activity is an important way of staying fit and healthy, and falls prevention programmes are effective in reducing hospital admissions, disability and deaths from hip fracture and other injury for older people at high risk.
- **Specialist services for older people** - these are effective in assessing, treating and rehabilitating older people with complex health problems, so as to reduce their need for hospital or long-term residential care. Specialist geriatric services play a crucial role in providing support and advice for primary care, general hospital wards, community agencies and residential facilities,
- **Access to effective primary care** - the history of the past decades shows the importance of effective primary health care (e.g. early diagnosis and treatment) in preventing and reducing the impact of illness and disability among older people. The health gains made by the majority of the population need to be extended to those at greatest risk of ill-health and disability.
- **'One-Stop-Shop' needs assessment and service coordination** - older people should be able to get easily all the health and disability support services they need, with good communication among all the workers involved, including GPs, needs assessors, district nurses, home care agencies, hospital staff, mental health services and voluntary organisations
- **Community-based support services** - such as home support, carer support and respite care, district nursing, community allied health and equipment services are important in reducing the need for hospital admission, long hospital stays and long-term residential care. These services need to be well coordinated and have a strong rehabilitation focus.
- **Stroke rehabilitation services** - these are effective in restoring functioning as fully as possible and reducing the need for ongoing disability support services.
- **Dementia services** - more rehabilitation-focussed specialist dementia services, as well as effective carer support, will be increasingly needed as the population ages.

THE AGEING POPULATION

Size of the Older Population

In 2001 the 57,222 Cantabrians aged 65 years or more made up 13% of the total resident Canterbury population. Of these, the 6,321 people aged 85 years or more made up 1.5% of the population. Canterbury has a slightly higher proportion of older people compared to the national average (Table 1/ Table 4). The rural dormitory area around Christchurch city (Selwyn and Waimakiriri) is noticeably younger than average, while Ashburton is relatively older.

People in the 'young-old' group of 65-74 years make up the largest component of the older population, reflecting the post-war baby boom generation.

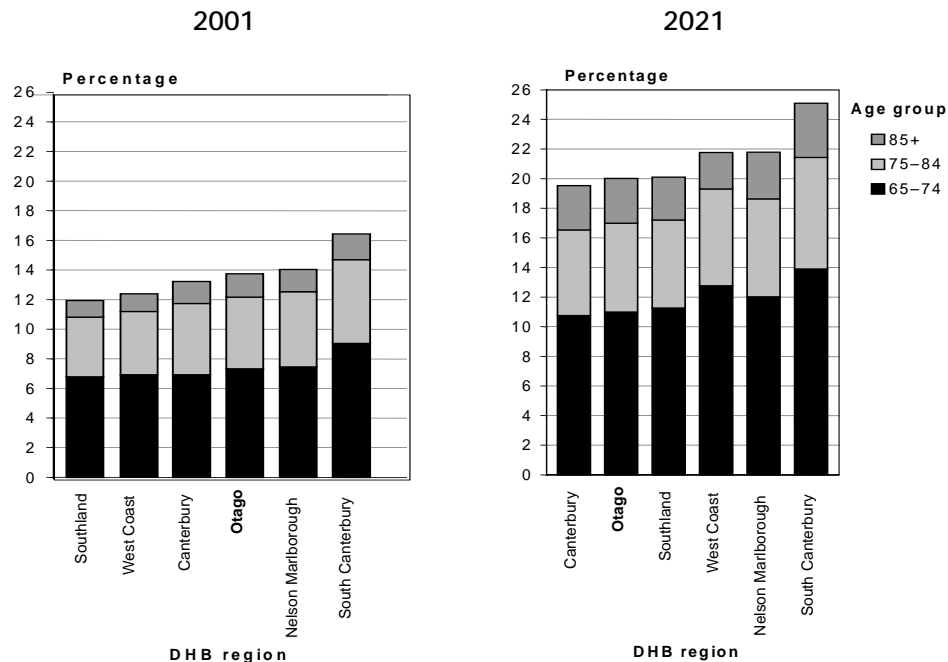
Table 1. Number and Percentage of People in Older Age Groups in the Usually Resident Population, 2001

District Health Board & Territorial Authority	65-74 Years		75-84 Years		85+ Years		Total 65+ Years	
	No.	%	No.	%	No.	%	No.	%
Ashburton	2,238	8.8%	1,473	5.8%	459	1.8%	4,170	16.4%
Christchurch City	22,140	7.0%	16,074	5.1%	5,118	1.6%	43,332	13.7%
Banks Peninsula	711	9.1%	312	4.0%	72	0.9%	1,095	14.0%
Hurunui	801	8.1%	414	4.2%	96	1.0%	1,311	13.3%
Kaikoura	306	8.8%	180	5.2%	48	1.4%	534	15.3%
Selwyn	1,428	5.2%	693	2.5%	156	0.6%	2,277	8.3%
Waimakiriri	2,637	7.1%	1,494	4.0%	369	1.0%	4,500	12.2%
Canterbury DHB	30,261	7.1%	20,640	4.8%	6,321	1.5%	57,222	13.4%
Nelson Marlborough DHB	9,354	7.6%	6,270	5.1%	1,854	1.5%	17,478	14.3%
Otago DHB	13,182	7.7%	8,571	5.0%	2,808	1.6%	24,561	14.4%
South Canterbury DHB	4,920	9.3%	3,150	6.0%	1,008	1.9%	9,078	17.2%
Southland DHB	7,245	7.0%	4,374	4.2%	1,314	1.3%	12,933	12.5%
West Coast DHB	2,310	7.6%	1,404	4.6%	363	1.2%	4,077	13.5%
South Island Total	67,272	7.4%	44,409	4.9%	13,668	1.5%	125,349	13.8%
New Zealand Total	246,171	6.6%	155,616	4.2%	48,639	1.3%	450,426	12.1%

Source: Statistics New Zealand - New Zealand Population Census 2001.

Figure 1. Older Age Groups as a Percentage of the Total Population, by DHB, 2001 and 2021

Source: Statistics New Zealand, Population Projections (base 1999) (Ministry of Health 2002)



The number of people aged 65 or more years will rise by 68% between 2001 and 2021, from 57,222 to 96,250, an average growth of 3.4% a year. The number of people aged 85 or more years will rise even faster (120%), more than doubling in this twenty year period with an average growth of 6% a year.

Although the 85+ year old group is increasing faster than younger old groups, in the next two decades the biggest growth in actual numbers will be of the 'young-old' 65-74 year age group, as the baby boom generation reaches retirement. From around 2025 the number of 85+ years will rise substantially as this baby-boom cohort moves into older age. (Table 2Table-3 & Figure 1Figure-4) (Ministry of Health 2002)

Table 23. Expected Number and Percentage of People in Older Age Groups in the Usually Resident Population, 2021

District Health Board & Territorial Authority	Age Group							
	65-74 Years		75-84 Years		85+ Years		Total 65+ Years	
	No.	%	No.	%	No.	%	No.	%
Ashburton	<i>Statistics New Zealand does not project to Territorial Authority level within age groups because the numbers are too small. A rough estimate of numbers in each age group could be made by assuming the age groups within each Territorial Authority's 65+ population are distributed in the same % as for the DHB as a whole</i>						6,500	25.5%
Christchurch City							66,200	18.5%
Banks Peninsula							2,000	23.3%
Hurunui							2,800	24.6%
Kaikoura							900	25.0%
Selwyn							6,500	16.1%
Waimakiriri							10,600	20.5%
Canterbury DHB	53,400	10.6%	28,940	5.7%	13,910	2.8%	96,250	20.5%
Nelson Marlborough DHB	18,055	12.2%	10,210	6.9%	4,580	3.1%	32,845	22.2%
Otago DHB	20,220	11.2%	20,500	6.2%	5,440	3.0%	36,910	20.5%
South Canterbury DHB	6,850	13.7%	3,970	7.9%	1,960	3.9%	12,780	25.6%
Southland DHB	11,440	11.3%	6,525	6.5%	2,880	2.9%	20,845	20.7%
West Coast DHB	3,755	13.8%	2,030	7.5%	710	2.6%	6,495	23.8%
South Island Total	113,720	11.3%	62,925	6.2%	29,480	2.9%	206,125	20.4%
New Zealand Total	447,760	9.9%	244,980	5.4%	106,485	2.3%	799,225	17.6%

Source: Statistics New Zealand - New Zealand Population Census 2001.

Older People in Rural Areas

Most older people in Canterbury (like the general population) live in the main urban areas (i.e. areas with 30,000 or more residents). However Canterbury's older residents are more likely than other older New Zealanders to live in rural areas. Ashburton is among the ten 'oldest' territorial authorities in the country in terms of the proportion of older people in the population.

Some rural centres have relatively high proportions of 'young-old' 65-74 year-old retirees. As people get older and in more need of health services, they tend to move to larger urban centres if they are able to do so (Statistics New Zealand 2004).

People living in country areas remote from metropolitan health services can have difficulty getting the health care they need, particularly if they are on low incomes or without effective means of transport.

Ethnicity

Most (97%) older Canterbury residents in 2001 were of European origin. People of Māori descent made up 1.3% of older people, those of Pacific origin 0.3% and of Asian origin 1.2% (Table 3).

Younger age groups are more ethnically varied and this will pass on to older age groups as the population ages, making for more ethnic diversity among older people in the future. Nationally the number of Māori, Pacific and Asian people aged 65+ years is expected to grow over twice as fast as the overall older population between 2001 and 2021 (Cornwall & Davey 2004).

When planning for health services for people with chronic illness, it is important also to consider the number of Māori, Pacific people and low income people in the 50 plus age group, since these groups have a higher rate of chronic illness at an earlier age than the overall population.

Māori and Pacific people have lower life expectancy and higher rates of deaths and hospital admissions than the overall population, even when socioeconomic factors are taken into account. Death rates for Maori and Pacific people, particularly for middle-aged and older people, did not drop during the 1980s and 1990s as they did for non-Maori/non-Pacific, and the ethnic disparity in health status in fact widened during those decades (Public Health Intelligence 2001, 2003).

Table 35. *Number of Usually Resident Population Aged 65+ Years by Ethnicity, South Island DHBs, 2001*

District Health Board	Māori	Pacific People	Asian	Other	Total
Canterbury	744	198	675	55,608	57,222
Nelson Marlborough	273	27	48	17,130	17,478
Otago	267	51	201	24,054	24,561
South Canterbury	96	3	36	8,940	9,078
Southland	348	39	42	12,507	12,349
West Coast	96	3	12	3,966	4,077
South Island: % all 65+	1.5%	0.3%	0.8%	97.5%	100.0%
New Zealand: % all 65+	3.9%	1.7%	2.1%	92.3%	100.0%

Source: Statistics New Zealand. Population Census 2001.

Gender Differences

The greater numbers of women than men in the oldest age groups reflects women’s higher life expectancy. This disparity has been reducing, since men’s and women’s death rates for some common illnesses (e.g. lung cancer) have been converging, and life expectancy of older men has been rising faster than that of older women (Statistics New Zealand 2004a).

Living Arrangements and Social Networks

A sense of belonging and contributing to a group and community is crucial for a person’s health and well-being at any age, and maintaining strong warm social relationships helps people stay fit and healthy for as long as possible. As people grow older, some experience loosening social and family ties, as they retire from work, as partners and friends die, and as younger family members shift to other places (Ministry of Health 1997, Alcohol & Public Health Research Unit 1999).

Some older people also experience a gradual or sudden loss of independence and isolation from others as deteriorating vision, hearing and mobility means they cannot drive or get about or socialise as easily as before. This can be especially difficult for people on low incomes and those living in rural areas and small towns with little or no public transport (Ministry of Health 1997).

Living Alone

The number of older people living alone has been rising and is expected to continue, reflecting longer life expectancy, smaller family sizes, higher rates of separation and divorce, and a greater likelihood that adult children will move to find work elsewhere (Ministry of Health 2002, Statistics New Zealand 2004a).

Table 4 shows that 25% of Canterbury’s population aged 65-74 years, 43% of those aged 75-84 years and 60% of those over 85 years lived alone in 2001, higher than the national average for each age group.

Older women live alone more commonly than men, largely because they survive their older partners to reach older ages. Death rates for older men have been dropping - this suggests that in the future more couples may grow old together (with a consequent need for shared service arrangements), in a counter-trend to the rising number of people living on their own (Ministry of Health 2002).

Older Māori and Pacific people are more likely to live with family than other ethnic groups; 60% of those over 75 years lived with family members (Ministry of Health 2002).

The availability of adult children as carers is likely to reduce in coming decades. This is due to the smaller family sizes of people now moving into older age, as well as greater mobility of younger people (Davey 2003).

Older people in the coming decades are likely to seek and develop diverse living arrangements that find a balance between independence and the need and desire for companionship and practical support. The challenge for DHBs will be how to support these arrangements fairly and effectively.

Table 46. Percentage of Older People Living Alone, by Age Group, 2001

District Health Board & Territorial Authority	Age Group		
	65-74 Years	75-84 Years	85+ Years
Ashburton	22.3%	41.1%	60.2%
Christchurch City	27.1%	44.6%	60.7%
Banks Peninsula	22.5%	40.0%	55.0%
Hurunui	27.9%	34.9%	50.0%
Kaikoura	22.7%	34.5%	54.5%
Selwyn	17.4%	34.3%	55.8%
Waimakiriri	20.6%	36.8%	58.8%
Canterbury DHB	25.5%	42.9%	59.9%
Nelson Marlborough DHB	23.5%	40.4%	58.9%
Otago DHB	26.8%	44.3%	62.2%
South Canterbury DHB	24.6%	45.4%	62.7%
Southland DHB	27.2%	46.0%	62.6%
West Coast DHB	30.9%	48.1%	59.0%
South Island Total	25.8%	43.5%	60.7%
New Zealand Total	24.3%	41.1%	57.0%

Source: Statistics New Zealand – New Zealand Population Census 2001

Care-Giving and Voluntary Work

An increasing number of older Cantabrians do unpaid work looking after a child or someone who is ill or disabled, or helping/voluntary work outside the home. Nearly half those aged 65-75 years, a quarter of those aged 75-84 years and nearly 10% of those over 85 years look after children, sick or disabled people or do voluntary work. Canterbury figures were much the same as the national average (Table 5). Women are more likely to look after children, while men are more often caregivers for their sick or disabled spouses. Older Māori and Pacific people are more likely than others to do these forms of unpaid work (Ministry of Health 2002).

The distinction between carers and cared-for may become more blurred in coming decades, presenting DHBs with the challenge of finding more flexible ways of funding the support needed by a household of older people.

Table 57. Percentage of Older People Doing Unpaid Childcare, Caring for Sick or Disabled People or Helping/Voluntary Work Outside the Home, by Age Group and DHB, 2001

District Health Board	65-74 Years			75-84 Years			85 Years and Over		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Canterbury	41%	54%	48%	26%	25%	25%	12%	6%	8%
Nelson Marlborough	38%	54%	46%	28%	26%	27%	10%	7%	8%
Otago	39%	51%	45%	26%	22%	23%	10%	6%	7%
South Canterbury	38%	56%	47%	25%	24%	25%	11%	8%	8%
Southland	34%	49%	41%	21%	21%	21%	7%	6%	5%
West Coast	34%	47%	40%	22%	21%	22%	13%	5%	8%
Total New Zealand	39%	53%	46%	26%	26%	26%	12%	7%	8%

Source: Statistics New Zealand – New Zealand Population Census 2001.

Residential Care

The vast majority of older people live at home until they die, with only a small minority going to live permanently in residential care facilities (i.e. rest homes or long-stay hospitals) towards the end of their lives.

Data from the New Zealand Disability Surveys suggest that approximately 5.8% of all New Zealanders aged 65+ years lived in residential care in 2001, about the same percentage as in 1996/97. It was estimated that around 4.2% of older New Zealanders live in rest homes and 1.5% in long-stay hospitals. These percentages were also much the same as in 1996/97. (Statistics New Zealand 2002, Health Funding Authority/Ministry of Health 1998).

The national samples used in the New Zealand Disability Surveys are too small to give estimates of the numbers living in residential care at DHB or even regional level. It is difficult to get an accurate estimate of the number of people in long-term residential care, because some beds are always taken up with people staying temporarily for respite, convalescence or palliative care. A more accurate measure of the number of older people in permanent residential care in Canterbury is the number of people receiving subsidies for long-term care. In 2004/05 4,570 Canterbury older people received a residential subsidy in 2004/05, or 7.4% of the older population (Table 6).

To this must be added for Canterbury an additional approximately 1,140 more people living in rest homes who did not receive any level of subsidy because of their assets.¹ This figure has not been added into the table, since the estimate is based on a census of Canterbury rest homes on one specific day (not the whole 2004/05 year), and comparable figures are not available for the other DHBs. Private payers appear to account for approximately 45% of all rest home residents. It is believed however that the proportion of wholly privately-paying rest home residents is much the same in other areas.

Looking at the number of people living in permanent residential care at any one time, on 30 June 2005 there were approximately 2,520 people (including 1,140 private payers) or 4.1% of the Canterbury population aged 65+ years living in rest homes, as well as 1,029 people (1.7%) in long-stay hospitals, 423 people (0.7%) in dementia facilities (rest home level) and 121 people (0.2%) in hospital-level dementia facilities. These numbers are lower than those in Table 6 because they refer to the people actually in residential facilities on any day, which is less than the total number of people using long-term residential care throughout the year.

Table 68. *Number of Older People Receiving a Residential Care Subsidy, as a Percentage of the Total Older Population, by DHB and Type of Care, During the 2004/05 Year*

District Health Board	Rest Home*		Long-Stay Hospital		Dementia Unit (Rest Home Level)		Dementia Unit (Hospital-Level)		Total Residential Care	
	Number	%	Number	%	Number	%	Number	%	Number	%
Canterbury	1,896	3.1	1,799	2.9	658	1.1	217	0.4	4,570	7.4
Nelson Marlborough	430	2.2	497	2.6	157	0.8	53	0.3	1,137	5.9
Otago	871	3.4	642	2.5	243	0.9	98	0.4	1,854	7.2
South Canterbury	241	2.5	204	2.1	57	0.6	29	0.3	531	5.6
Southland	413	2.9	324	2.3	117	0.8	45	0.3	899	6.4
West Coast	167	3.9	121	2.8	6	0.1	19	0.4	313	7.3
Southern Region	4,018	3.0	3,587	2.7	1238	0.9	461	0.3	9,304	6.9

Source: HealthPAC- Client Centred Payment System (CCPS)

* The number of rest home residents refers only to people receiving some level of public subsidy and does not include wholly private payers (estimated as an additional 1,140 or so people). All people in hospital or dementia care receive a subsidy, so these numbers reflect the actual number of people in these types of facilities.

Comparable national data on residential care clients are not easily available. The New Zealand Disability Surveys 2001 provide a sample-based estimate of the number of older people in residential care in 2001. If this is used to provide a national comparison, it appears that Canterbury, and the South Island generally, may have a higher percentage of people in residential care than the national average. If this is in fact so (and the data needs further analysis), the difference may reflect the considerable differences in the data sources for the New Zealand and DHB estimates, and possibly the

¹ Some of these residents may also not be eligible for a subsidy in terms of their assessed level of need - however this number is believed to be small.

somewhat higher rate of disability in the southern older population (see later in this section under Disability). It is also most likely to reflect differences in how older people are assessed as eligible for residential care, and the availability of residential care beds. (See also the discussion in the section on Use of Services - Home-Based and Residential Support Services).

Retirement Villages and Supportive Housing

A national sample survey found that 6%-7% of New Zealanders aged 65-84 years lived in retirement villages, rising to 12.5% of those aged 85 or more years (Fergusson et al 2001). Applying these rates to the older Canterbury population, we would expect that around 4,600 older people live in retirement villages in Canterbury.

There is increasing interest among DHBs, local councils and voluntary organisations (e.g. Abbeyfields) in developing a variety of different forms of supportive housing, to provide affordable accommodation alternatives for older people.

Financial Security

A person's level and security of income directly affects their health and independence. People on low incomes are less likely to live in warm dry houses of their own, to be able to afford the taxi needed to get to the clinic, or to go to the doctor for a screening test or at an early stage of an illness, to pick up all the medicines they are prescribed or to use a private specialist or physiotherapist when public health services are unavailable or have long waiting times (Statistics New Zealand 2004a, Public Health Intelligence 2001).

A national study of older people's living standards found that most older people report they are not experiencing particular material hardship. However a minority (5%-10%) did experience some hardship and a further 5% experienced marked hardship. Poor living standards in old age are associated with a mixture of adverse events from earlier in life, including high accommodation costs, having had a low paying occupation, marital separation and/or poor health (Fergusson et al 2001).

Having to pay rent or a mortgage has a big impact on older people's material well-being. Overall figures on income and home ownership for DHB populations mask the marked differences that exist within these populations between high and low income groups (Southern Regional Health Authority 1998, Public Health Intelligence 2001).

Poverty among older people is expected to become a greater problem in the next decade as the middle-aged people who lost low-income jobs in the economic changes of the 1980s reach old age. Many in this cohort were not able to get back into the workforce and have not built up housing or other assets in the same way as earlier generations.

This will be a particular issue for Māori and Pacific people, who moreover tend to develop chronic and disabling illnesses at an earlier age than the general population. The higher rate of marital separation in recent decades will also contribute to fewer assets held by older people in the future (Davey 2003, Statistics New Zealand 2004).

Poverty and problems in getting access to health services may become a particular issue for some poorer people in small rural towns if they are trapped by rising house prices from being able to shift to the bigger city as they age and need specialist health and disability support services.

Paid Work and Income Levels

Income is related to paid employment and older people on average have lower incomes than the working age population. The real income of older New Zealanders dropped by 7% between 1986 and 1991 and while it has not dropped further since then, by 2001 it was still below the 1986 level (Statistics New Zealand 2004).

Although paid employment drops markedly in later years, the number of people still in paid employment at older ages increased considerably after 1991, when the entitlement age for National Superannuation was raised from 60 to 65 years. In 2001 24% of New Zealand men and 11% of women aged 65-74 years, as well as 5% of men and 3% of women aged 75-84 years, were still in paid employment (Statistics New Zealand 2004).

Home Ownership

Around 82% of older New Zealanders own their own home and another 3% live in a home owned by a family trust. Not having to pay rent or a mortgage makes a big difference to older people's material wellbeing. In 2001 the proportion of people aged 60-74 years who owned their home mortgage-free ranged from 20% among Pacific people, to 48% of Māori and 72% of New Zealand European/Other ethnic groups (Davey 2003).

In Canterbury 81% of people aged 65 years or more owned or part-owned their own home in 2001, the same as the New Zealand average (Table 7).

As described above, the proportion of older people owning their own homes may decline in coming decades, due to the long-term effects of the recession of the 1980s and 1990s (Davey 2003).

Table 79. *Percentage of People Aged 65 Years or over who Owned or Partly Owned Their Own Home, 2001*

DHB & Territorial Authority	Percentage
Ashburton	83.7%
Christchurch City	82.7%
Banks Peninsula	88.7%
Hurunui	85.5%
Kaikoura	85.0%
Selwyn	90.0%
Waimakiriri	86.2%
Canterbury DHB	83.5%
Nelson Marlborough DHB	85.1%
Otago DHB	81.4%
South Canterbury DHB	83.6%
Southland DHB	83.0%
West Coast DHB	78.8%
South Island DHBs	83.1%
New Zealand	81.5%

Source: Stats NZ - New Zealand Population Census 2001.

Life Expectancy and Death Rates

Life Expectancy

The number of additional years that a 65-year-old can expect to live has steadily increased since the 1970s for the older population as a whole and particularly for men.

The most recent available regional data showed that in 1995-97 the overall older Canterbury population could expect to live an additional 17.6 years, more for women (19.3 years) and less for men (15.5) years. This is much the same as the national average life expectancy for a 65 year old (15.6 years for men, 19.2 for women and 17.5 overall). (Statistics NZ 2004b).

The major causes of the rise in life expectancy have been the decline in smoking, as well as earlier and more effective treatments for cardiac and other diseases (Statistics New Zealand 2004a, Statistics New Zealand 2004b, Cornwall & Davey 2004, Ministry of Health 1997).

This change is less evident for people on low incomes and did not occur for Māori people. The higher death rates of Māori in middle and older age groups account for three-quarters of the overall difference in life expectancy between Māori and non-Māori. Among men in their 50s and women in their 50s and 60s, Māori are roughly three times more likely to die than non-Māori. Pacific people's life expectancy rates are higher than for Maori but lower than the average for the total population (Table 8). (Statistics New Zealand 2004a, Ministry of Health 2002, Cornwall & Davey 2004.)

Expected Years of Independent Life

Women live longer than men, but on average live for more years with disability. National (but not regional figures) are available on the number of years a person aged 65 could expect to live without some form of disability needing assistance - see Table 8 (Ministry of Health 2002).

Between 1996 and 2001, life expectancy increased for both women and men in the overall New Zealand population. However for men this was accompanied by fewer years of good health than for women (Public Health Intelligence 2004c).

Maori at age 65 years had markedly fewer years of independent life than the overall older population, while figures are not available for Pacific Island people due to small population size (Table 8).

Table 8.10. Life Expectancy and Independent Life Expectancy at Age 65 Years, New Zealand Population

New Zealand Population	Life Expectancy at Age 65	Independent Life Expectancy at Age 65
All New Zealand	17.8	10.9
All Male	16.1	9.9
All Female	19.5	11.9
Māori Male	12.6	7.4
Māori Female	15.0	7.5
Pacific People Male	13.4	not available
Pacific People Female	16.6	not available

Source: Ministry of Health 2002.

Death Rates

While everyone has to die of something at some time, the changes in death rates shows that this point is being put off to later ages for many people. Overall death rates for older people dropped between 1980 and 1998, with the biggest reduction being among people aged 65-74 years. Death rates for New Zealanders aged 65-74 years dropped by about a third in this 18-year period. DHB comparisons cannot easily be made because of the small size of DHB populations and lack of easily available data over time for DHB populations (Ministry of Health 2002).

While death rates declined in the overall New Zealand population during the 1980s and 1990s, death rates for Maori and Pacific people, particularly older people, remained level. Thus the gap in life expectancy between Maori, Pacific and non-Maori/non-Pacific groups widened during this period (Public Health Intelligence 2003). There is some evidence that Maori death rates may be reducing at a faster than average rate since 1996 however, lessening the disparity (Public Health Intelligence 2004).

Death rates for low income people declined during the 1980s and 1990s but at a slower rate than for the high income group, resulting in a widening disparity between high and low income groups for men (but not for women) (Public Health Intelligence 2005).

Death rates increase with age, but tend to slow down at the very oldest ages. This trend is becoming more marked and has been seen as possibly reflecting the survival of the fittest people into very old age (Ministry of Health 2002).

Care at the End of Life

The care of older people cannot easily be separated from the care of people as they die. Most (79%) of the 3,279 deaths in Canterbury in 2001 were of people aged 65 or more, and nearly a third (1,016) were of people aged 85 years or more (Table 9).

Table 9.11. *Number and Percentage of People Dying in Canterbury, by Age, 2001*

Age at Death	Number of Deaths in 2001	Percentage of Deaths in 2001
Under 65 Years	680	21%
65-84 Years	1,583	48%
85+ Years	1,016	31%
All Ages	3,279	100%

Source: NZ Health Information Service

The need for and the cost of health and disability support services are greatest in the last year of life, regardless of the age at death. In their last year people are more likely to be frequently hospitalised, to receive more intensive hospital care and in some cases to need nursing home care. The increase in life expectancy may not so much increase the demand for services as postpone it to the last year of life at an older age (Cornwall & Davey 2004).

The most common causes of death among older people are ischaemic and other forms of heart disease (31%), cancer (25%), stroke (12%) and respiratory disease (8%). Most older people die at home, in general hospitals or in residential care facilities (Statistics New Zealand 2004a) (Table 10).

Hospice and specialist palliative care services in New Zealand have tended to be directed towards people dying from cancer and at somewhat younger ages. There is scope for extending the palliative care approach that the hospice movement has developed to older people who more commonly die from other causes and in a range of other places (Gibbs 1998).

Table 10.12. *Major Causes of Death Among Older New Zealanders Compared to Those Under 65 Years*

Cause of Death	% Dying from this Cause	
	People Aged 65+ Years	People Aged Under 65 Years
Heart Disease, All Types	31%	15%
Cancer, All Types	25%	35%
Stroke/Cerebrovascular Disease	12%	Less than 1%
Respiratory Disease	8%	4%
Injury/Suicide	Less than 1%	13%

Source: Statistics New Zealand 2004a.

Avoidable Deaths

Death rates per se are a less useful indicator of the health of the older population than the rate of avoidable deaths before the age of 75 years, since at some point everyone dies from some cause.

Deaths that have been identified as theoretically preventable or reducible in the 'young-old' 65-74 year age group include ischaemic heart disease, various cancers (e.g. colorectal, lung, skin, oral and breast), alcohol related disease, chronic respiratory disease and respiratory infection, stroke, road traffic deaths, diabetes, hypertensive disease and renal failure (Ministry of Health 1999, 2002).

A Ministry of Health review identifies different types of 'prevention' that can be undertaken at different stages of an illness or injury to stop it happening or worsening (Ministry of Health 1999):

- 'primary prevention' to prevent an illness or injury occurring (e.g. not smoking, wearing seat-belts)

- 'secondary prevention' to catch illness at an early stage (e.g. managing diabetes or hypertension)
- 'tertiary prevention' to stop it getting worse (e.g. early surgery for cancer).

The rate of 'avoidable' deaths in the older population as a whole has been dropping steadily since the 1980s, as a result of a combination of all these forms of prevention - healthier lifestyles, timely screening and early diagnosis and effective medical and surgical treatment (Ministry of Health 1999).

However deaths from avoidable causes are more common within some groups in the population than others - people on low incomes more than those on high incomes, Maori and Pacific people more than non-Maori/non-Pacific people and men more than women. The lowest level of death rates achieved by some groups within the population show the level that theoretically could be reached for all people if optimum prevention and access to treatment existed (Ministry of Health 1999).

Table 11 shows that Canterbury had a slightly lower death rate per head of older population for many causes compared to the national average in 1999-2001. It is not clear whether the differences are significant or due to chance.

Table 11.43. Deaths of Older People: Numbers and Rate per 10,000 Age-Specific Population, for Selected Causes, Canterbury and New Zealand, 1999-2001

Selected Causes of Death	Canterbury		New Zealand	
	Number of Deaths	Deaths per 10,000 People	Number of Deaths	Deaths per 10,000 People
65 - 74 Years				
Ischaemic Heart Disease	448	48	3,708	49
Other Heart Disease	39	4	418	5
Stroke/Cerebrovascular Diseases	123	13	1,129	15
Cancer of Lung & Trachea	163	18	1,478	20
Colorectal Cancer	128	14	1,033	14
Prostate Cancer	43	5	483	6
Breast Cancer	38	4	387	5
All Other Forms Of Cancer	344	37	3,032	40
Chronic Respiratory Disease	130	14	1,335	18
Influenza and Pneumonia	5	1	95	1
Diabetes Mellitus	36	4	580	8
Injury from Fall	14	2	77	1
Intentional Self-Harm	8	1	84	1
All Causes - 65-74 years *	1,798	193	16,237	215
75 Years And Over				
Ischaemic Heart Disease	1,568	196	12,478	205
Other Heart Disease	378	47	2,805	46
Stroke/Cerebrovascular Diseases	839	105	6,395	105
Cancer Of Lung & Trachea	244	30	1,596	26
Colorectal Cancer	207	26	1,527	25
Prostate Cancer	126	16	1,120	18
Breast Cancer	86	11	598	9
All Other Forms Of Cancer	673	84	5,013	82
Chronic Respiratory Disease	400	50	3,355	55
Influenza and Pneumonia	122	15	1,219	20
Diabetes Mellitus	144	18	1,199	20
Injury from Fall	74	9	609	10
Intentional Self-Harm	10	1	78	1
All Causes - 75 Years and Over*	6,026	751	47,527	782
All Causes - 65 Years and Over*	7,824	452	63,764	468

Source: NZ Health Information Service - National Minimum Data Set (NMDS)

* Deaths from All Causes sums to more than the selected causes shown in the table because it includes all the other causes of death not shown in this table

Health and Illness

Keeping Fit and Healthy

The falling death rates for heart disease, stroke, some cancers and other conditions show the importance for older people of maintaining a fit and healthy lifestyle. Exercising regularly, eating well, not smoking and maintaining a good weight are protective habits that, the evidence suggests, people are never too old to adopt (Public Health Intelligence 2004a).

The following information on older people's habits comes from the New Zealand Health Survey 2002/03 (Public Health Intelligence 2004, 2004a) (Table 12):

- **Physical activity** drops with age, and is consistently higher for men than women, with little difference among income groups. Being sedentary (i.e. having less than half an hour's activity per week) rises sharply after 75 years, especially among women.
- **Being overweight or obese** is more common among men than women, with men aged 65-74 years being the most overweight of any age/gender group in the population. Being overweight does not vary by income group, although obesity is more common among low income groups. The rapid rate of increase in obesity ('obesity epidemic') experienced by the overall population since the 1980s may now be slowing (Public Health Intelligence 2004b).
- **Tobacco smoking** decreases with age for both sexes and smoking rates are similar for older men and women. Smoking rates are higher in lower income groups and among Maori and Pacific people. Studies show that it is never too late to improve health by quitting smoking, that older smokers are more likely to succeed in quitting and that smoking cessation programmes for older smokers are cost-effective in reducing health care costs (New Zealand Guidelines Group 2002, Ministry of Health 2005).
- **Vegetable and fruit intake** rises with age and is consistently higher for women and people in higher income groups.
- **High cholesterol** rises to 75 years then drops, with little difference between men or women or among income groups. Overall rates of high cholesterol have been dropping since the 1980s.
- **Potentially hazardous drinking** drops with age for both sexes, but hazardous alcohol drinking is mostly done by men.

Table 12.44. *Percentage of New Zealanders Aged 65 Years or Over with Specific Risk Factors for Ill Health, 2002/03, and Estimated Number of Canterbury Residents Based on this*

Reducing the Risk of Illness	% of New Zealanders		Estimated No. of Canterbury Residents*	
	65-74 Years**	75+ Years**	65 - 74 Years	75+ Years
High Cholesterol	35 - 43% m-f	24 - 25% f-m	11,800	6,610
Three+ Vegetable Servings a Day	75 - 80% m-f	80% m+f	23,450	21,570
Two+ Fruit Eaten A Day	50 - 70% m-f	60 - 75% m-f	18,160	18,200
Physically Active ***	65 - 75% f-m	43 - 53% f-m	21,180	12,940
Sedentary ***	12 - 17% m-f	33 - 40% m-f	4,390	9,840
Over-Weight	38 - 51% f-m	36 - 45% f-m	13,470	10,920
Tobacco Smoking	12% m+f	4 - 6% f-m	3,630	1,350
Potentially Hazardous Drinking Habit	12% m	3% m	1,710	300

Source: Public Health Intelligence (2004)

* Estimates for Canterbury are based on applying the NZ rates to the Canterbury 2001 population. Numbers are rounded to the nearest 10.

** The range shows the male/female difference

*** Physically Active = At Least 2.5 Hours moderate activity In the last week. Sedentary = Less than 30 minutes physical activity a week.

- **Social factors important for health and fitness** - a study of factors affecting older people's ability to live independently also identified the following as important (Dwyer et al 2000):
 - Positive attitudes towards ageing
 - Adequate income
 - Staying actively involved in social networks
 - Family support and care
 - Having health and disability support needs met
 - Adequate housing and security
 - Access to transport

Avoidable Hospital Admissions

While many hospital admissions for illness or injury are unavoidable, admissions from some causes have reduced or remained steady over recent decades. Overall admission rates per head of population for conditions such as lung cancer, alcohol-related disease, myocardial infarction, some strokes, some chronic respiratory conditions, falls and other injury have remained stable since the 1980s. This reflects healthier lifestyle changes (e.g. reduction in smoking among men) and more effective investigation and treatment (e.g. for hypertension) (Ministry of Health 2002).

Table 13 compares Canterbury's and New Zealand's rates of hospital admission and average length of stay for some common conditions and procedures for older people in 2003. Although the significance of the differences has not been calculated, Canterbury appears to have a similar or slightly lower rate of admission for most causes, compared to the national average, for both older age groups. The average number of days spent in hospital was slightly higher for most causes in both age groups.

The effect of good primary care

Some hospital admissions are for conditions that could have been treated through effective primary care and support services - these have been called 'ambulatory sensitive admissions'. Admissions from these causes have been rising since the late 1980s, among older people as well as the overall population. Examples include breast cancer, hepatitis, angina, congestive heart failure, respiratory infections, asthma and cellulitis (Ministry of Health 1999, Ministry of Health 2002, Aish et al 2003).

National studies of 'avoidable hospital admissions' as related to older people look just at the 65-74 year age group, as people aged 75+ years are more likely to have a combination of illnesses (Public Health Intelligence 2004c).

A recent research study looked at some specific conditions that should not have resulted in hospital admission if the person had been getting adequate primary health care. Although this study covered all ages, conditions that affect older people included pneumonia, cellulitis and abscess, congestive heart failure, malignant hypertension, perforated/bleeding ulcer, kidney infections, gangrene, diabetic ketoacidosis and diabetic coma. The study showed that rates of hospital admissions for these conditions rose for all areas between 1980 and 1997 (Dharmalingam et al 2004).

Christchurch City was around the national average in all time periods, while Rural Canterbury was below the national average (Table 14). The study estimated that 10% of all hospitalisations for Christchurch City residents and 9.5% of those from rural Canterbury in 1995-1997 could have been avoided if these conditions had been managed adequately in primary care, about the same as the national average (10%) (Dharmalingam et al 2004).

Admission rates were strongly related to socioeconomic status (Dharmalingam et al 2004).

Table 1315. Public Hospital Admissions and Average Length of Stay of Older People, Numbers and Rates per 10,000 Population by Age, Canterbury and New Zealand, 2003

Selected Causes of Hospital Admission	Canterbury				New Zealand			
	All* Discharges	Day-Cases	Average Days Stay	Discharges per 10,000	All* Discharges	Day-Cases	Average Days Stay	Discharges per 10,000
65 - 74 Years								
Ischaemic Heart Disease	772	151	6.4	249	7,366	1,193	5.2	288
Other Heart Disease	450	107	5.5	145	4,638	850	5.1	181
Bypass Surgery	185	0	17.2	60	1,466	-	13.8	57
Stroke/Cerebrovascular Diseases	233	2	10.7	75	1,880	62	9.3	73
Colorectal Cancer	109	11	9.9	35	1,117	213	10.5	44
Prostate Cancer	76	22	6.1	25	579	186	4.8	23
Cancer of Lung & Trachea	92	30	10.1	30	880	229	7.5	34
Breast Cancer	32	0	5.9	10	424	54	5.5	17
All Other Forms of Cancer	626	205	7.8	202	7,576	3,734	7.5	296
Chronic Respiratory Disease	433	25	6.2	140	3,814	238	5.8	149
Influenza and Pneumonia	159	1	5.9	51	1,614	51	6.8	63
Arthritis	306	84	7.0	99	2,905	502	6.5	113
Hip Replacement	85	0	8.2	27	1,045	-	7.8	41
Knee Replacement	86	0	6.5	28	739	-	7.7	29
Injury from Fall	387	26	9.4	125	3,222	373	8.8	126
Hip Fracture	67	1	9.2	22	478	4	9.0	19
Diabetes Mellitus	185	62	9.5	60	1,660	598	8.9	65
Cataract Operations	142	118	1.2	46	1,879	1,737	2.2	73
All Causes - 65-74 Years**	9,014	1,970	9.5	2,906	93,395	31,403	7.4	3,649
75+ Years								
Ischaemic Heart Disease	1,181	72	10.0	406	9,321	574	7.6	423
Other Heart Disease	876	68	14.2	301	8,124	663	12.3	368
Bypass Surgery	82	0	14.7	28	608	-	15.7	28
Stroke/Cerebrovascular Diseases	525	3	41.7	181	3,964	54	33.8	180
Colorectal Cancer	219	10	11.5	75	1,417	179	13.0	64
Prostate Cancer	75	8	27.8	26	756	191	10.0	34
Cancer of Lung & Trachea	94	18	8.4	32	700	159	12.2	32
Breast Cancer	47	2	20.7	16	407	29	21.4	18
All Other Forms of Cancer	939	294	9.7	323	9,772	5,117	8.6	443
Chronic Respiratory Disease	527	16	9.1	181	4,624	210	9.9	210
Influenza and Pneumonia	413	2	12.8	142	3,687	42	18.2	167
Arthritis	325	38	24.5	112	2,841	358	16.0	129
Hip Replacement	131	0	12.4	45	1,001	-	10.1	45
Knee Replacement	72	0	9.9	25	676	-	9.1	31
Injury from Fall	1,755	69	11.9	604	13,883	882	11.6	629
Hip Fracture	411	0	9.6	141	3,313	18	10.7	150
Diabetes Mellitus	232	82	24.7	80	1,767	642	22.5	80
Cataract Operations	402	352	1.4	138	4,125	3,824	2.2	187
All Causes - 75 Years And Over**	16,641	2,509	19.0	5,724	135,182	29,762	16.1	6,129
All Causes - 65 Years And Over**	25,655	4,479	15.8	4,269	228,577	61,165	12.9	10,364

Source: NZ Health Information Service - National Minimum Data Set (NMDS)

* 'All Discharges' includes inpatients and day patients. Average days stay is calculated on inpatients only.

** Admissions from 'All Causes' sums to more than the selected causes shown in the table because it includes all the other causes of admission not included in this table.

Table 14. Age-Standardised Avoidable Hospitalisation Rates per 10,000 Population (All Ages), New Zealand, South Island DHBs and the Highest and Lowest Scoring DHBs, for the Three-Year Periods 1980-1982, 1985-1987, 1990-1992 and 1995-1997

Region	Rates of Avoidable Hospital Admissions per 10,000 Population (all ages)			
	1980-1982	1985-1987	1990-1992	1995-1997
Tairāwhiti (highest score 1995-1997)	109	135	143	171
West Coast	114	120	91	95
Christchurch City	66	81	76	95
Southland	70	74	75	81
Rural Canterbury	62	69	64	74
Otago	66	78	66	83
South Canterbury	66	76	70	73
Nelson Marlborough	55	57	47	61
Rodney (lowest score 1995-1997)	35	42	42	56
New Zealand Average	73	83	75	96

Source: Dharmalingam et al 2004

Chronic and Disabling Diseases - inequalities in prevalence ²

Overall Prevalence

The figures below come from the New Zealand Health Survey 2002/03 and show the percentage of older people who answered yes to the question: "Have you been told by a doctor that you have ...?" The figures for the younger 55-64 year age group have been included because chronic diseases tend to develop at this earlier age among Māori, Pacific people and low income groups (Table 15).

Table 15 also shows how many older Canterbury residents may have these chronic conditions, assuming that Canterbury has the same percentages as New Zealand as a whole.

Table 1416. Prevalence of Some Chronic Diseases in the Older Population - Estimated Numbers in Canterbury in 2001, Based on New Zealand Percentages

Chronic Disease	New Zealand Percentage of Total Population*			Canterbury Estimated Number of People**		
	55-64 Years	65-74 Years	75+ Years	55-64 Years	65-74 Years	75+ Years
Heart Disease	13 - 19%	26 - 33%	37 - 44%	7,595	9,390	12,130
Stroke	2 - 4%	4 - 8%	9 - 14%	1,424	1,722	3,444
Chronic Respiratory Disease	3 - 6%	5 - 10%	6 - 11%	2,136	2,348	2,546
Arthritis	26 - 32%	42 - 50%	48 - 56%	13,766	14,398	15,574
Osteoporosis	3 - 5%	6 - 10%	9 - 14%	1,899	2,504	3,444
Cancer	6 - 9%	11 - 16%	14 - 21%	3,560	4,226	5,241
Diabetes	7 - 11%	10 - 16%	7 - 13%	4,510	4,069	2,995

Source: Public Health Intelligence 2004.

* Percentages show upper and lower confidence levels (i.e. the likely range); numbers are calculated from mid way between these and rounded to nearest 10.

** New Zealand percentages applied to the estimated Canterbury population in 2001.

² Good detailed discussions of trends in the prevalence of specific conditions can be found in Cornwall & Davey (2004), Ministry of Health (2004a) and Public Health Intelligence (2003, 2005)

Socioeconomic Differences

There is considerable evidence that the prevalence of most chronic diseases is significantly higher in lower income groups than in the population as a whole (Ministry of Health 2004a, Public Health Intelligence 2005). Overall rates in the older population may mask differences in rates among socioeconomic groups, especially within large urban populations where socioeconomic disparities are most marked.

When Christchurch suburbs were clustered into five groups according to their level of socio-economic disadvantage in 1996, it was found that older people living in the most advantaged group had a rate of 16% fewer hospital admissions and 20% fewer re-admissions from most causes than those living in the least advantaged group (Southern Regional Health Authority 1998).

This study also found that the socio-economic difference in Christchurch city death rates widened between 1984 and 1994, from a 21% difference to a 33% difference between the most and least advantaged groups (Southern Regional Health Authority 1998). This growing disparity in health between low and high income groups during this period is also reflected in more recent national studies (Public Health Intelligence 2005, Dharmalingam et al 2004).

Māori and Pacific People

The prevalence of many forms of chronic illness is significantly higher in Māori and Pacific people than in the population as a whole, especially for people in the middle and older age groups. Some of this is due to the fact that these groups are also in the lowest income groups. However the poorer health is evident even when socioeconomic status is taken into account.

As noted above, premature death rates for Maori and Pacific Island people, particularly middle-aged and older people, did not decline during the 1980s and 1990s as they did in the overall population. This led to greater disparity in health status between Maori/Pacific people and the rest of the population during this period (Public Health Intelligence 2001, 2003).

It has often been noted that Maori and Pacific people are more likely to develop the illnesses that are typical of older age while they are in later middle-age - 50 years and onwards. District Health Boards are recognising that there is a sizable group of people aged under 65 years whose needs for health and disability services are similar to those of older people. This group also includes non-Maori/Pacific people, mostly on low incomes, and may be expected to rise in coming years (see earlier section on Financial Security).

The marked inequalities in the prevalence of different illnesses and disabilities among different social and ethnic groups is an indicator of the potential that exists for improving older people's health to the level of the most fortunate. The following section looks at some common health problems for older people and identifies some of the things that could be done to reduce the illness and disability burden of each type of condition.

Heart Disease and High Blood Pressure

Coronary heart disease can cause angina and heart attacks (acute myocardial infarction) and lead to heart failure. Modifiable risk factors include high blood cholesterol, high blood pressure, smoking, being overweight, physical inactivity, diabetes, high salt intake and inadequate fruit and vegetable intake. The likelihood of having heart disease rises with age, to reach around 40% of those aged 75+ years, slightly more men than women (Statistics NZ 2004).

Rates of heart disease are higher than average among men, low income groups and Maori and Pacific peoples. Differences in rates of heart disease (and in the risk factors for heart disease, such as smoking and high blood pressure) account for much of the gap in death rates between advantaged and disadvantaged groups, and between Maori/Pacific people and the overall population (Public Health Intelligence 2003, 2005).

The overall incidence of ischaemic heart disease and deaths has been steadily dropping, reflecting the effectiveness of lifestyle changes and medical interventions (Ministry of Health 2004a, Public Health Intelligence 2004).

High blood pressure is a risk factor for heart disease, as well as stroke. The National Nutrition Survey 1997 found that around two thirds of New Zealanders aged 65+ years had high blood pressure. Less than half of these were on medication, and in only about half of these cases was the medication effective in controlling the high blood pressure (Statistics New Zealand 2004).

Men are significantly more likely than women to receive treatment for heart disease, such as aspirin, medication, angioplasty and bypass surgery (Public Health Intelligence 2004).

Canterbury's overall death rates from ischaemic heart disease for older people in the three-year period 1999 to 2001 were similar to the national average. Rates of hospitalisation were slightly lower for both older age groups, while rates of bypass operations were the same as the national average for both groups (Table 11 & Table 13).

Stroke

Stroke is a major cause of death and disability among older people and accounts for 7% of all cases of severe disability. The likelihood of experiencing stroke rises with age, peaking in the 70s. Having a first or subsequent stroke is likely to affect 3.4% of people aged 65-74 years, 6.2% of those aged 75-84 years and 9% of those aged 85 years or more. Men at all ages are more likely than women to have strokes. Māori and Pacific people have higher than average rates, and the average age of first stroke in these groups is 10 years younger than for Europeans. Socio-economic status has an impact on death rates from stroke for older men, but not older women (New Zealand Guidelines Group 2003a, Public Health Intelligence 2002, 2003, 2005, Ministry of Health 2004a).

About 20% of stroke survivors are left with disabilities severe enough to need help with daily activities, and 20% of stroke patients are discharged from acute hospital into residential care (New Zealand Guidelines Group 2003, Public Health Intelligence 2002, Cornwall & Davey 2004).

A detailed Ministry of Health study of the likely burden of stroke in the future found no particular trend in the incidence of stroke during past decades. There may have been an increase in less severe strokes and a reduction in death rates but this may partly be due to changes in diagnosis, as well as better treatment. However, even at current rates, the actual number of people having a stroke will increase as the population ages unless risk factors are addressed (Public Health Intelligence 2002, Ministry of Health 2004a).

Modifiable risk factors for stroke are similar to those for heart disease, and the rate of deaths and hospital admissions could be reduced. Even modifying one factor (e.g. reducing the salt content of manufactured foods) would have a significant impact on the incidence of strokes (Public Health Intelligence 2002). In 1997 the Ministry of Health identified a target for the New Zealand health service of 11 hospital admissions per 1,000 men aged 65+ years, and 8 admissions for women by 2010 (Ministry of Health 1997).

Organised stroke services are effective in reducing deaths, hospital admissions and long-term disability due to stroke. The New Zealand Guidelines Group guideline for the management of stroke gives a detailed analysis of the impact of stroke on health and disability support costs, and the most cost-effective mix of services (New Zealand Guidelines Group 2003, Public Health Intelligence 2002).

Canterbury had a slightly lower death rate for stroke than the New Zealand average, and much the same rate of hospital admissions for both age groups, as well as a slightly higher length of hospital stay (Table 11 & Table 13).

Diabetes

Type 2 diabetes is a health condition with potentially serious complications if not adequately controlled, including coronary heart disease, stroke, blindness, renal failure and circulatory problems leading to limb amputation. Diabetes typically develops in people around 40-50 years of age, so most people with diabetes are faced with many years of managing their condition. The incidence increases with age, particularly between 45 and 75 years (Cornwall & Davey 2004, Ministry of Health 2003).

The prevalence of diabetes in New Zealand is rising (as are some of the risk factors, such as obesity) - this represents a major potential burden to the health system. (Ministry of Health 2003).

The New Zealand Health Survey found that 10-15% older men and women had been diagnosed with diabetes. Diabetes may develop some years before symptoms are noticed and it has been estimated that only about half of those with diabetes have been diagnosed (Ministry of Health 2003).

Diabetes is twice as common among Māori and Pacific people as among people of European origin, and the condition is also strongly associated with socioeconomic deprivation. While 4% of European New Zealander's deaths are caused by diabetes, 20% of Maori and 17% of Pacific deaths are diabetes-related. The incidence of diabetes peaks at an earlier age (55-60 years) among the latter groups (Public Health Intelligence 2002b, 2002c, Cornwall & Davey 2004).

The prevalence of diabetes is projected to increase by 75% between 1996 and 2011, particularly among older people (Public Health Intelligence 2002c, Cornwall & Davey 2004).

Diabetes is a substantially preventable and controllable condition, linked to obesity, physical inactivity and smoking. The complications of diabetes can be avoided by good primary care and early intervention, including retinal screening for eye disease and management of high blood pressure. The Ministry of Health has developed indicators for good diabetes management (Ministry of Health 2003).

Deaths from diabetes in Canterbury were below the national rate for both older age groups. However death rates are not a good measure of the burden of diabetes, as they tend to under-report the contribution of diabetes to heart disease and renal failure (Cornwall & Davey 2004). Canterbury hospital admissions for diabetes were around the national average for both older groups. Length of stay in hospital was slightly higher for both age groups (Table 11 & Table 13).

Arthritis and Joint Replacement

Osteoarthritis and rheumatoid arthritis are the major cause of long-term disability among older people, limiting their mobility, independence and enjoyment of life. Around half of people aged 65+ years have some form of arthritis and many of these people need some help with everyday activities as a result. Prevalence rises with age and is more common among women (Public Health Intelligence 2004, Cornwall & Davey 2004).

It is not clear whether the incidence of osteoarthritis and rheumatoid arthritis in the population has increased over time, and there are very few New Zealand data on this condition. However it is clear that if current rates of arthritis remain steady, there will be a considerable increase in the actual number of people disabled by this condition as the population ages. A Canadian study predicted large increases in the number of people with arthritis over the next 20 years (Badley & Wang 1998).

There are no well-established modifiable risk factors for rheumatoid arthritis, which has a strong genetic component. Risk factors for osteoarthritis include joint injury, obesity, repetitive occupational joint use, and physical inactivity (Australian Bureau of Statistics 2004). A US study noted that physical activity decreases joint pain, improves function and delays disability, and that maintaining healthy weight and avoiding joint injuries reduces the risk of developing arthritis and slows down its progression (Center for Disease Control 2002).

When arthritis, hip and knee replacements are combined, they made up the second most common reason for hospital admission (in the list of selected conditions shown in Table 13) for people aged 65-74 years in Canterbury in 2003, with a rate of 154 admissions per 10,000 people. Canterbury's admission rates for arthritis and hip and knee replacement were slightly lower than or similar to the national average in both age groups. The average length of stay in Canterbury hospitals was fairly similar to national rates for both age groups, with a relatively higher length of stay for arthritis admissions in the 75+ age group (Table 11 & Table 13).

Falls and Hip Fracture

Women from the age of 80 years and men from 85 years have a 1 in 100 annual risk of a fall leading to a hip fracture. The same level of risk is run by women aged 70-79 years and men aged 75-84 years if they also have additional risk factors, including cognitive impairment, osteoporosis, usage of specific medications (especially psychotropic drugs), a history of falls or poor eyesight. People living in residential care have a 2 in 100 annual risk of hip fracture and women from 70 years and men from 75 years living in residential care should be considered as being at high risk. Women have higher rates of hip fractures, in part due to lower bone mass and a greater risk of osteoporosis following menopause. Maori and Pacific people have significantly lower than average rates of falls and hip fractures (New Zealand Guidelines Group 2003a, Cornwall & Davey 2004, Ministry of Health 1999).

It is not clear if the incidence of hip fractures is increasing among older New Zealanders. Death rates for older people from falls dropped by 60% between 1988 and 1998, however the rate of hospitalisations for falls in fact rose steadily by 37% in the same period. This may reflect better care and/or more frail older people (Ministry of Health 1999). It is clear that the growth in the number of older people in itself will inevitably result in an increase in deaths and hospital admissions for hip fracture and other injury unless active interventions are made (New Zealand Guidelines Group 2003a, Cornwall & Davey 2004).

Hip fracture in the very old significantly increases the risk of death and illness and the likelihood of further hospitalisation, and can precipitate disability and entry into residential care among the 75%-80% who survive the year following the fracture. Only 60% of those who survive 6 months recover their

pre-fracture walking ability, and only 50% recover their ability to perform physical acts of daily living (Thwaites et al 2005, New Zealand Guidelines Group 2003a).

A New Zealand study found that regional variations in the death rate following hip fracture could be reduced by reducing delay in time to surgery (Ministry of Health/NZHIS 2002).

The risk of hip fracture or other injury from falling is related to poor muscular strength and balance, poor mobility, poor eye-sight, osteoporosis and low body-weight, certain medications (e.g. sedatives, hypnotics), incontinence (particularly night-time), a hazardous housing situation (steps, lack of handholds etc), a history of smoking and a history of previous falls. (New Zealand Guidelines Group 2003a).

Older people living in the community can reduce their risk of falls and hip fractures by exercise programmes for muscle strengthening and balance training, as well as general physical activity, Tai Chi, getting help to change the household environment, getting their eyesight checked, and maintaining a healthy weight. Multi-disciplinary assessment and intervention is important, and individual exercise programmes are effective for high-risk people. For people in residential care and those who have already had a fracture, Vitamin D, calcium supplements and hip protectors are also effective (New Zealand Guidelines Group 2003b).

Canterbury's hospital admissions and average length of hospital stay for both hip fracture and falls in 2003 were similar or slightly below the national average in both older age groups. Canterbury death rates from falls injury in both age groups were similar to the national average (Table 11 & Table 13).

Chronic Respiratory Disease, Pneumonia and Influenza

Chronic respiratory diseases, such as bronchitis and emphysema, are the fourth major cause of death among people aged 65+ years, and acute bouts of flu and pneumonia are a major cause of hospital admission (Table 13). A small but significant number of people become disabled by the disease to the point of needing residential care.

Death rates are higher among low income groups and also among Maori and Pacific people, in part due to higher smoking rates in these groups. Overall death rates for men have been dropping, but more slowly for low income groups and Maori, leading to a widening disparity. Death rates have been in fact increasing for women aged 60-77 years in the low income group and have remained level among higher income women (Public Health Intelligence 2005).

Smoking is the major preventable risk factor for chronic respiratory disease. It is expected that more women will develop chronic respiratory illness in future decades, reflecting women's higher uptake of smoking in recent decades. Warm dry housing is another prerequisite for respiratory health - Canterbury has a comparatively old housing stock, much of which needs retro-fitting to make it warmer and drier.

Deaths and hospital admissions caused by influenza could be reduced by yearly flu vaccination of older people and their carers. Pneumonia is seen as a condition that could be managed more often at home without admission to hospital if the older person has access to good primary care (Dharmalingam et al 2004).

Deaths from flu and pneumonia among Canterbury's older population were similar to or slightly lower than the national average in both age groups. Canterbury's hospital admissions for chronic respiratory disease, flu and pneumonia in 2003 were lower than national rates, particularly for the 75+ age group. The length of hospital stay for respiratory conditions was similar to or lower than the national average for both age groups (Table 11 & Table 13).

Cancer

Around 20% of men and 15% of women aged 75+ years have had a diagnosis of cancer (Public Health Intelligence 2004), and around 25% of all deaths in the 65+ year age group are due to cancer (Table 10). The prevalence and incidence of cancer rises with age, with lung cancer, colorectal, prostate and breast cancer being the most common forms of cancer in older people.

Public Health Intelligence (2002a) has produced a detailed analysis of the projected changes in New Zealand death rates and incidence of cancers of different types by age group, to which the reader is referred.

The incidence of new cases of cancer is likely to increase slowly, while the actual number of new cases will increase at a faster rate than this, due to the population getting older. The overall death rate

from cancer has been dropping since the early 1980s, probably due to earlier detection and treatment for at least some cancers.

Among men in the 65-74 year age group, prostate cancer is likely to take a greater share of cancer cases, while lung and colorectal cancers are expected to reduce their share. Among women, breast cancer cases are expected to increase (but death rates to drop), while lung cancer deaths are expected to rise. Colorectal cancer is expected to reduce in incidence. The cancer burden among the 75+ year age group for men is dominated by prostate cancer, and this is likely to continue. Lung cancer is likely to drop as a proportion of deaths and new cases, although for women lung cancer is likely to increase its share of the cancer burden (Public Health Intelligence 2002a).

Canterbury's death rates for various forms of cancer were similar to or lower than the national average, as were hospital admission rates for most forms in both older age groups (Tables 11 & 15).

Memory Loss, Dementia and Delirium

Worldwide estimates of the prevalence and incidence of dementia vary, depending on how the condition is defined. A New Zealand study found that 8% of New Zealanders aged 65 and over have dementia, with the prevalence roughly doubling with every five years of life. (New Zealand Guidelines Group 2004) This is very similar to Australian and Canadian prevalence estimates for moderate or severe cases of dementia that 'cannot be ignored by the health care system' (Giles et al 2003, Hopkins et al 2004) (Table 16).

Table 15+7. Prevalence of Dementia in New Zealand, with Estimated and Projected Numbers for Canterbury for 2004 and 2021 Calculated from the New Zealand Prevalence

Age Group	% of Older New Zealanders With Dementia	Estimated Number in Canterbury 2004*	Projected Number in Canterbury 2021*
60 - 64 Years	1.0%	210	330
65 - 74 Years	3.8%	1,190	2,030
75 - 79 Years	6.4%	840	1,080
80 - 84 Years	11.0%	1,050	1,320
85+ Years**	32.0%	2,340	4,450
Total 60+ Years	7.7%	6,300	9,210

Source: New Zealand Guidelines Group 2004

* Based on New Zealand rates, with numbers rounded to the nearest 10.

** New Zealand prevalence is 23.6% for 85-89 years and 40.4% for 90-94 years, but as population numbers were not obtained for breakdowns over 85 years, prevalence in the 85+ year group was calculated as 32% (midway between 23.6% and 40.4%). The exponential increase in prevalence with age appears not to continue after 95 years (New Zealand Guidelines Group 2004).

Alzheimer's Disease accounts for 50-70% of all cases of dementia, while vascular dementia (similar to stroke but may occur in the absence of stroke) accounts for another 10-20%. The prevalence of dementia is similar for men and women (New Zealand Guidelines Group 2004).

It is not clear whether the incidence of dementia is increasing. However it is clear that at current rates of prevalence, the actual number of people with dementia will rise in the coming decades as the population ages (Table 16) (New Zealand Guidelines Group 2004).

Dementia ranges from mild to severe, and around 70% of those with dementia are cared for at home, usually by an elderly spouse or adult child, at least in the early stages of the disease (New Zealand Guidelines Group 2004). An Australian study of the prevalence of disability in older people found that of the 8% of older people with dementia, about 40% could be categorised as severe or profound, with moderate or mild cases making up the remainder (Giles et al 2003).

The New Zealand Disability Surveys estimated that in 2001 about a third (34%) of all disabled older people in residential care had psychological/psychiatric disability (mostly dementia), a rise from 27% in 1996/97. However this was the main form of disability in only 10% of all older people living in residential care. The percentage increases with age (Statistics New Zealand 2002).

Good screening is important to distinguish dementia from delirium and depression (see below), and to see if any other potentially reversible conditions exist so that appropriate treatments are given. Good management can delay the progression of the disease and support the carers (New Zealand Guidelines Group 2004).

Based on the New Zealand prevalence rates, it is expected that currently around 6,300 Canterbury older residents suffer from dementia to a significant degree. In 2004/05 around 875 (1.5%) of older Cantabrians lived in specialist dementia facilities, receiving rest home or hospital-level care. If the prevalence estimates are accurate, this suggests that a sizable group of 5,400 people with moderate to severe dementia may be living in non-specialist rest homes and long-stay hospitals, as well as being cared for at home.³

The percentage of older people using Canterbury's specialist residential dementia facilities was slightly higher than the South Island average (Table 6). Comparisons with national average client numbers cannot be made because of limitations in the national data collection. (See also Use of Services.)

Delirium is a generally reversible condition which occurs as a result of an acute disturbance of brain function. It is often precipitated by a physical illness or drugs, and thus most frequently seen in a general hospital setting (National Advisory Council on Aging 2002).

Depression and Suicide

The prevalence of depression among older people living in the community has been estimated at around 2-4% people experiencing clinical depression, rising to 10-15% experiencing depressive symptoms (Ministry of Health 1997, Evans 2003, National Council on Aging 2002).

Depression is more common among women than men, and is linked to severity of chronic illness and/or disability, low income, lifetime experience of stressful events (financial crisis, serious illness or injury and separation or divorce), as well as bereavement, loneliness and restricted social networks, living in residential care and previous mental illness (Evans 2003, Ministry of Health 1997).

A 1997 Ministry of Health report noted that depression in older adults tends to be under-treated.

A national Australian study is looking at ways of preventing depression in older people, testing previous findings that depression can be prevented by using folate and Vitamin B12, by physical activity, and by giving older people more information about the use of medication in treating depression.⁴

Suicide may be seen as a complication of depression and rates among older New Zealand men have been as high as for young men, though have remained fairly level over the decades. Suicide is more common among men, and is linked to social isolation, depression, physical illness, alcoholism and mild dementia (Ministry of Health 1997). There were 18 suicides among Canterbury older people between 1999 and 2001, a rate of 1 per 10,000, which is similar to the national rate (Table 11).

Importance of social networks - some people become more socially isolated with age, as they find it harder to get about due to poor vision or mobility, and as spouse, family and friends die. Living alone and becoming more socially isolated may be (although not always) experienced as loneliness, which can be a risk factor for depression (National Advisory Council on Aging 2002).

Elder Abuse

It has been estimated that 2%-5% of the older New Zealand population experience elder abuse, that is, action or lack of action on the part of someone in a relationship of trust to the older person, which causes harm or distress to them. Such abuse includes neglect and financial, emotional or physical abuse, and may occur in private homes or institutional facilities. Most abusers are related to the older person, most often sons or daughters. (Age Concern 2002, Ministry of Health 2003a).

Elder abuse is more likely to occur when: the abuser and abused live together, there is a history of family violence and/or unresolved previous sexual abuse, the level of dependency is increasing, there is a lack of adequate support and relief for the caregiver, and/or there has been a recent change in living arrangement. An older person's vulnerability to abuse is related to poor or failing health, cognitive impairment and lack of family, financial or community support. People more likely to abuse may have a history of violence, alcohol or substance abuse or mental illness, may be financially dependent on the older person, in poor health and socially isolated (Ministry of Health 2003a).

Using the estimated prevalence of 2%-5% of the older population, it may be calculated that between 1,250 and 3,000 older Cantabrians experience elder abuse.⁵

³ In Australia around 60% of 'nursing home' (long-stay hospital) residents and 28% of 'assisted hostel' (rest home) residents are estimated to have dementia (Cornwall & Davey 2004)

⁴ See beyondblue: the national depression initiative, of The Beyond Ageing Project at the Centre for Mental Health Research at the Australian National University (www.anu.edu/cmhr/beyond_ageing)

⁵ Based on estimated population aged 65+ years in 2004

Impaired Vision and Blindness

The Royal New Zealand Foundation for the Blind has around 960 registered members aged over 65 years in Canterbury, or 1.6% of the 65+ population. Of these, 79% were aged 80 years or more. The number of people aged 65+ years registered as blind or visually impaired is the same as the New Zealand average (1.7%) (Royal New Zealand Foundation for the Blind 2004).

The New Zealand Disability Survey estimated that 8% of the Southern Region population aged 65+ years had impaired vision⁶ in 2001, slightly higher than the national rate (7%). People aged 75+ years were twice as likely to have impaired vision than those aged 65-74 years (Statistics New Zealand 2002).

Having poor vision can limit older people's ability to drive, socialise, read or manage everyday activities, leading to isolation and depression and a higher risk of falls, as well as a greater need for support services. Some forms of impaired vision may be preventable or controllable by screening and early intervention for high-risk people, including diabetic retinopathy and some forms of glaucoma.

Cataracts are the leading cause of blindness in older people and their incidence increases with age. Women are more at risk than men and diabetes is a major risk factor. Impaired vision due to cataract formation can usually be improved by cataract surgery, and delay in receiving treatment may increase the severity of the disease and the level of functional impairment. Rates of surgery have increased since the mid 1980s (Cornwall & Davey 2004).

Estimates of the total need for cataract surgery vary markedly depending on the threshold levels that are used for lens opacity, visual acuity/ability to see and patients' concern (McCarty et al 1999).

Active investigation of impaired vision in older people is important for identifying those cases where it can be prevented, managed and/or treated. A UK study of people aged 75+ years living in the community found that about 12% were visually impaired. For nearly a third of these people, impairment could be reduced by corrective lenses and for another quarter it could be reduced by cataract surgery. Another third (3.7% of the 75+ year old population) had age-related macular degeneration, for which little preventive or curative intervention is possible (Evans et al 2004).

Compared to the national average, Canterbury DHB appeared to have a markedly lower rate of hospital admissions for cataract operation for both older age groups in 2003 (Table 13).

Continence

While mostly a symptom of other diseases, the prevalence of incontinence rises with age. A New Zealand study found that 12% of people aged 65+ years had significant urinary incontinence, rising to 22% among people aged 80+ years. About 3% of people aged 65+ years had faecal incontinence (Campbell et al 1985). Similar rates were found in an international review of the prevalence of severe/significant incontinence: 10% of women and 4-7% of men aged 65+ years (Hunnskaar et al 2000).

Incontinence in older people is strongly linked to frailty, physical disability, cognitive impairment, stroke and heart failure (Fonda et al 1999). About a third of rest home residents and two-thirds of long-stay hospital patients have urinary incontinence, with an estimated 10-30% having faecal incontinence. (Department of Health c2000) The onset of incontinence has been identified as one of the triggers for people entering long-term residential care, along with dementia and mobility problems (Thom et al 1997, Australian Department of Health & Ageing 2003).

Some incontinence may be transient and due to delirium, infection, medication, restricted mobility or other causes (Fonda et al 1999). Active investigation and treatment/management of incontinence, even in the very old and frail, can help to reduce the likelihood of entry to residential care and the need for continence products, as well as improve quality of life and reduce stress on carers. An Australian study found that most older people living in residential care who were incontinent had never sought or received a detailed continence assessment (Australian Department of Health & Ageing 2003, Thom et al 1999).

Based on the New Zealand prevalence rates, it is estimated that around 7,350 Canterbury residents aged 65+ years have significant urinary continence problems, including 1,400 people aged 85+ years. Around 200 older people are estimated to have faecal incontinence.

No national, regional or DHB-level data is routinely or easily available on the number of people receiving continence services in New Zealand. However some one-off studies are being done.

⁶ Impaired vision is defined as having difficulty seeing newsprint and/or the face of someone across a room despite corrective lenses.

Disability

While more attention tends to be paid to the sometimes more short-term illnesses such as heart disease and cancer, it is long-term disabling conditions such as dementia, stroke and arthritis that often have a greater impact on health and support services, as well as on the lives of older people (Cornwall & Davey 2004).

Statistics New Zealand have undertaken two major sample surveys of New Zealanders with disability, in 1996/97 and 2001, and used these to estimate the number of people with disabilities in the overall population. These surveys are too small to provide DHB-level data, but some regional level data is available (based on the former Transitional Health Authority areas).

In this section estimates of the number of disabled older people in Canterbury have been based on regional and national data from these surveys wherever possible.⁷ Please note that these are rough estimates only.

Prevalence of Disability

Just over half (54%) of all New Zealanders aged 65+ years in 2001 reported some form of long-term disability that limited their activity.⁸ Just over a quarter (27%) of people aged 65+ years had a moderate disability, while a further 12% had a severe disability that needed daily assistance with personal care (Table 17).

Table 1618. New Zealanders Aged 65+ Years with Disabilities as a Percentage of the Total Older Population (Disabled and Non-Disabled), by Residence and Level of Severity, 1996/97 and 2001

Level of Disability	1996/97			2001		
	Living in Private Households	Living in Residential Care	Total	Living in Private Households	Living in Residential Care	Total
Mild	24.5%	0.8%	25.3%	14.9%	Nil	14.9%
Moderate*	15.9%	1.3%	17.3%	25.9%	0.9%	26.8%
Severe**	6.1%	3.6%	9.7%	7.5%	4.7%	12.2%
All Disability Levels	46.6%	5.7%	52.3%	48.3%	5.6%	53.9%

Source: Statistics New Zealand - New Zealand Disability Surveys

* Moderate = need special aid or equipment

** Severe = need daily help with bathing, meals etc

Ethnicity - the rate of severe disability for Maori over 65 years is significantly higher than for the total population, and Pacific peoples in this age range have a higher rate of moderate disability than the total population (Ministry of Health 2002). Data on socio-economic differences in disability are not available.

Gender differences - women have the same rate of disability as men in the 65- 74 age group, but in the 75+ age group women have a higher disability rate than men (Cornwall & Davey 2004).

Age - the severity of disability rises with age: in the Southern Region 27% of people aged 65-74 years who lived in their own home had moderate or severe disability in 2001, rising to 49% of people aged 75+ years.

Where people live - most (90%) of all older New Zealanders with disabilities lived in private households in 2001; even 60% of those with severe disabilities lived in a private household. In 2001 about 6% of older New Zealanders lived in residential care due to disability - much the same proportion as in 1996/97. However it is noticeable that the severity level of people in residential care increased in that period: severely disabled people made up 84% of all disabled people in care in 2001, compared to 63% in 1996/97 (Table 17).

Disability in the Southern Region - regional data from the New Zealand Disability Surveys are available only for people living in private households, not for those in residential care. In 2001 the Southern

⁷ Data from 1996/97 and 2001 surveys are mostly from the Reference Report publications on Statistics NZ website (www.stats.govt.nz) plus some specific data analyses done for SISSAL by Statistics NZ.

⁸ The New Zealand Disability Surveys define 'disability' as any self-perceived limitation in activity resulting from a long-term condition or health problem, lasting or expected to last six months or more and not completely eliminated by an assistive device (eg hearing aid)

Region had a slightly higher rate of disability in people aged 65+ years living at home than the national average: 49.6% compared to 48.3%. In both older age groups the Southern Region had slightly higher rates of moderate disability, lower rates of mild disability and much the same rates of severe disability as the New Zealand average (Table 17 shows national figures and Table 18 Southern Region figures).

Canterbury - estimates of the number of older Canterbury residents who have disabilities have been calculated, based on Southern Region rates for people living in private homes and on New Zealand rates for those in residential care (Table 18).

Table 17-19. Estimated Number of Disabled People Aged 65+ Years, by Residence and Level of Severity, Southern Region, New Zealand and Canterbury, in 2004

Level of Disability	Disability Rate, 2001 (as % of 65+ Population)		Estimated Number with Disability in Canterbury, 2004*		
	Living In Private Households (Southern Region)	Living In Residential Care (New Zealand)	Living In Private Households	Living In Residential Care	Total
Mild	13.5%	0%	8,760	-	8,760
Moderate**	29.3%	0.9%	19,050	550	19,600
Severe**	7.7%	4.7%	5,020	2,880	7,900
All Disability Levels	49.6%	5.6%	32,830	3,430	36,260

Source: Statistics New Zealand

* Figures are based on the percentage of disabled people in the Southern Region and New Zealand populations aged 65+ years in 2001, applied to the estimated 65+ age group population of Canterbury in 2004. Numbers rounded to the nearest 10

** Moderate = need special aid or equipment; Severe = need daily help with bathing, meals etc

The New Zealand Disability Survey estimated that 97% of people living in residential care in 2001 had some form of disability. Based on estimates from the New Zealand Disability Survey, we might expect about 3,500 people in residential care in Canterbury (3,430 + 3%). However actual numbers of Canterbury people receiving subsidies for all forms of long-term residential care in 2004/05 are higher, around 4,570 (or possibly 5,370 if private paying rest home residents are included) (see Table 6).

This may be explained in part by Canterbury's higher proportion of older people. It is also likely that if the Southern Region has a higher percentage of older people living at home with disability than the New Zealand average, there will also be a higher rate of disability among Canterbury people in residential care, so that applying the national residential care rate is likely to under-estimate numbers for South Island DHB areas.

It is impossible to draw any conclusions from these data as to whether Canterbury has an appropriate level of provision of residential care for its older population, without more information on the assessed level of need of these residents relative to those in other parts of New Zealand. The implementation of a standard national assessment tool will help to provide this information.

Type of Disability

Nearly all New Zealanders in residential care and 70% of people living at home in 2001 had more than one disability. Around 30-40% of people aged 65+ years living at home in the Southern Region have problems with mobility and agility, 22% have hearing impairment, 8% have vision impairment and 7% have problems with memory (Table 19).

No easily available data exists at DHB level on the types of disability among older people. However Table 19 estimates the number of older Canterbury residents living at home and in residential care who may be experiencing various types of disability, based on regional and national rates from the New Zealand Disability Surveys 2001.

Table 1820. Percentage and Number of Type of Disability among People Aged 65+ Years, by Residential Status, Southern Region, New Zealand and Canterbury, 2004

Type of Disability	Disability Rate, 2001 (as % of 65+ pop.)			Estimated Number in Canterbury, 2004*		
	Living in Private Households (Southern Region)	Living in Residential Care (New Zealand)	Total 65+ Years	Living in Private Households	Living in Residential Care	Total 65+ Years
Mobility**	38.2%	91.4%	41.3%	21,650	4,180	25,830
Agility**	29.5%	88.7%	32.9%	16,720	4,050	20,770
Partially Sighted/Blind***	7.7%	45.2%	9.9%	4,360	2,070	6,430
Hearing Impaired/Deaf***	22.1%	40.4%	23.1%	12,530	1,850	14,380
Speaking	2.8%	27.2%	4.2%	1,590	1,240	2,830
Remembering	6.8%	53.3%	9.5%	3,850	2,440	6,290
Learning Disability	2.9%	48.0%	5.5%	1,640	2,190	3,830
Psychiatric/Psychological	2.5%	32.7%	4.2%	1,420	1,490	2,910
Intellectual	0.9%	10.6%	1.5%	510	480	990
Disability Type Not Elsewhere Classified	8.0%	15.4%	8.4%	4,530	700	5,230

Source: Statistics New Zealand

* Figures are based on the percentage of disabled people in the Southern Region and New Zealand populations aged 65+ years in 2001, applied to the older population of Canterbury in 2004. One person may be counted several times, for different disabilities. Numbers are rounded to the nearest 10

** Mobility = walking, carrying weight, climbing stairs. Agility = bending, dressing, grasping, getting into bed.

*** Defined as having difficulty hearing what is said in a conversation despite hearing devices, and as having difficulty seeing newsprint and/or the face of someone across a room despite corrective lenses.

Need for Services

The 2001 New Zealand Disability Survey gives some indicators of need for services. The mostly higher rates in the Southern Region may reflect the region's higher rates of disability. Looking just at people living in private homes, the sample survey found:

- **Living alone** - 33% of the 65-74 year age group and 46% of the 75+ group live alone in the Southern Region - substantially higher than the national averages of 24% and 41%. (However these differences are not so marked in the 2001 Population Census- see Table 4)
- **Use of special equipment⁹** - 46% of the 65-74 year group and 67% of the 75+ year group in the Southern Region use special equipment, a little higher than the national rate of 42% and 65% respectively.
- **Unmet need for equipment** - 12% of the 65-74 year and 17% of the 75+ year group in the south reported an unmet need for special equipment, compared to 13% and 14% respectively nationally.
- **Receiving help with everyday activities** - 48% of the 65-74 year and 67% of the 75+ year group in the south received help with everyday activities, compared to 44% and 67% nationally.
- **Type of help received** - 7% of the 65-74 year and 11% of the 75+ year group in the south received personal cares (7% and 12% nationally).

Further discussion of the need for long-term support services may be found in the section on the Use of Services.

⁹ A definition of 'special equipment' can be found in the survey questionnaires in Statistics NZ (2002) Disability Counts 2001. Wellington:Stats NZ

Unpaid Carers

People's need for formal support services is clearly influenced by the amount of informal support they receive from spouses, family and other unpaid carers. It has been estimated that formal paid services may account for only one fifth of the total care resources used by older people (Cornwall & Davey 2004).

Several factors affect the likely future availability of unpaid care-givers in different ways, including increasing life expectancy for older men, smaller families and more separated families, women leaving child-bearing until later or entering the paid workforce and cultural differences in parents living with adult children (Cornwall & Davey 2004).

Carer stress is an increasingly important factor for DHBs to consider when implementing an 'ageing in place' vision of long-term care for older people. UK studies looking at the best mix of home-based and residential services for an older population used 'carer stress' as one outcome indicator, which sometimes could only be optimised at the expense of other outcomes, such as the older person's preferences and vice versa (Davies 1997).

Trends in the Rate of Disability

National figures show a shift towards greater severity of disability in older people, among both those living at home and those in residential care. In the 1996/97 survey 22% of all older New Zealanders living at home reported moderate or severe disability - by 2001 this had risen to 33%. Similarly the proportion of residential care residents with severe disability rose from 63% in 1996/97 to 84% in 2001 (Table 17).

Although rates of moderate and severe disability have risen, the percentage of older people reporting mild disability has dropped, from 25% to 15% of home-dwellers. This means that the overall disability rate has risen only slowly over the five-year period, from 52.3% to 53.94% of all people aged 65+ years (Table 17).

Overseas studies give conflicting evidence on trends over time in the rate of disability among older people. United States data shows an increase in the average length of disability-free life while Australian data suggest a rise in disability among older people (Cornwall & Davey 2004, Giles et al 2003). Overall the evidence points to lower rates of severe disability for older people in the future, but a rise in light and moderate disability during the extra years at the end of life. Current rates of smoking, obesity and insufficient exercise may however act to increase disability in the older population in the future.¹⁰

Even if the rates remain the same as in 2001, the simple fact of an increasing older population means a substantial increase in the actual number of people with disabilities at all levels in coming decades.

An Australian study has estimated the future number of disabled older people, based on the prevalence of the major disabling conditions (Table 20) (Giles et al 2003). These percentages were applied to Canterbury's projected 65+ year old population to estimate the likely numbers of disabled people in 2004 and 2021 (Table 21). These figures are necessarily rough, but illustrate the impact that an ageing population will have on disability support services.

¹⁰ See Cornwall & Davey (2004) for a detailed discussion of the overseas literature on trends in disability rates and its implications for the New Zealand older population.

Table 1921. Estimates of the Percentage of Older People Disabled by Specific Conditions, by Age Group and Severity of Disability, Australia 2001

Disabling Conditions	Profound/Severe Disability			Moderate/Mild Disability		
	65-74 Years	75-84 Years	85+ Years	65-74 Years	75-84 Years	85+ Years
Musculoskeletal	4.05%	8.22%	19.93%	12.05%	11.99%	8.87%
Nervous System	1.23%	4.64%	15.87%	0.47%	0.31%	0.04%
Respiratory	0.95%	1.31%	2.39%	2.43%	2.69%	0.56%
Circulatory	0.88%	2.62%	6.69%	3.66%	3.65%	2.07%
Stroke	0.87%	2.03%	5.44%	0.09%	0.64%	0.46%
Vision	0.51%	1.44%	3.50%	0.53%	1.95%	0.80%
Psychiatric	0.49%	0.91%	1.58%	0.48%	0.38%	0.03%
Cancer	0.26%	0.33%	0.80%	0.58%	0.64%	0.41%
Hearing	0.22%	0.20%	1.93%	3.04%	4.39%	3.06%

Source: Giles et al 2003

Table 2022. Estimated Number of Canterbury Residents Likely to be Disabled by Specific Conditions by Age Group, 2004 and 2021, Based on Australian Prevalence Rates

Disabling Conditions	2004						2021					
	Profound/Severe Disability			Moderate/Mild Disability			Profound/Severe Disability			Moderate/Mild Disability		
	65-74 Years	75-84 Years	85+ Years	65-74 Years	75-84 Years	85+ Years	65-74 Years	75-84 Years	85+ Years	65-74 Years	75-84 Years	85+ Years
Musculoskeletal	1,230	2,160	1,700	2,380	1,260	2,770	3,650	6,440	2,480	3,470	560	1,230
Nervous System	370	660	960	1,340	1,000	2,210	140	250	60	90	-	10
Respiratory	290	510	270	380	150	330	740	1,300	560	780	40	80
Circulatory	270	470	540	760	420	930	1,110	1,950	750	1,060	130	290
Stroke	260	470	420	590	340	760	30	50	130	190	30	60
Vision	150	270	300	420	220	490	160	280	400	560	50	110
Psychiatric	150	260	190	260	100	220	150	260	80	110	-	-
Cancer	80	140	70	100	50	110	180	310	130	190	30	60
Hearing	70	120	40	60	120	270	920	1,620	910	1,270	190	430

Source: Based on Australian rates in Table 20 and rounded to nearest 10.

Use of Services

Impact of an Ageing Population on the Need for Services

It is difficult to get nationally consistent data at DHB-level on expenditure by age of client/patient for most services, so much of the following analysis is based on national data, except where noted.

Total expenditure per head on health and disability support services rises with age. Expenditure levels are similar for men and women, but men use more personal health services and use them at younger ages, while women use more disability support services and at older ages (Ministry of Health 2002).

There is growing evidence that acute medical/surgical costs do not rise with age so much as with proximity to death. Around a quarter to a third of health expenditure costs are incurred by people in their last year of life. The rise in life expectancy in the 'young-old' 65-74 year age group has pushed this last year of life out to older ages (Ministry of Health 2002, Cornwall & Davey 2004).

Acute medical/surgical care costs per person tend to peak around 75-79 years and then taper off. Expenditure on long-term support and residential care however tends to increase steadily with older age. This suggests that, as the population ages, relatively greater expenditure increases will be needed in long-term disability support than in acute health care (Ministry of Health 2002).

A Ministry of Health study of the likely impact of the ageing population on health costs found that:

- Population ageing will put inevitable pressure on health spending, making it likely to increase as a percentage of GDP for this reason alone.
- Older people's share of health expenditure is likely to increase from 40% to 63% because of the increase in the older population. However the cost per older person is likely to drop by around 25% relative to younger people, because until 2025 the main increase will be of the relatively healthy 65-74 year age group.
- A more significant pressure on health costs comes from the growth in health spending and service coverage that is independent of population aging - i.e. new technology and wage costs, and increases in volumes and scope of service coverage. These contribute more to health costs than population ageing per se.

The study recommends that policies to maximise the benefits to society of the ageing population should focus on interventions to reduce disability rates. Improvements in health status and life expectancy will have complex effects on health spending, as they may increase the number of people living in a state of mild/moderate disability.¹¹ Both reducing disability and extending life are desirable, yet it may be a wiser use of resources to concentrate on the former relative to the latter:

"... plausible reduction (e.g. 0.5% per year...) in disability prevalence could offset a substantial proportion of the anticipated increase in total spending pressure..."

(Public Health Intelligence 2004d, page 34)

The pressure that an ageing population will put on health and disability support services in coming decades makes it imperative that DHBs find the most cost-effective ways of organising and delivering these services within their resources, so that older people's needs are met as effectively, fairly and efficiently as possible.

This is a particularly urgent imperative for Canterbury DHB, given the reduction in relative funding for Canterbury in coming years as national funding is allocated according to population share.

There is a considerable literature on ways of managing the demand for both specialist hospital care and long-term residential care, and on the most cost-effective mix of primary, home-based, hospital and residential services. This literature is too extensive to summarise here.¹² It includes the Canadian multi-site National Study of the Cost-Effectiveness of Homecare, (Hollander and Chappell 2002) the Manitoba Centre for Health Policy's analyses of routine health datasets, the Personal Social Service Research Unit's UK work on the most cost-effective mix of long-term community care for older people, and UK NHS work on making more cost-effective use of acute hospital services by developing

¹¹ An example is the reduction in deaths from heart attack but increase in cases of chronic heart failure.

¹² See CDHB paper: Planning health and disability support services for older people over the next 20 years - a brief literature review

'intermediate care', home-based services and stronger rehabilitation services for older people (See also section on Home-Based and Residential Support Services).¹³

Primary Health Care

Data on the use of primary health care services in Canterbury (such as GP visits, pharmaceuticals and laboratory tests) are not routinely or consistently available by age breakdown. The following is mostly based on national New Zealand Health Survey data (Ministry of Health 2002).

The use of and expenditure on general practice services rises with age. In 2000/01 both men and women aged 85+ years visited a GP around nine times a year, compared to 6-7 visits for people aged 65-74 years.

Most (71%) people aged 65+ years held Community Services Cards, entitling them to a subsidy on GP visits. Another 5% had High Use Health Cards, since they visit a GP more than 12 times a year.

The pattern for pharmaceutical and laboratory test usage is similar to that for GP visits.

It has been estimated that primary health care costs for older people will rise by 31% over the period 2001 to 2021 due to population ageing, an average of 1.6% a year, with higher costs being incurred by women than men (Cornwall & Davey 2004).

Hospital Specialist Services¹⁴

Inpatient and Daypatient Services

A third of all New Zealand publicly funded medical and surgical hospital admissions¹⁵ in 2000/01 were for people aged 65 years or more. Men in all older age groups were more often admitted than women.

Admission rates have been rising faster for older New Zealanders than for people under 65 years in recent decades. Admission rates for older people rose by around 3.1% per year between 1988 and 1997, and at 4.2% per year between 1997 and 2001.

There is some evidence that the rate of re-admissions for older people also rose in the 12-year period 1988-2001, since the ratio of hospital admissions to number of patients rose by 1% per year. Admission rates for older Maori and Pacific people rose even faster, by 6.1% and 9.6% per year respectively.

The per capita cost of hospital admissions increased in that period. There has been a shift away from less complex or costly forms of surgery towards more costly and complex forms of treatment, and an increase in cardiac and orthopaedic surgery.

Figure 2 shows how Canterbury DHB compared to other DHBs and the national average in its hospital admission rates for older people in the three-year 1998/99 to 2000/01 period, after differences in case complexity, age, ethnic and socioeconomic structure of the DHBs' population were taken into account. Canterbury had a higher than average number of hospital discharges for older people compared to the national average (the 1.00 line).

Older people are spending less time in hospital after treatment than in the past, though this trend, which started around 1988, was starting to tail off by 2001. Some of this reflects the rapid increase in day surgery through the 1990s.

A Manitoba study of hospital use by older people found that a minority of 5% of older patients used 78% of the total days stay (Menec et al 2002).

It has been estimated that hospital costs will rise by around 42% between 2001 and 2021, due to population ageing, an average rise of 2.1% per year, with higher costs being incurred by men than women (Cornwall & Davey 2004).

There has been little reported analysis as to the impact that the drop in length of hospital stay may have had on re-admission rates or on the need for post-discharge community services, such as district nursing, allied health and home support (Wainwright 2002).

¹³ See www.umanitoba.ca/centres/mchp for Manitoba Centre for Health Policy publications, www.pssru.ac.uk for Personal Social Services Research Unit reports, and www.modern.nhs.uk for UK's National Health Service reports. Wainwright (2003) summarises much of the literature on the most cost-effective mix of long-term care services.

¹⁴ ¹⁴ Nationally consistent data on inpatient and daypatient usage are available by age group at DHB level, but lack of time prevented detailed analyses for this review, so the data presented is almost all at a national level. Data for this section are taken from the Ministry of Health's statistical report on older people's health: Ministry of Health (2002).

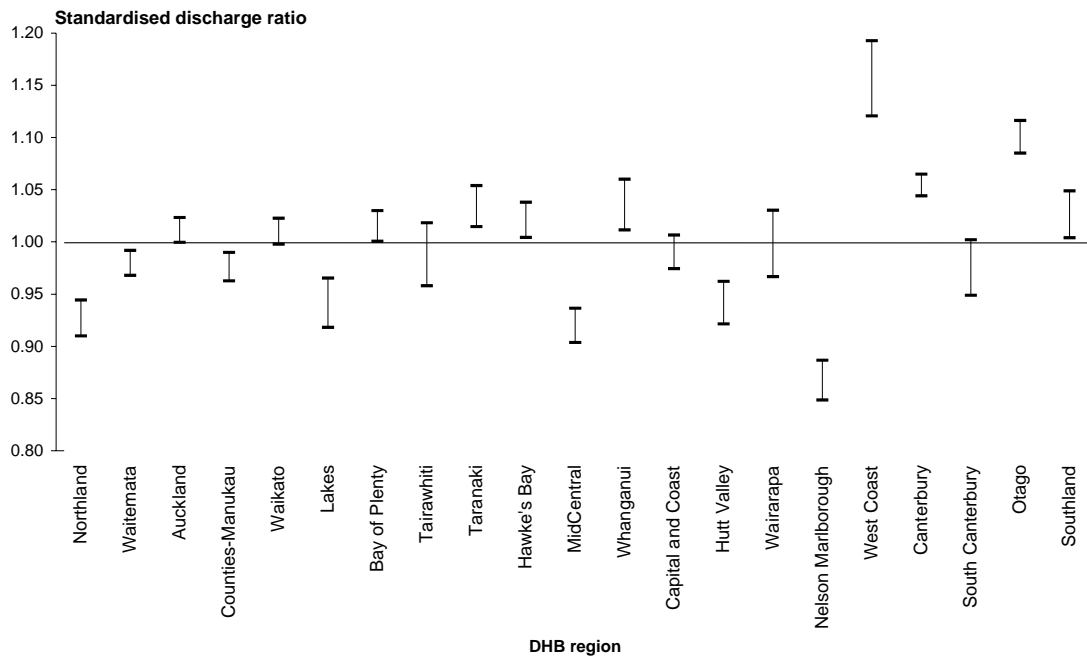
¹⁵ Including day-patients but excluding outpatients and maternity admissions

Outpatient and Emergency Department Services

Older people use outpatient services considerably more than young people, accounting for 25% of medical/surgical outpatient attendances and expenditure. However older people use Emergency Departments less frequently than younger people (Ministry of Health 2002).

The lack of a client-level national data collection for hospital outpatient services precludes any DHB or even regional comparisons.

Figure 2. Standardised Case-Weighted Discharge Ratios For People Aged 65 and Over, by DHB, 1998/99 to 2000/01 Combined (99% Confidence Intervals)



Source: Ministry of Health 2002.

Specialist Assessment, Treatment and Rehabilitation (AT&R) Services for Older People

Specialist AT&R services for older people have developed differently around New Zealand over the past 15 years, making it difficult to compare DHB or regional expenditure and utilisation rates. Some AT&R services are strongly community-based, while others (such as Canterbury) have focussed more on providing specialist consultation services within the general hospital. Some AT&R units have provided services for younger people with disabilities as well as for people over 65 years, while some (including Canterbury) provide services solely for older people (Ministry of Health 2004c).

A major problem in comparing expenditure on specialist AT&R services per head of older population to a national average has been that DHBs in the former Southern and Central Regions include mental health services for older people within their specialist AT&R service, while DHBs in Northern and Midland Regions include these services as part of the mental health services.

Specialist services for older people provide comprehensive multi-disciplinary assessment, treatment and rehabilitation for the minority (around 7%) of older people who have a complex mixture of health problems. Specialist services play a crucial role in advising and supporting the primary, community health and disability support sector in the best practice management of health conditions in older people (Ministry of Health 2004).

The earlier discussion of specific illnesses has highlighted the importance and cost-effectiveness of early and comprehensive diagnosis and intervention, even for people in the oldest age groups and those in residential care, to prevent conditions worsening and to reduce the need for more complex and costly services.

Canterbury spent just under \$26 million on AT&R services in 2003/04, or \$428 per head of older population. This includes AT&R services for mental health conditions. This was the highest per capita expenditure among South Island DHBs. However expenditure comparisons among DHBs need to be treated with caution as services are not comparable, especially between large and small DHBs (Table 22 and Table 23).

Specialist Mental Health Services

A recent NZHTA literature review of the effectiveness of specialist mental health services for older people found that the most positive outcomes were noted in community settings, particularly for multidisciplinary team assessment and treatment of depression, and comprehensive case management of dementia. In terms of inpatient settings, multidisciplinary team approaches in specialist units had the best patient outcomes, and behavioural modification programmes within specialist units and done by multidisciplinary teams were also effective. For patients and their caregivers, holistic services tailored to the individual and which included training and education as well as assessment and treatment were most effective (Ahuriri-Driscoll et al 2004),

As described above, the different organisation of specialist mental health services for older people around New Zealand makes it difficult to compare expenditure on or utilisation of these services among DHBs, or even to estimate total expenditure for the whole country (Ministry of Health 2004b, 2004c).

Comparable DHB and national data exist for expenditure on specialist residential facilities for dementia at both rest home and long-stay hospital level. However comparisons among DHBs need to be treated with caution because of the differences in their size and population.

It must be noted that a sizeable number of people with less severe dementia live in 'ordinary' rest homes and long-stay hospitals, as well as at home (see earlier section on Dementia).

In Canterbury 875 people lived in specialist dementia units in 2004/05 (658 at rest home level and 217 at hospital level). These residents comprised 1.5% of the total population aged 65+ years, slightly more than the South Island average of 1.2% (Table 6). It is difficult to compare South Island DHB areas as people with profound disability may shift from smaller DHBs to the specialist facilities that are only sustainable in larger cities: this needs further investigation. Canterbury DHB spent over \$12.3 million on specialist dementia services in 2003/04 or \$204 per head of older people, slightly more than the South Island average of \$189 per head (Table 22 and Table 23).

Community Nursing, Rehabilitation, Intermediate Care and Short-Term Home Support

The combination of rising admissions and re-admissions and a declining length of hospital stay have meant a growth in district nursing, community-based physiotherapy and other allied health services and short-term home support, to enable people to leave hospital earlier and recover at home. Older people make up over 75% of district nursing and short-term home support patients.¹⁶

Specialisations have developed in continence treatment, stomal care, home oxygen services, chronic/complex wound care, IV therapy, enteral and parenteral feeding and palliative care, as well as in rehabilitation and equipment.

Many DHBs have also developed various forms of 'intermediate care' - that is, short-term non-acute (step-up/step-down, convalescence) inpatient services in general hospitals, rural hospitals or private residential care facilities. 'Intermediate care' is also seen as a service that preferably is delivered in a person's home, rather than an institution, and in this respect the concept overlaps somewhat with home-based 'slow-stream' rehabilitation, 'rapid response' services to avoid the need for hospital admission and other forms of intensive nursing, medical or rehabilitation care delivered at home.

Innovative home and community-based services are being rapidly developed around New Zealand in an ad hoc manner, and it is difficult to get accurate or comparable data on expenditure or usage.

The lack of a national client-level data collection for community services and non-acute inpatient services makes it very difficult for DHBs to assess their relative expenditure on or usage of these services. It also makes it difficult to assess the impact of any planned changes that DHBs might make to the ratio of inpatient, outpatient and community-based services. Canterbury is more fortunate than other DHBs in having a Central Coordination Centre, which from 2005 has been collecting good information on the use and expenditure of short-term home-based services.

A 2001 national joint DHB/Ministry of Health costing study estimated that the actual cost to DHBs of delivering short-term community services was around 20% more than was formally allocated to those services. (Ding 2001, Wainwright 2002)

¹⁶ Based on analysis of Christchurch data.

Table 2123. Estimated Expenditure on Services for Older People, by South Island DHB 2003/04*

Note these figures are approximations only, as the table is based on several different sources

Note also that expenditure for many services had risen by 2004/05 - see Table A1 & A2 in Appendix A

Service	Canterbury \$	Nelson Marlborough \$	Otago \$	South Canterbury \$	Southland \$	West Coast \$
AT&R/Specialist Older Persons' Services	25,976,220	5,159,440	10,657,470	3,235,160	4,269,380	1,702,570
Needs Assessment & Service Coordination	2,367,480	594,000	822,360	296,880	363,340	110,470
Home Help	9,145,356	2,461,046	4,363,083	1,405,648	2,032,685	1,124,764
Personal Care	4,784,190	1,818,472	2,454,354	1,254,926	1,192,599	473,903
Carer Support	2,072,310	114,420	1,178,703	394,485	677,563	179,742
Respite Care	1,081,501	289,346	426,122	141,660	264,910	59,998
Equipment	628,710	333,480	473,650	61,490	223,440	104,710
Day Programmes	311,523	260,566	52,060	53,200	60,835	8,909
Residential - Rest Home	29,038,630	6,214,210	13,063,640	3,568,600	5,695,980	2,161,080
Residential - Long-Stay Hospital	33,031,400	9,352,230	12,181,710	3,813,210	6,318,820	2,948,280
Dementia Unit - Rest Home	7,436,240	1,304,820	2,463,200	785,250	1,291,250	96,260
Dementia Unit - Hospital	4,893,960	1,832,910	2,568,140	704,650	891,420	747,630
Other**	1,086,350	18,520	282,080	143,870	100,940	298,180
TOTAL	121,853,870	29,753,460	50,986,572	15,859,029	23,383,162	10,016,496

Source: HealthPAC CCPS (see Appendix) and DHB Price Volume Schedule 2003/04

* Figures for Home Support, Carer Support, Respite Care, Residential Care and Dementia Units (which have uncapped/ (opened budgets) have been based on actual expenditure from HealthPAC's CCPS database for the year ending 30 June 2004 (annualised on the 9 months from 1 October 2003 when the services were devolved to DHBs to 30 June 2004). Figures for the remaining services (which mostly have set yearly budgets) have been based on the Price Volume Schedule for DHBs for 2003/04. Figures for Equipment are underestimated as this funding is held by Ministry of Health and not all is allocated to specific DHBs. Numbers have been rounded to the nearest 10.

** Includes Disability Information & Advisory Services and other unspecified community services.

Table 2224. Estimated Expenditure on Services for Older People per Head of 65+ Population by South Island DHB, 2003/04

Note these figures are approximations only, as the table is based on several different sources

Service	Canterbury \$	Nelson Marlborough \$	Otago \$	South Canterbury \$	Southland \$	West Coast \$	South Island \$	New Zealand \$
AT&R	428	272	416	345	309	399	384	
NASC	39	31	32	32	26	26	34	
Home Help	151	130	171	150	148	267	155	Not avail.
Personal Care	79	96	96	134	87	112	90	Not avail.
Carer Support	34	6	46	42	49	43	35	Not avail.
Respite Care	18	15	17	15	19	14	17	Not avail.
Equipment	10	18	18	7	16	25	14	Not avail.
Day Programmes	5	14	2	6	4	2	6	Not avail.
Residential - Rest Home	479	329	511	380	413	513	451	381
Residential - Long-Stay Hospital	544	495	476	406	458	700	510	500
Dementia Unit - Rest Home	123	69	96	84	94	23	101	68
Dementia Unit - Hospital	81	97	100	75	65	177	88	48
Other	18	1	11	15	7	70	15	Not avail.
TOTAL	2,008	1,574	1,992	1,689	1,695	2,371	1,900	

Source: Based on Table 22. See Appendix A

Home-Based and Residential Support Services

Although a national client-level data collection exists, it has been managed primarily as a payment system and so far is able to provide only limited data that is nationally consistent or historically reliable, particularly for non-residential services. This limits the information available to DHBs on their expenditure on and usage of these long-term services.

Tables 22 and 23 show the expenditure on long-term support services for older people for 2003/04. Appendix A gives more detail and the actual expenditure and client numbers for 2004/05.

Although several recent reports have considered the impact of an ageing population on the need for services (e.g. Cornwall & Davey 2004, Public Health Intelligence 2004d), lack of reliable national or local data has limited any detailed analysis of the use of long-term support services by older people in New Zealand.

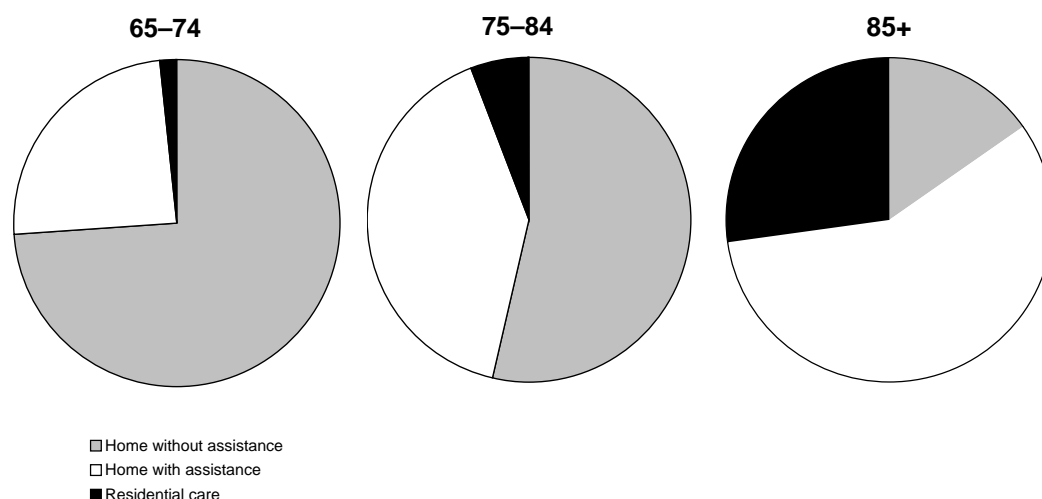
Considerable work has been done in other countries on the likely need for and most cost-effective mix of long-term support services for older people.¹⁷ Policy research from Canada (Hollander & Chappell 2002), the UK (Davies 1997) and Australia (Turvey & Fine 1996, Howe & Gray 1998) suggests that:

- It is difficult for a funder to know if they have the right 'mix' of home-care and residential care services, or to change the relative allocation of funding, unless the needs of people using these services have been assessed using a standard needs assessment process.
- Transitions (e.g. from home to general hospital, from hospital to rest home and vice versa) are costly: it pays to help people maintain their health and independence as much as possible, through good primary care, home support, active rehabilitation etc.
- The main cost to the health and welfare system of an older person living at home comes not from their home-care services but their greater likelihood of acute hospital admission - primary and community-based services aimed at reducing admissions and re-admissions are worth developing.
- It is cost-effective, in terms of reducing admissions to hospital and residential care, to provide the low level home support services that many older people need to enable them to maintain their independence.
- For a small group of people, intensive home care is less costly and more acceptable than residential care.
- It is worth developing clinical pathways/optimum packages of care for specific conditions (e.g. stroke and dementia). As well as being good clinical practice, this helps the funder build up a more accurate picture from the bottom-up of the resources needed for a population.
- It is cost-effective to concentrate case management on the minority of older people with high and/or complex needs, and to develop standard packages of home-care with minimal assessment and universal entitlement for the majority who have low needs.
- The burden on carers has increased over recent decades and it is important to put adequate resources into carer support to help people stay healthy and independent.
- It is important to have a strong rehabilitation focus in long-term home-based and residential services and to ensure these settings have adequate rehabilitation resources.

Disability increases with age and people often need increasing support to remain at home as they grow older. The New Zealand Disability Survey 2001 found that nationally 74% of people aged 65-74 years lived at home without assistance. This dropped to 54% among 75-84 year olds and to only 15% of those aged 85 or more. However most (57%) of those aged 85+ years lived at home with assistance - only 27% had gone into residential care. (Figure 3).

¹⁷ Wainwright (2003) provides a summary of overseas literature on the cost-effectiveness of homecare in relation to acute hospital care and long-term residential care.

Figure 34. Where Older New Zealanders Live, by Age and Level of Disability, 2001



Source: Ministry of Health 2002.
 'Home with assistance' includes people needing assistance or specialist equipment either daily or less frequently

Needs Assessment and Service Coordination (NASC) Services

NASC services have been the entry point for older people accessing long-term support services. These services have developed differently around New Zealand over the past 15 years. In Southern Region areas (including Canterbury) NASC services for older and younger people are provided separately, while in other parts of New Zealand they have been combined. Southern Region NASC services (including Canterbury) tend to be based in the general hospital near the Older Persons specialist AT&R services, while in other areas they are often based in the community.

DHBs are currently exploring methods of streamlining the ways that older people receive needs assessments and have their services coordinated, to ensure better communication and linkage among the variety of health and disability support workers that an older person sees. Canterbury's COSE (Coordinator Of Services for the Elderly) project is an example of this. Evidence suggests that needs assessment and service coordination services need to be primary/community based, and include both health and disability support workers. A 'one-stop-shop', bringing together district nursing, community physio and other rehabilitation and allied health services as well as long-term home support and carer support, would help older people and their GPs to ensure they get the services they need. (Wainwright 2003, Davies 1997).

In 2003/04 Canterbury spent just under \$2.4 million on NASC services or \$39 per head of 65+ population, just over the South Island average (Table 22 and Table 23).

Home Support (Home Help and Personal Care)

Long-term home support is organised and funded somewhat differently around New Zealand. Although the data is limited, there is some evidence that expenditure on long-term home support rose during the late 1990s in the Southern and Central Regions at around 3% a year. This was accompanied by a drop in the number of clients and a higher spend per client, suggesting that services were increasingly directed towards people with higher needs. However these regional figures may mask differences among DHBs (Chan et al 2001, Wainwright 2003).

In 2003/04 Canterbury had a lower rate of spending per head of older population on home help (\$151) and personal care (\$79) than the South Island average (\$155 and \$90 respectively - Table 23). Canterbury also provides home support services to a slightly lower percentage of its older population than the South Island average (Table 24). (Comparisons with national averages for expenditure or clients are not available).

In 2004/05 Canterbury DHB spent around \$14.5 million on long-term home support comprising \$9.6 million on home help and \$5 million on personal care. Expenditure per head of older people on home support services rose only 2%-2.5% between 2003/04 and 2004/05 (see Table A1, Appendix A).

This small rise in expenditure per head was accompanied by a sizable drop in the actual number (24-30% fewer) and percentage (20-25% fewer) of older people receiving home help and personal care (see Table A1, Appendix). This may reflect services being increasingly focussed towards people with the highest needs, continuing the trend seen in the late 1990s. In 2004/05 around 8,500 (13%) older people received home help and 2,825 (5%) received personal care (Table 24).

Table 23.25. *Number and Percentage of Older People Receiving Long-Term Home Help, Personal Care, Carer Support, Respite Care & Day Care, by South Island DHB, 2004/05*

NB these client numbers are for 2004/05, while expenditure data in Tables 22 & 23 are for the previous year, 2003/04. See Appendix A.

District Health Board	Home Help		Personal Care		Carer Support - Respite - Day Care	
	Number	%	Number	%	Number	%
Canterbury	8,148	13.2	2,828	4.6	1,748 - 833 - 384	2.8 - 1.3 - 0.6
Nelson Marlborough	2,549	13.3	11,052	5.4	171 - 203 - 312	0.9 - 1.0 - 1.6
Otago	3,935	15.2	1,490	5.8	829 - 299 - 91	3.2 - 1.2 - 0.4
South Canterbury	1,238	13.0	611	6.4	281 - 144 - 124	2.9 - 1.5 - 1.3
Southland	1,851	13.1	748	5.3	487 - 212 - 75	3.5 - 1.5 - 0.5
West Coast	708	16.5	207	4.8	105 - 34 - 21	2.4 - 0.8 - 0.5
Southern Region Total*	18,459	13.7	6,933	5.1	3621 - 1,725 - 1,007	2.7 - 1.3 - 0.7

Source: HealthPAC CCPS. See Tables A2 and A3 in Appendix A

People receiving more than one service are counted under each service, so there is some overlap.

Carer Support, Respite Care and Day Care

These services, which enable older people to remain living independently home by giving them and/or their carers a regular break, are funded and organised even more differently around the country than home support, and data problems mean that comparisons even among South Island DHBs should be treated with caution.

There is evidence that expenditure on these services and numbers of clients per head of older population remained fairly stable during the late 1990s in the Southern Region (Chan et al 2001).

In 2003/04 Canterbury DHB spent around \$3.4 million on carer support, respite care and day care combined (Table 22). In contrast to the very slight rise in home support spending, expenditure on these three services rose markedly between 2003/04 and 2004/05, both in actual dollars and in terms of dollars per head of older people (22%-32% rise) (see Table 23 and Table A1, Appendix).

This marked rise in expenditure per head was accompanied by a smaller (6-7%) rise in the actual number and percentage of older people receiving carer support and respite care (although a 5% drop in the percentage of people using day care). The fact that expenditure per head rose faster than the proportion of people getting the services suggest that services were being increasingly focussed towards people with the highest needs. In 2004/05 1,748 (2.8%) older people used carer support, 833 (1.3%) used respite care and 384 (0.6%) used day care (Table 24).

Equipment and Housing Modifications

This includes wheelchairs and seating appliances, walking equipment, hearing and vision equipment, housing and vehicle modifications and grants for vehicle purchase. A 2001 regional analysis of the data suggested little change occurred during the 1990s in per capita expenditure for older people for the Southern Region (Chan et al 2001).

The funding for older persons services that was devolved by the Ministry of Health to DHBs in October 2003 shows an equipment budget of \$628,710 allocated to Canterbury. At \$10 per head of older population this is below the South Island average (Table 22 and Table 23).

However, this budget is managed nationally by the Ministry of Health through contracts with regional providers and it is not clear whether this allocation represents the full amount of expenditure on equipment for older residents of the DHB. Client-level data are not easily available.

Residential Care

Southern Region figures suggest that both expenditure and occupied bed-days for long-term residential care rose slowly by around 4% per year during the late 1990s (about the same as the growth in the 85+ population). This rate was slowing down by 2000 (Chan et al 2001).

Although the data need to be treated cautiously, it appears that Canterbury's overall spending per head of older population on long-term residential care was around 17% higher than the national average in 2004/05, much as in 2003/04. In 2004/05 Canterbury spent markedly (42%) more on specialist dementia care than the national average, and 17% more on rest home care. Spending on long-stay hospital care was 7% higher than the average (Table A2 in Appendix A).

However expenditure on residential care, while increasing in actual dollars, appears to be levelling off in terms of spending per head of older population. In 2004-5 Canterbury DHB spent approximately \$75.8 million on all forms of subsidised residential care. This was a rise of \$1.4 million from 2003/04, but represented much the same amount spent per head of older population as in the previous year (Table A2 in Appendix A).

In both years Canterbury DHB spent more than the South Island average per head on all forms of long-term residential care, but this difference reduced over the year - from 7% to 2% more.

Looking at different types of care, per capita spending on rest home care in fact dropped by 3.4%, while spending on long-stay hospitals rose by 7% and on dementia facilities by 21%. This suggests Canterbury is moving towards allocating resources to people with the greatest need for care, and thereby moving nearer to the national and regional averages for rest home usage.

This is also reflected in the number of people entering permanent residential care, which in fact dropped over the same period, both in actual numbers and as a percentage of the older population. In 2003/04 5,718 people (9.4% of the 65+ year old population) entered care; by the next year this dropped to 4,570 people or 7.5% of the older population. This drop of 18-25% was reflected in all forms of care, from rest home to dementia facilities.

National data on client numbers are not currently accessible, so comparisons can only be made with the South Island average. In both years a slightly higher percentage of the Canterbury older population used all forms of residential care more than the South Island average.

During 2004/05 Canterbury rest homes had around 1,900 residents receiving some level of public subsidy and 1,140 private paying residents. 1,800 people lived in long-stay hospitals and 875 people lived in specialist dementia facilities. (Table 6 - see also the earlier section on Living Arrangements - Residential Care).

The likely demand for residential care over the next few years will be affected by the progressive changes to income and asset testing for these services.

Glossary

Acute services - the (usually short-term) medical and surgical specialist services provided at a general hospital. 'Acute' admissions refer to urgent admissions, in contrast to 'elective' admissions where the person is booked to come into hospital for treatment. 'Acute hospital beds' refer to beds in a general hospital's medical/surgical wards, which are fully staffed by medical and nursing specialists, in contrast to 'non-acute' beds in residential facilities or country hospitals etc, which have lower staffing and fewer facilities.

Age-standardised rate - the number of people in a population that have a specific condition, when age is taken into account. If the rate of dementia, for instance, is age-standardised the reader knows that XDHB having more people with the condition than YDHB is not because XDHB has more older people.

Annualised - data for disability support services for 2003/04 was annualised because only 9 month's worth of data was available. The available data was divided by 3 and multiplied by 4.

Chronic illness - conditions (e.g. arthritis, emphysema, diabetes) that tend to worsen over a long period of time rather than get better quickly (e.g. flu) or worsen quickly (e.g. some cancers)

Disability support services - the New Zealand Disability Surveys define 'disability' as any self-perceived limitation in activity resulting from a long-term condition or health problem, lasting or expected to last six months or more and not completely eliminated by an assistive device (e.g. hearing aid). Disability support services are services for people assessed as having a disability to help them in tasks of daily living.

Elective services - see Acute services

Functional impairment/disability - the ability to carry out the usual tasks of daily living (e.g. cooking, showering, dressing, walking, shopping etc)

Incidence - see Prevalence

New Zealand Guidelines Group - a national statutory body that draws together experts in specific health fields to create guidelines for good practice. See website www.nzgg.org.nz

NZHTA - New Zealand Health Technology Assessment, an organisation that undertakes reviews of the research literature on specific health topics and manages a national clearing house of health-related research information (www.nzhta.chmeds.ac.nz).

Palliative care - treatment (e.g. pain relief) and care given in situations where nothing further can be done to change the course of a terminal illness.

Projected population - estimate made by Statistics NZ of the likely number of people in future years, based on specific assumptions about births, deaths and migration.

Prevalence - the number of people in a population who have a specific condition (e.g. diabetes) at any one time. It is in contrast to 'incidence,' which refers to the number of new cases occurring during a specific time period.

Primary (health) care - the services available at the local health centre or general practice, (such as GP and practice nurse), as well as other health services that people can 'walk into' without a referral, such as pharmacist, optometrist, dentist, nurse practitioner, asthma educator, dentist etc

Rate - the proportion of a population. So the actual *number* of deaths in the 65-74 year age group has risen (because that age group has increased in number), but the *rate* of deaths per 1,000 older people has in fact dropped (because more older people are healthier). A percentage is a rate per 100 people.

Screening - 'screening programmes' offer checks to the 'normal' population to see if anyone has a specific disease (e.g. breast cancer). 'Screening' an individual person refers to checking them to see if a problem (e.g. dementia) exists.

Southern region - the area formerly covered by the Southern Regional Health Authority, i.e. all the South Island except Nelson Marlborough District. Some disability data are available only for this area.

REFERENCES

- Most NZ Ministry of Health and Public Health Intelligence publications are available electronically from the website www.moh.govt.nz
- Age Concern (2002) *Age Concern Elder Abuse and Neglect Services*. Wellington: Age Concern
- Ahuriri-Driscoll A, Rasmussen P, Day P (2004). *Mental Health Services for Older people - a Critical Appraisal of the Literature*. New Zealand Health Technology Assessment report 7 (2). Christchurch: NZHTA www.nzhta.chmeds.ac.nz
- Aish H, Didsbury P, Creese P, Grigor J, Gribben B (2003). Primary Options for Acute Care: General Practitioners Using Their Skills to Manage 'Avoidable Admission' Patients in the Community. *New Zealand Medical Journal*. Vol 116 No 1169.
- Alcohol & Public Health Research Unit (1999). *Advice for Purchasing Strategy on Public Health Issues - Health of Older Adults*. Auckland: Alc & Pub H Res Unit
- Australian Department of Health & Ageing (2003). Incidence of Incontinence as a Factor in Admission to Aged Care Homes - executive summary electronically available from www.health.org.au.
- Australian Bureau of Statistics (2004) Musculoskeletal Conditions in Australia: a Snapshot. Available electronically at www.abs.gov.au/Ausstats
- Badley EM and Wang PP (1998) Arthritis and the Ageing Population: Projections of Arthritis Prevalence in Canada 1991 to 2031. *Journal of Rheumatology* 25(1):138-144
- Campbell AJ, Reinken J, McCosh L (1985) Incontinence in the Elderly: Prevalence and Prognosis. *Age & Ageing*; 14(2):65-70
- Center for Disease Control (2002) Prevalence of Self-Reported Arthritis or Chronic Joint Symptoms Among Adults - United States, 2001. *Morbidity & Mortality Weekly Report*, 51(42): 948-950, <http://www.cdc.gov/mmwr/>
- Chan R, Dickson J, Malhotra S (2001) *DSS Expenditure Trends and Service Utilisation*. Wellington: Ministry of Health (unpublished)
- Cornwall J and Davey JA (2004) *Impact of Population Ageing in New Zealand on the Demand for Health and Disability Support Services and Workforce Implications*. Wellington: Ministry of Health
- Davey JA (2003). *The Context and Implications of Population Ageing in New Zealand - A Background Paper for the Periodic Report Group 2003*. Wellington: NZ Treasury. www.treasury.govt.nz.
- Davey JA, de Joux V, Nana G, Arcus M (2004). *Accommodation Options for Older People in Aotearoa/New Zealand*. Wellington: New Zealand Institute for Research on Ageing/BERL
- Davies B (1997) *Equity and Efficiency in Community Care: from Muddle to Model and Model to ?*. Canterbury UK: Personal Social Services Research Unit. www.pssru.ac.uk
- Department of Health (c2000). *Good Practice in Continence Services*. London: DoH www.doh.gov.uk/continenceservices.htm
- Dharmalingam A, Pool, I, Baxendine S, Sceats J. (2004) Trends and Patterns of Avoidable Hospitalisations in New Zealand: 1980-1997. *New Zealand Medical Journal*, Vol 117 No 1198.
- Ding W (2001). Pricing Analysis for Community Services. Unpublished. Wellington: MoH
- Dwyer M, Gray A, Renwick M (2000). *Factors Affecting the Ability of Older People to Live Independently*. Wellington: Ministry Social Policy (www.msd.govt.nz)
- Evans JR, Fletcher RP, Wormald RPL (2004) Causes of Visual Impairment in People Aged 75 Years and Older in Britain: an Add-on Study to the MRC Trial of Assessment and Management of Older People in the Community. *British Journal of Ophthalmology* 88: 365-370
- Evans O, Singleton N, Meltzer H, Stewart R, Prince M (2003). *The Mental Health of Older People*. London: Office for National Statistics. www.statistics.gov.uk
- Fergusson D, Hong B, Horwood J, Jenson J, Travers P. (2001) *Living Standards of Older New Zealanders: a Technical Account*. Wellington: Ministry for Social Development. www.msd.govt.nz
- Fonda D, Benvenuti F, Castleden M, Cottenden A, O'Donnell P, Resnick N, Colling J, Trogi Rocha F (1999) Management of Incontinence in Older People. In Abrams P, Khoury S, Wein AJ (eds) *Incontinence - Proceedings of first WHO-sponsored Consultation on Incontinence, Monaco 1998*. Health Publication Ltd.
- Gibbs LME (1998) Dying from Heart Failure: Lessons from Palliative Care. *British Medical Journal* 317:961-962. www.bmj.com
- Giles LC, Cameron ID, Crotty M (2003). Disability in Older Australians: Projections for 2006 - 2031. *Medical Journal of Australia*; 179:130-133

- Health Funding Authority/Ministry of Health (?1998) *Disability in New Zealand - Overview of the 1996/97 Surveys*. Wellington: HFA/MoH
- Hollander M and Chappell N (2002) *Synthesis Report - Final Report of the National Evaluation of the Cost-Effectiveness of Home Care*. Victoria BC: Nat Eval Cost-Effec Home-Care. www.homecarestudy.com/reports
- Hopkins RW, Kilik L, Day DJA, Rows C, Tseng H. (2004) Driving and Dementia in Ontario: A Quantitative Assessment of the Problem. *Canadian Journal of Psychiatry*, 49:7; 434-438
- Howe A and Gray L (1998) *Targeting in the Home and Community Care Program*. Canberra: National Ageing Research Institute & Bundoora Extended Care Centre. www.health.gov.au/acc/hacc/targeting
- Hunskar S, Arnold EP, Burgio K, Duiokno AC, Herzog AR, Mallett VT (2000) Epidemiology and Natural History of Urinary Incontinence. *International Urogynaecology Journal* 11:301-119
- Johnston G and Teasdale A. (1999) *Population Ageing and Health Spending: 50-year Projections*. Occasional Paper No. 2. Wellington: MoH
- Menec VH, MacWilliam L, Soodeen R-A, Mitchell L (2002). *The Health and Health Care Use of Manitoba's Seniors - Have They Changed over Time?* Manitoba: Manitoba Centre for Health Policy. www.umanitoba.ca/centres/mchp
- McCarty CA, Keeffe JE, Taylor HR (1999) The Need for Cataract Surgery: Projections Based on Lens Opacity, Visual Acuity and Personal Concern. *British Journal Ophthalmology* 83:62-65
- Ministry of Health (1997). *The Health and Well-being of Older People and Kaumatua - The Public Health Issues*. Wellington: MoH
- Ministry of Health (1997a). *Mental Health in New Zealand from a Public Health Perspective*. Wellington: MoH
- Ministry of Health (1999). *Our Health, Our Future - The Health of New Zealanders 1999*. Wellington: MoH
- Ministry of Health (2001) *DHB Toolkit - Tobacco Control*. Wellington: MoH. Available only electronically from www.newhealth.govt.nz/toolkits/tobaccocontrol.htm.
- Ministry of Health (2002). *Health of Older People in New Zealand - A Statistical Reference*. Wellington: MoH
- Ministry of Health (2003) *DHB Toolkit - Diabetes*. Wellington : MoH. Available only electronically from www.newhealth.govt.nz/toolkits
- Ministry of Health (2003a). *Elder Abuse - Family Violence Intervention Guidelines - Draft for Consultation*. Wellington: MoH
- Ministry of Health (2004). *Guidelines for Specialist Health Services for Older People*. Wellington: MoH
- Ministry of Health (2004a). *An Indication of New Zealanders' Health 2004*. Wellington: MoH
- Ministry of Health (2004b). *Improving Mental Health - The Second National Mental Health and Addiction Plan, 2005-2015*. Wellington: MoH
- Ministry of Health (2004c). *A Snapshot of Older People's Assessment, Treatment and Rehabilitation Services and Mental Health Services 2003*. Wellington: MoH
- Ministry of Health (downloaded 2005). *DHB Toolkit: Tobacco Control - to Reduce Smoking (and Harm from Second-Hand Smoke)*. Available only electronically from www.newhealth.govt.nz/toolkits
- Ministry of Health/New Zealand Health Information Services (2002) *Fracture of Neck of Femur Services in New Zealand Hospitals 1999/2000*. Wellington: MoH
- National Advisory Council on Aging (2002). *Writings in Gerontology - Mental Health and Aging*. Ottawa: NACA www.naca.ca
- New Zealand Guidelines Group (2002). *Guidelines for Smoking Cessation*. Wellington: NZGG. www.nzgg.org.nz.
- New Zealand Guidelines Group (2003). *Life After Stroke - New Zealand Guidelines for Management of Stroke*. Wellington: NZGG. www.nzgg.org.nz.
- New Zealand Guidelines Group (2003a) *Prevention of Hip Fracture Amongst People Aged 65 Years and Over*. Wellington: NZGG. www.nzgg.org.nz.
- New Zealand Guidelines Group (downloaded 2004). *Guidelines for the Support and Management of People with Dementia*. Wellington: NZGG. www.nzgg.org.nz.
- Public Health Intelligence (2001). *Life Expectancy and Small Area Deprivation in New Zealand*. Occasional Bulletin No. 6. Wellington : MoH.

- Public Health Intelligence (2002) *Modelling Stroke - A Multi-State Life Table Model*. Occasional Bulletin No 12. Wellington: MoH
- Public Health Intelligence (2002a). *Cancer in New Zealand - Trends and Projections*. Wellington: MoH
- Public Health Intelligence (2002b). *Modelling Diabetes: A Summary*. Wellington: MoH
- Public Health Intelligence (2002c). *Modelling Diabetes: Forecasts to 2011*. Wellington: MoH
- Public Health Intelligence (2003). *Decades of Disparity I: Ethnic Mortality Trends in New Zealand, 1981 - 1999*. Occasional Bulletin No 25. Wellington: MoH
- Public Health Intelligence (2004). *A Portrait of Health - Key Results of the 2002/03 New Zealand Health Survey*. Occasional Bulletin No 21. Wellington: MoH
- Public Health Intelligence (2004a). *Looking upstream - causes of death classified by risk and condition, New Zealand 1997, revised edition*. Occasional Bulletin No 20. Wellington: MoH
- Public Health Intelligence (2004b). *Tracking the Obesity Epidemic New Zealand 1977 - 2003*. Occasional Bulletin No 24. Wellington: MoH
- Public Health Intelligence (2004c). *Longer life, better health? Trends in Health Expectancy, New Zealand 1996-2001*. Occasional Bulletin No 23. Wellington: MoH
- Public Health Intelligence (2004d). *Population Ageing and Health Expenditure, New Zealand 2002-2051*. Occasional Bulletin No 22. Wellington: MoH
- Public Health Intelligence (2005). *Decades of Disparity II: socioeconomic mortality trends in New Zealand, 1981 - 1999*. Occasional Bulletin No 25. Wellington: MoH
- Royal NZ Foundation for the Blind (2004). National Register of Visually impaired or Blind Members and Service Users. From the Technical Advisory Services' website - www.centaltas.co.nz.
- Southern Regional Health Authority (1998). *Health of the South*. Dunedin: SRHA.
- Statistics New Zealand (2002). *Disability Counts 2001*. Wellington: Stats NZ. www.stats.govt.nz
- Statistics New Zealand (2004). *Older New Zealanders - 65 and beyond*. Wellington: Stats NZ www.stats.govt.nz
- Statistics NZ (2004a). *Life Tables 2000-2002 Commentary*. www.stats.govt.nz
- Statistics NZ (2004b) *Regional Life Tables 1995/97*. Downloaded 2004 from www.stats.govt.nz
- Thom DH, Haan MN, van den Eeden SK (1999). Medically Recognised Urinary Incontinence and Risks of Hospitalisation, Nursing Home Admission and Mortality. *Age & Ageing* 26:367-374
- Thwaites J, Mann F, Gilchrist N, Frampton C, Rothwell A, Sainsbury R (2005). Shared Care Between Geriatricians and Orthopaedic Surgeons as a Model of Care for Older Patients with Hip Fracture. *New Zealand Medical Journal* Vol 118 No 1214
- Turvey K and Fine M (1996). *Community Care: the Effects of Low Levels of Service Use*. Sydney: Social Policy Research Centre, University of New South Wales
- Wainwright T (2002) *Seeking National Consistency in Personal Health Funded Community Services - A Report of the Community Service Group of the Ministry of Health's Nationwide Service Framework Project*. Wellington: MoH
- Wainwright T (2003) *Home Care Thoughts from Abroad - A Review of the Literature on the Cost-Effectiveness of Home-Based Services and on Ways of Funding and Organising Home-Based Care*. Christchurch: NZ Health Technology Assessment (NZHTA) www.nzhta.chmeds.ac.nz

APPENDIX A. LONG-TERM SUPPORT SERVICES FOR OLDER PEOPLE - EXPENDITURE AND CLIENTS

See notes at end of this Appendix for details of the data on which these tables are based.

Table A1 Expenditure on non-residential long-term support services, South Island DHBs, 2003/04 and 2004/05, showing percentage change in dollars per head of older population

DHB	Service	Expenditure 2003-2004 \$ (annualised)	Expenditure 2004/05 \$	\$ per cap 65+ 2003/04	\$ per cap 65+ 2004/05	% change per cap 2003/04 to 2004/05
Canterbury	Home Help	9,145,356	9,552,076	151	154	2.5
Nelson Marlborough	Home Help	2,461,046	2,778,969	130	143	10.0
Otago	Home Help	4,363,083	4,676,822	171	181	5.8
South Canterbury	Home Help	1,405,648	1,494,879	150	157	4.7
Southland	Home Help	2,032,685	2,033,891	147	144	-2.1
West Coast	Home Help	1,124,764	1,132,672	267	263	-1.3
South Island	Home Help	20,532,583	21,669,309	155	160	3.6
Canterbury	Personal Care	4,784,190	4,972,533	79	80	2.0
Nelson Marlborough	Personal Care	1,818,472	2,226,806	96	115	19.2
Otago	Personal Care	2,454,354	2,813,604	96	109	13.2
South Canterbury	Personal Care	1,254,926	1,611,661	134	169	26.5
Southland	Personal Care	1,192,599	1,298,200	87	92	6.6
West Coast	Personal Care	473,903	465,629	112	108	-3.7
South Island	Personal Care	11,978,445	13,388,434	90	99	9.7
Canterbury	Carer Support	2,072,310	2,674,622	34	43	26.6
Nelson Marlborough	Carer Support	114,420	128,316	6	7	9.2
Otago	Carer Support	1,178,703	1,322,953	46	51	10.8
South Canterbury	Carer Support	394,485	438,811	42	46	9.5
Southland	Carer Support	677,563	884,342	49	63	27.8
West Coast	Carer Support	179,742	164,954	43	38	-10.0
South Island	Carer Support	4,617,224	5,613,998	35	42	19.3
Canterbury	Respite Care	1,081,501	1,345,578	18	22	22.1
Nelson Marlborough	Respite Care	289,346	262,677	15	14	- 11.6
Otago	Respite Care	426,122	507,240	17	20	17.5
South Canterbury	Respite Care	141,660	250,662	15	26	74.3
Southland	Respite Care	264,910	348,035	19	25	28.6
West Coast	Respite Care	59,998	47,118	14	11	-23.0
South Island	Respite Care	2,263,537	2,761,309	17	20	19.7
Canterbury	Day Care	311,523	420,582	5	7	32.5
Nelson Marlborough	Day Care	260,566	281,288	14	14	5.1
Otago	Day Care	52,060	74,109	2	3	40.5
South Canterbury	Day Care	53,200	111,056	6	12	105.6
Southland	Day Care	60,835	58,828	4	4	-5.3
West Coast	Day Care	8,909	12,498	2	3	37.5
South Island	Day Care	747,093	958,361	6	7	25.9
Canterbury	All Non-Residential	17,394,881	18,965,390	287	307	7.0
Nelson Marlborough	All Non-Residential	4,943,850	5,678,056	262	293	11.8
Otago	All Non-Residential	8,474,323	9,394,729	331	363	9.4
South Canterbury	All Non-Residential	3,249,919	3,907,071	346	410	18.4
Southland	All Non-Residential	4,228,592	4,623,296	307	328	7.0
West Coast	All Non-Residential	1,847,317	1,822,871	438	424	-3.3
South Island	All Non-Residential	40,138,882	44,391,412	303	329	8.5

Table A2 Expenditure on residential long-term support services, South Island DHBs, 2003/04 and 2004/05, showing percentage change in dollars per head of older population, and difference from NZ in dollars per head of older population

DHB	Service	Expenditure 2003-2004 \$ (annualised)	Expenditure 2004/05 \$	\$ per cap 65+ 2003/04	\$ per cap 65+ 2004/05	% change per cap 03-04 to 04-05	% difference from NZ per cap 2004/05
Canterbury	Rest Home	29,038,632	28,601,685	479	463	- 3.4	17.0
Nelson Marlborough	Rest Home	6,214,210	6,336,171	329	327	- 0.7	-17.6
Otago	Rest Home	13,063,637	12,969,022	511	501	- 2.0	23.3
South Canterbury	Rest Home	3,568,605	3,272,884	380	343	- 9.7	-11.9
Southland	Rest Home	5,695,984	5,897,924	413	419	1.4	8.3
West Coast	Rest Home	2,161,078	2,414,622	513	562	9.5	31.6
South Island	Rest Home	59,742,146	59,492,309	451	440	- 2.3	12.8
New Zealand	Rest Home			381	384	0.8	
Canterbury	Long Stay Hospital	33,031,396	34,405,457	544	556	2.2	7.4
Nelson Marlborough	Long Stay Hospital	9,352,228	9,935,116	495	512	3.4	-0.6
Otago	Long Stay Hospital	12,181,713	11,973,567	476	462	- 3.0	-11.4
South Canterbury	Long Stay Hospital	3,813,207	4,025,923	406	422	4.0	-22.0
Southland	Long Stay Hospital	6,318,821	6,228,434	458	442	- 3.5	-16.4
West Coast	Long Stay Hospital	2,948,280	3,096,010	699	720	2.9	28.5
South Island	Long Stay Hospital	67,645,644	69,664,507	510	516	1.0	0.2
New Zealand	Long Stay Hospital			500	515	3.0	
Canterbury	Dementia - Rest Hm	7,436,237	7,513,744	123	122	0.9	39.1
Nelson Marlborough	Dementia - Rest Hm	1,304,817	1,524,799	69	79	13.8	5.8
Otago	Dementia - Rest Hm	2,463,199	2,797,124	96	108	12.1	31.5
South Canterbury	Dementia - Rest Hm	785,248	820,407	84	86	2.9	14.0
Southland	Dementia - Rest Hm	1,291,247	1,250,876	94	89	-5.2	16.7
West Coast	Dementia - Rest Hm	96,264	171,632	23	40	74.8	-85.4
South Island	Dementia- Rest Hm	13,377,012	14,078,582	101	104	3.3	29.0
New Zealand	Dementia- Rest Hm			68	74	8.8	
Canterbury	Dementia - Hosp	4,893,958	5,328,633	81	86	6.8	44.3
Nelson Marlborough	Dementia - Hosp	1,832,907	1,755,203	97	90	-6.8	46.9
Otago	Dementia - Hosp	2,568,144	2,707,452	100	105	4.1	54.1
South Canterbury	Dementia - Hosp	704,653	699,067	75	73	-2.3	34.5
Southland	Dementia - Hosp	891,425	1,037,802	65	74	14.0	34.9
West Coast	Dementia - Hosp	747,627	634,038	177	147	-16.9	67.4
South Island	Dementia Hosp	11,638,714	12,162,195	88	90	2.5	46.7
New Zealand	Dementia Hosp			48	48	-	
Canterbury	All Residential	74,400,223	75,849,519	1,226	1,227	0.0	16.8
Nelson Marlborough	All Residential	18,704,163	19,551,289	990	1,008	1.8	-1.3
Otago	All Residential	30,276,693	30,447,165	1,184	1,175	- 0.7	13.1
South Canterbury	All Residential	8,871,713	8,818,282	944	924	- 2.1	-10.5
Southland	All Residential	14,197,477	14,415,036	1,030	1,024	- 0.6	0.3
West Coast	All Residential	5,953,248	6,316,302	1,412	1,469	4.0	30.5
South Island	All Residential	152,403,516	155,397,593	1,150	1,151	0.0	11.3
New Zealand	All Residential			997	1,021	2.4	

Table A3 Number of people aged 65+ years using non-residential long-term support services, South Island DHBs, during 2003/04 and 2004/05, numbers and as a percentage of the total older population

DHB	Service	Number of clients 2003/04 (annualised)	Number of clients 2004/05	Clients as % 65+ pop 2003/04	Clients as % 65+ pop 2004/05	% change in clients as %65+ pop 0304-0405
Canterbury	Home Help	10,645	8,148	17.5	13.2	-24.9
Nelson Marlborough	Home Help	3,057	2,579	16.2	13.3	-17.9
Otago	Home Help	4,727	3,935	18.5	15.2	-17.8
South Canterbury	Home Help	1,544	1,238	16.4	13.0	-21.0
Southland	Home Help	2,335	1,851	16.9	13.1	-22.4
West Coast	Home Help	997	708	23.7	16.5	-30.4
South Island	Home Help	23,305	18,459	17.6	13.7	-22.3
Canterbury	Personal Care	3,492	2,825	5.8	4.6	-20.6
Nelson Marlborough	Personal Care	1,169	1,052	6.2	5.4	-12.4
Otago	Personal Care	1,741	1,490	6.8	5.8	-15.5
South Canterbury	Personal Care	712	611	7.6	6.4	-15.5
Southland	Personal Care	899	748	6.5	5.3	-18.6
West Coast	Personal Care	304	207	7.2	4.8	-33.3
South Island	Personal Care	8,317	6,933	6.3	5.1	-18.2
Canterbury	Carer Support	1,605	1,748	2.6	2.8	6.9
Nelson Marlborough	Carer Support	139	171	0.7	0.9	19.8
Otago	Carer Support	831	829	3.2	3.2	-1.5
South Canterbury	Carer Support	285	281	3.0	2.9	-2.9
Southland	Carer Support	499	487	3.6	3.5	-4.5
West Coast	Carer Support	123	105	2.9	2.4	-16.3
South Island	Carer Support	3,482	3,621	2.6	2.7	2.0
Canterbury	Respite Care	771	833	1.3	1.3	6.0
Nelson Marlborough	Respite Care	188	203	1.0	1.0	5.1
Otago	Respite Care	257	299	1.0	1.2	14.8
South Canterbury	Respite Care	99	144	1.1	1.5	43.2
Southland	Respite Care	149	212	1.1	1.5	39.3
West Coast	Respite Care	44	34	1.0	0.8	-24.3
South Island	Respite Care	1,508	1,725	1.1	1.3	12.2
Canterbury	Day Care	397	384	0.7	0.6	-5.1
Nelson Marlborough	Day Care	289	312	1.5	1.6	5.1
Otago	Day Care	84	91	0.3	0.4	6.9
South Canterbury	Day Care	88	124	0.9	1.3	38.8
Southland	Day Care	95	75	0.7	0.5	-22.7
West Coast	Day Care	20	21	0.5	0.5	2.9
South Island	Day Care	973	1,007	0.7	0.7	1.5
Canterbury	All non-residential	16,910	13,938	27.9	22.5	-19.1
Nelson Marlborough	All non-residential	4,842	4,317	25.6	22.2	-13.2
Otago	All non-residential	7,640	6,644	29.9	25.6	-14.2
South Canterbury	All non-residential	2,728	2,398	29.0	25.1	-13.4
Southland	All non-residential	3,977	3,373	28.9	24.0	-17.0
West Coast	All non-residential	1,488	1,075	35.3	25.0	-29.2
South Island	All non-residential	37,585	31,745	28.4	23.5	-17.1

Table A4 Number of people aged 65+ years using residential long-term support services, South Island DHBs, during 2003/04 and 2004/05, numbers and as a percentage of the total older population

DHB	Service	Number of clients 2003/04 (annualised)	Number of clients 2004/05	Clients as % 65+ pop 2003/04	Clients as % 65+ pop 2004/05	% change in clients as %65+ pop 0304-0405
Canterbury	Rest Home	2,456	1,896	4.0	3.1	-24.3
Nelson Marlborough	Rest Home	568	430	3.0	2.2	-26.3
Otago	Rest Home	1,152	871	4.5	3.4	-25.4
South Canterbury	Rest Home	323	241	3.4	2.5	-26.5
Southland	Rest Home	505	413	3.7	2.9	-19.9
West Coast	Rest Home	213	167	5.1	3.9	-23.1
South Island	Rest Home	5,217	4,018	3.9	3.0	-24.4
Canterbury	Long-Stay Hospital	2,185	1,799	3.6	2.9	-19.2
Nelson Marlborough	Long-Stay Hospital	604	497	3.2	2.6	-19.9
Otago	Long-Stay Hospital	804	642	3.1	2.5	-21.2
South Canterbury	Long-Stay Hospital	223	204	2.4	2.1	-9.9
Southland	Long-Stay Hospital	400	324	2.9	2.3	-20.7
West Coast	Long-Stay Hospital	164	121	3.9	2.8	-27.7
South Island	Long-Stay Hospital	4,380	3,587	3.3	2.7	-19.6
Canterbury	Dementia Rest Home	792	658	1.3	1.1	-18.5
Nelson Marlborough	Dementia Rest Home	175	157	0.9	0.8	-12.6
Otago	Dementia Rest Home	288	243	1.1	0.9	-16.7
South Canterbury	Dementia Rest Home	67	57	0.7	0.6	-16.2
Southland	Dementia Rest Home	145	117	1.1	0.8	-21.0
West Coast	Dementia Rest Home	5	6	0.1	0.1	-
South Island	Dementia Rest Home	1,472	1,238	1.1	0.9	-17.5
Canterbury	Dementia Hospital	285	217	0.5	0.4	-25.3
Nelson Marlborough	Dementia - Hospital	65	53	0.3	0.3	-20.6
Otago	Dementia - Hospital	136	98	0.5	0.4	-28.9
South Canterbury	Dementia - Hospital	36	29	0.4	0.3	-20.7
Southland	Dementia - Hospital	55	45	0.4	0.3	-19.9
West Coast	Dementia - Hospital	28	19	0.7	0.4	-33.5
South Island	Dementia - Hospital	605	461	0.5	0.3	-25.2
Canterbury	All Residential	5,718	4,570	9.4	7.4	-21.6
Nelson Marlborough	All Residential	1,412	1,137	7.5	5.9	-21.6
Otago	All Residential	2,380	1,854	9.3	7.2	-23.1
South Canterbury	All Residential	649	531	6.9	5.6	-19.4
Southland	All Residential	1,105	899	8.0	6.4	-20.4
West Coast	All Residential	410	313	9.7	7.3	-25.2
South Island	All Residential	11,674	9,304	8.8	6.9	-21.8

Notes

Years are financial years ending 30 June. Data was derived from CCPS, September 05. 2003/04 data has been annualised from data for October 03-June 04.

Comparable national expenditure data is available only for residential services. National client data is not accessible for comparison for any service.

Clients = a count of all unique client numbers (NHIs) using that service in the year. The number of people using a service or in residential care on any one day (e.g. 30 June 0204) will be lower.

One person may use several services, so client numbers should not be summed over services.

Rest home clients refer only to people receiving some level of public subsidy - including wholly private paying clients may raise the number by 40-50%, depending on DHB.