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# Projected costs of fall related injury to older persons due to demographic change in Australia

Report to the Commonwealth Department of Health and Ageing  
under the National Falls Prevention for Older People Initiative

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New Directions in Health and Safety

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## Executive summary

Australia will experience a significant increase in the proportion of its population that is over 65 years of age over the next 50 years.

This will result in increased demand for health services related to injury from falls unless effective preventive strategies are put in place.

The major impacts are that by 2051:

- The total health cost attributable to fall related injury will increase almost three fold to \$1375 million per annum.
- There will be 886,000 additional hospital bed days per annum or the equivalent of 2500 additional beds permanently allocated to falls injury treatment; and
- 3320 additional nursing home places will be required.

To maintain cost parity over this period, prevention strategies will need to deliver approximately a 66% reduction in incidence. Therefore, policymakers need to know what level of investment is required now, in the short-term and in the long-term, to achieve this reduction.

The burden of the population shift occurs at different times in different States and Territories. Tasmania and South Australia are already experiencing significant cost increases, NSW and Victoria will reach the critical stage in about 2010 and Western Australian and Queensland a few years later and the ACT in 2020. The Northern Territory is not predicted to reach such high concentrations of older people in the foreseeable future. However it will experience the highest shift in cost demand of any jurisdiction.

In summary

- The cost of fall related injury is expected to rise dramatically over the next fifty years unless effective prevention and lower treatment costs occur.
- If additional efforts to reduce the rate of falls injury for this age group are not implemented the total cost of treatment will rise to a point that is likely to make investment in prevention difficult once the demographic shift occurs in each jurisdiction.
- The issue will affect different jurisdictions in different ways and while national planning is needed to minimise the cost of increasing prevention and treatment efficiency, policy flexibility will be required to meet the need of the different jurisdictions and the local areas within each of them.

These findings indicate that:

- Long term planning of prevention activities in line with the needs of each State and Territory are required and,
- investment in research into prevention strategies and their effective delivery into the Australian community is needed.

## Background

The prevention of falls injury among older people is a priority for Commonwealth Department of Health and Ageing. It has commissioned and published papers summarising literature on effectiveness of interventions strategies in community, acute care and residential settings (Hill et al 2000) and is undertaking a range of research and projects under the National Falls Prevention for Older People Initiative.

Cripps and Carman (2001) reported that in 1998:

- 1014 elderly people were recorded as dying from fall related injuries.
- There were 45,069 episodes of in patient hospital care, which represented 54% of all hospitalisations in the age group.

Mathers and Penm (1999) estimated the cost to the health system of fall related injuries in 1993-94 to be \$406.4.

Australia will experience a significant increase in the proportion of its population that is over 65 years of age over the next 50 years.

This paper provides estimates of the relative change in the cost of responding to fall related injury in older people due to the changing age spectrum of the Australian population. Its purpose is to identify:

- the size of the changes that will occur,
- the different timing of changes in each State and Territory and
- the general magnitude of the change in costs.

The paper does not calculate exact costs and cost changes. The information to perform such detailed calculations is not currently available. The cost calculations are based on applying the average 1993-94 costs of fall injury to the projected populations of each state and territory (Mathers and Penm 1999). It is clear that the average cost does not apply in any of the constituent jurisdictions. Different practices associated with the different underlying geography of each state and territory, different underlying health service cost structures, and different patterns of concentrations of older people, mean that the actual costs in each state and territory will be somewhat different to the estimates in this paper. There has been no attempt to take into account any increase in health care costs since 1993-94. The purpose of this paper is to estimate relative cost burdens and the changes in these due to population ageing.

These estimates show the overall size of likely changes and when major changes in trend will occur if nothing is done to reduce the current rate of fall related injury or the patterns of treatment of fall related injury. They provide a strategic tool for the health system to prepare for the changes by implementing prevention strategies and developing responsive treatment services. They also identify when the changes will impact and provide an opportunity to plan for change with a clear understanding of what window of opportunity to reduce costs exists.

It is clear from the results that if nothing is done to reduce the rate of fall related injury, the cost of treating these injuries will become so great that it will be difficult to fund prevention programs, thereby creating a cost spiral. It is in the interests of both governments and older people that prevention strategies that look forward ten to twenty years are put in place in order to limit future treatment costs and the limitations that fall injury inflicts on the quality of life and the independence of older people.

The major review of fall prevention interventions published by the Commonwealth in 2001(Hill et al 2001), recent trial results of multifaceted intervention in Victoria (Day et al 2002), and emerging evidence from falls injury prevention research in the international literature (Lord, Sherrington and Menz 2001) all provide strong evidence that prevention is feasible. This paper indicates how important it will be to implement best practice, and identifies the window of opportunity available in each jurisdiction before the cost of treatment will limit the opportunities for preventive action.

## **Method**

### **Base populations and costs**

The estimates in this paper are calculated by multiplying ABS population projections 1996 Series 2 (ABS Cat 3222.0) by the estimated individual age specific AIHW health system costs for fall injury 1993-94 calculated by Mathers and Penm (1997).

These sources have been chosen because:

- Series 2 population projections provide a mid point estimate of likely population changes.
- The AIHW estimates have been corrected so that the estimates correctly sum to the total of actual health expenditure across all causes. The fall injury estimates therefore are corrected for the effect of multiple co-morbidities that are common with increasing age. Comparison of the estimates of bed day utilisation for NSW with estimates based on fall admissions show that in that state, direct estimation from admissions data results in a 30% higher estimate than the method used here. This is due to differences in NSW admission and treatment practices compared to the Australian average and to the fact that correction for co-morbidity was not possible (Moller 2002).

The AIHW cost estimates are limited to separate estimates for males and females in the age groups 65-75 and 75 plus years. It has been shown by the National Injury Surveillance Unit (Cripps and Carman 2002) that the incidence of fall related hospitalisation rises exponentially after the age of 65 years with dramatic increases in risk among people aged more than eighty years. The simple segmentation used by AIHW is not sensitive to this phenomenon. More accurate estimates could be made if the base cost data was calculated for each five-year age group from 65-69 to 95 plus. The estimates of trend in this report will tend to underestimate the size of the change because of the increasing proportion of the older population that will reach more than eighty years in the projected period.

### **Correct interpretation of estimates**

The method used must be taken into consideration to correctly interpret the estimates in this paper.

The costs and utilisation figures are not accurate measurement of costs. They should be used in three ways:

- To assess the order of magnitude of the change and the contribution of the various cost and service components.
- To assess the relative rate of change in each jurisdiction.
- To assess what window of opportunity exists before major cost and service demand changes will occur if nothing is done.

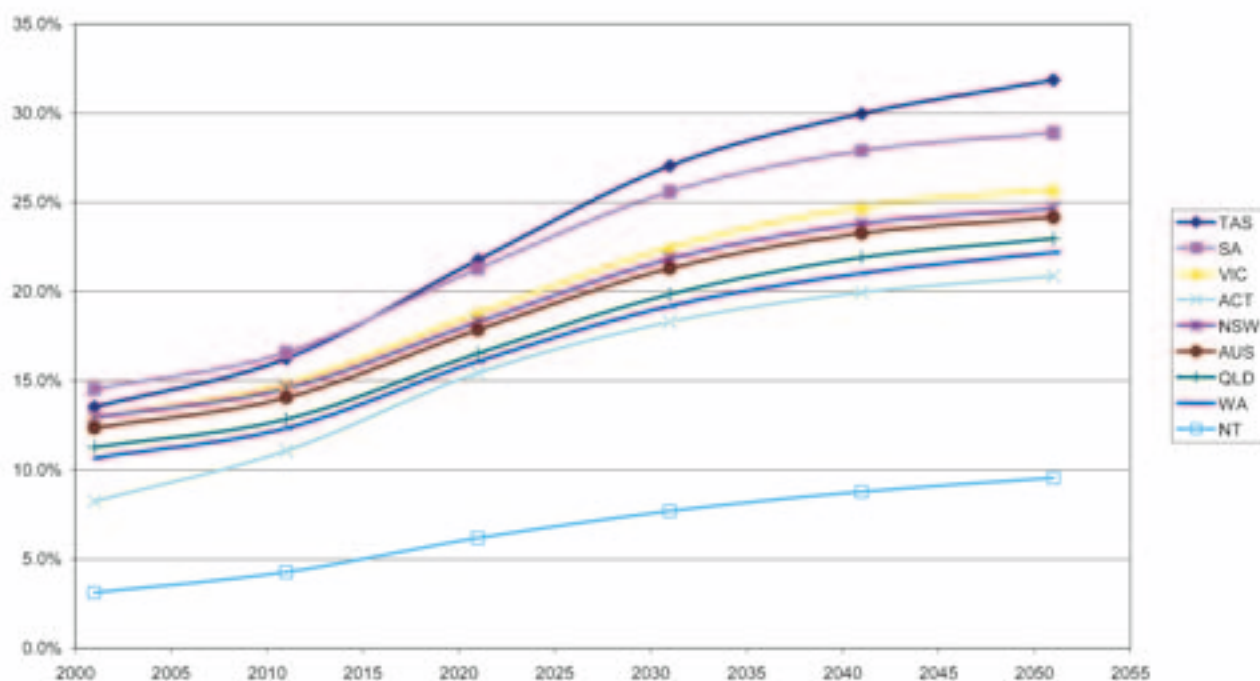
## Major findings

From 2011 Australia's population will age rapidly. Table 1 and Figure 1 show that the proportion of the population that is aged over 65 will double in all jurisdictions except ACT where a two and a half fold increase is predicted and the Northern Territory where a three fold increase is predicted. Tasmania and South Australia have already started the ageing process and by 2051 will have the highest proportion of people over 65 years.

• Table 1 Percentage of population over 65 years by jurisdiction 2001 to 2051 ranked by 2051 age population percentage

	2001	2011	2021	2031	2041	2051	Ratio 2051:2001
TAS	13.5%	16.2%	21.8%	27.1%	30.0%	31.9%	2.4
SA	14.5%	16.6%	21.3%	25.6%	27.9%	28.9%	2.0
VIC	12.9%	14.8%	18.8%	22.5%	24.8%	25.7%	2.0
ACT	8.2%	11.1%	15.4%	18.3%	20.0%	20.9%	2.5
NSW	12.9%	14.6%	18.3%	21.8%	23.8%	24.6%	1.9
AUS	12.4%	14.0%	17.9%	21.3%	23.3%	24.2%	2.0
QLD	11.3%	12.8%	16.5%	19.9%	21.9%	23.0%	2.0
WA	10.7%	12.3%	16.1%	19.2%	21.0%	22.2%	2.1
NT	3.1%	4.3%	6.2%	7.7%	8.8%	9.6%	3.1

• Figure 1 Trend in Percentage of population over 65 years by jurisdiction



Interpolation from the above data enables the year in which each jurisdiction reaches a point where 15% of its population is over 65 to be determined. This is shown in Table 2.

- Table 2 Year in which each jurisdiction reaches the point where 15% of its population is over 65 years

<b>Jurisdiction</b>	<b>Year</b>
SA	2004
TAS	2007
VIC	2011
NSW	2012
AUS	2014
QLD	2017
WA	2018
ACT	2020
NT	Not Applicable

This indicates the order in which jurisdictions will face the onset of major rises in the proportion of aged population and the associated increase in falls injury costs. South Australia and Tasmania are affected first with NSW and Victoria next. The window of opportunity for the former States to respond is therefore quite small.

Important indicators of the size of the impact of ageing on falls injury costs and service demands from 2001 to 2051 nationally are:

- The total health cost attributable to fall related injury, will increase almost threefold to \$1375 million per annum.
- 886,000 additional hospital bed days per annum or the equivalent of 2500 additional beds permanently allocated to falls injury treatment.
- 3320 additional nursing home places will be required.

The cost of fall related injury is not just driven by the total proportion of people over 65 years but by the distribution mix of ages within this group. An increasing proportion of people over 65 will reach the age of eighty or ninety, resulting in an increase need for service over time if the current rate of fall injury continues.

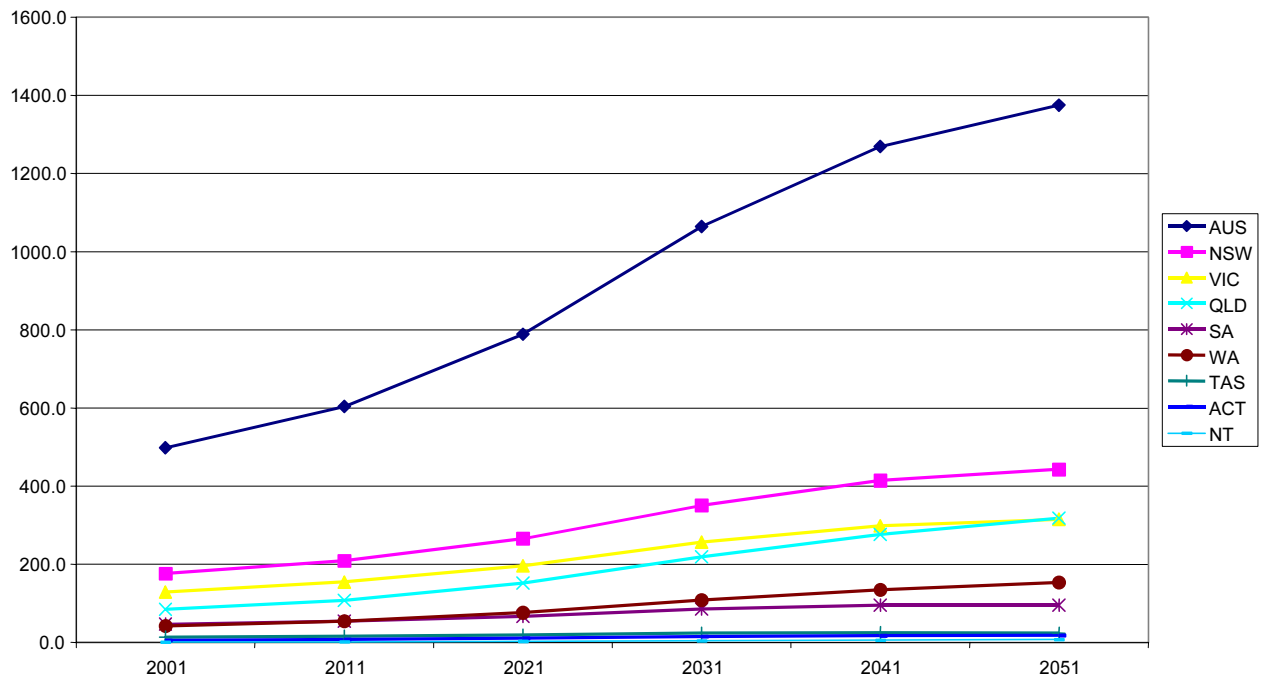
The trend line for falls costs therefore differs from that for population only. Table 3 and Figure 2 show overall health cost trends and Table 4 and Figure 3 trends in the need for nursing home places. Costs are predicted to rise to 2.7 times those in 2001 by 2051 and nursing home place demand by 2.8 times.

- Table 3 Trends in overall health costs (\$million) attributable to fall injury among persons age 65 years and over by jurisdiction 2001 -2051

	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>
AUS	498.2	603.9	788.7	1063.9	1268.7	1375.0
NSW	176.1	208.9	265.5	351.3	414.4	443.1
VIC	128.9	154.5	195.8	256.7	298.6	315.1
QLD	84.7	107.8	152.2	218.9	276.6	317.6
SA	46.8	54.0	66.4	85.3	95.5	95.7
WA	41.8	54.2	76.2	108.7	135.0	153.5
TAS	13.4	15.4	19.0	23.7	25.2	23.5
ACT	5.3	7.4	10.8	14.8	17.2	18.5
NT	1.0	1.6	2.7	4.3	5.9	7.6



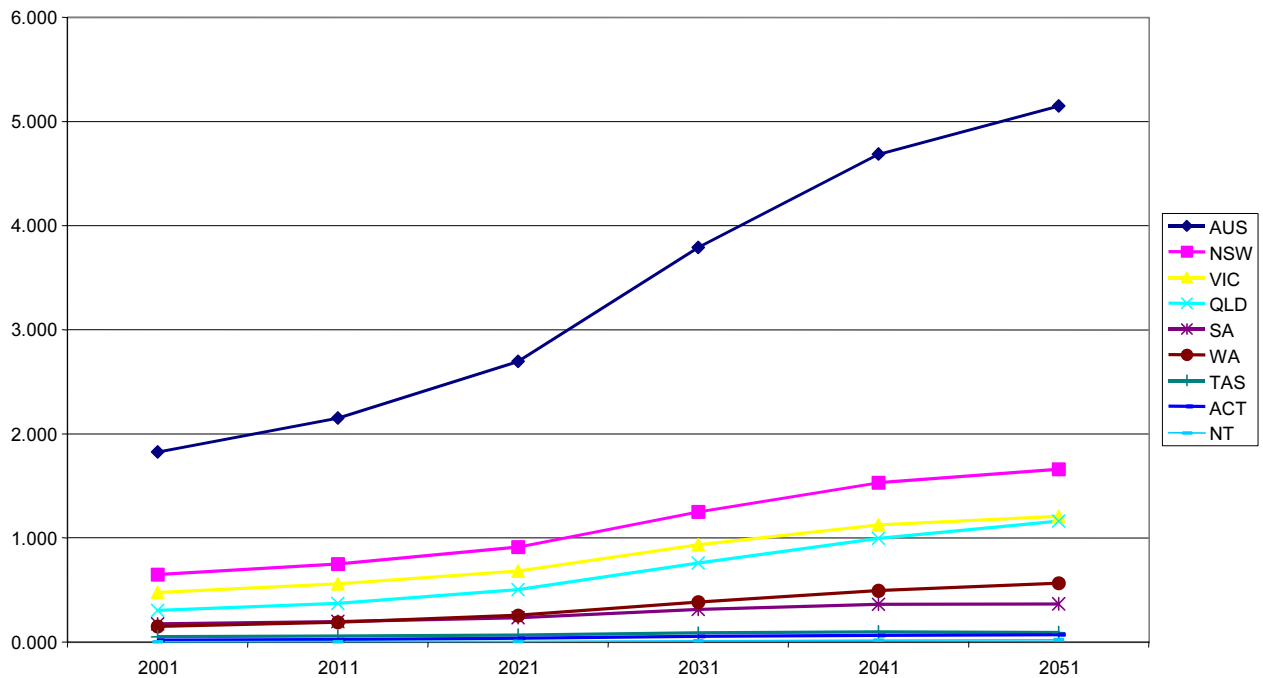
• Figure 2 Total fall related health cost (millions) trends by jurisdiction



• Table 4 Trends in nursing home places attributable to fall injury among persons age 65 years and over by jurisdiction 2001 -2051

Nursing home places 1000's						
	2001	2011	2021	2031	2041	2051
AUS	1.827	2.153	2.697	3.792	4.688	5.150
NSW	0.648	0.750	0.912	1.250	1.530	1.661
VIC	0.476	0.559	0.683	0.935	1.126	1.208
QLD	0.305	0.371	0.503	0.758	0.996	1.162
SA	0.175	0.198	0.233	0.312	0.363	0.367
WA	0.151	0.190	0.255	0.383	0.494	0.566
TAS	0.050	0.056	0.067	0.087	0.097	0.091
ACT	0.019	0.025	0.036	0.054	0.064	0.070
NT	0.003	0.004	0.007	0.012	0.017	0.023

• Figure 3 Nursing home beds (000's) by jurisdiction



The pattern of increase differs for each jurisdiction. Tasmania and South Australia which have started ageing and are expecting overall population stagnation have lower expected increase. This is because their base has already increased. WA and Queensland which have a younger population and for which overall steady population growth is forecast, will experience the biggest rises, although the trend towards these start a little later than for other mainland states. The Northern Territory, which has a very young population has a low level of demand, but will experience the highest proportional increase in costs.

The allocation of resources to fall prevention and treatment will need to differ from jurisdiction to jurisdiction according to the stage of their ageing process. Tasmania and South Australia have the greatest immediate need because they are already experiencing a higher level of demand as they have already started to age. Treatment costs are unavoidable once injury has occurred and it may be difficult to find money for prevention once treatment demands have increased. NSW and Victoria have the next most immediacy of demand with a small window of opportunity before 2006-2011 to implement prevention programs to offset the effects of the demographic changes that will increase during that time.

Western Australia and Queensland will experience similar changes but for different reasons. The major increase will occur slightly later and then rise more rapidly than other jurisdictions. WA's ageing population results from the migration patterns of the nineteen fifties and sixties and many people will age in the state where they have lived since that time. In Queensland however high levels of migration into the warmer climate near the sea are expected and much of the increase will be due to the ageing of retirees and relatively recent arrivals. This pattern will also be seen on the NSW Central and North Coasts.

• Table 5 Comparison of ratios of total health cost and nursing home demand 2051 compared with 2001 by jurisdiction

	<b>Total health costs Ratio 2051:2001</b>	<b>Nursing home places Ratio 2051:2001</b>
AUS	2.8	2.8
NSW	2.5	2.6
VIC	2.4	2.5
QLD	3.7	3.8
SA	2.0	2.1
WA	3.7	3.8
TAS	1.8	1.8
ACT	3.5	3.7
NT	7.3	7.8

The strategy for fall injury prevention and treatment will need to differ from jurisdiction to jurisdiction. Within each State and Territory, changes will not be uniform across regions and local areas. Local area data for NSW and South Australia demonstrate that some areas will experience very rapid ageing from comparatively young population bases while others will maintain the high levels of older people.

Policy makers and health department officials will be faced with the task of maintaining facilities in some areas, generating new facilities and programs in other areas, and winding back resources in areas where the concentration and number of older people is declining. In some areas rejuvenation will occur and resources for fall related injury are not likely to be needed as much. In other places, the concentration of older people will decline and the cost of meeting their needs may increase due to the lower density of demand. This last scenario will present interesting planning problems.

This paper provides information about the overall impact on each jurisdiction and shows that:

- The cost of fall related injury is expected to rise dramatically over the next fifty years unless effective prevention and lower treatment costs occur.
- If additional efforts to reduce the rate of falls injury for this age group are not implemented the total cost of treatment will rise to a point that is likely to make investment in prevention difficult once the demographic shift occurs in each jurisdiction.
- The issue will affect different jurisdictions in different ways and while national planning is needed to minimise the cost of increasing prevention and treatment efficiency, policy flexibility will be required to meet the needs of the different jurisdictions and the local areas within each of them.

## Detailed Results

### Detailed projected costs by jurisdiction

#### Australia

##### Australia

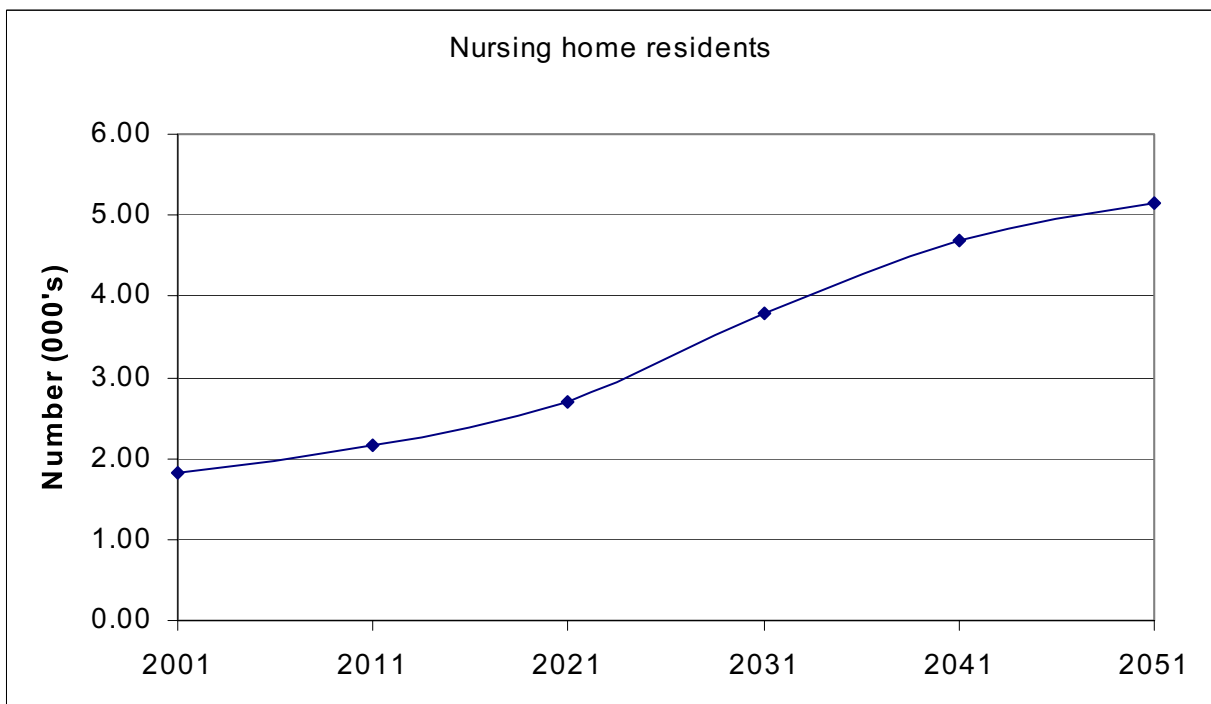
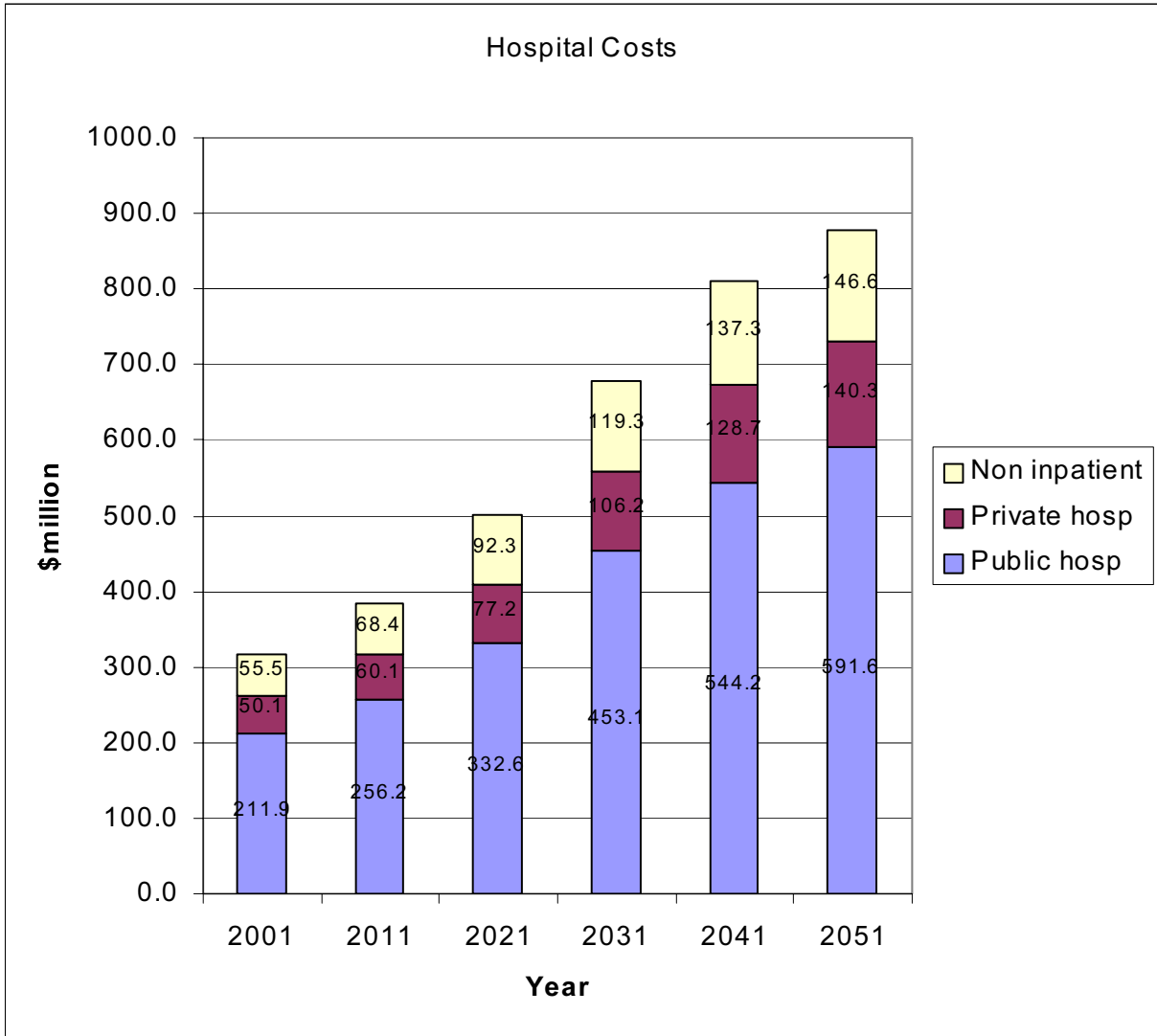
Projected costs related to falls injury

Based on ABS population projections Cat3222.0 Series 2

AIHW National average Unit cost and utilisation 1993-4

Costs (\$millions)	2001	2011	2021	2031	2041	2051	Ratio 2051:2001
Public hospital inpatient	211.9	256.2	332.6	453.1	544.2	591.6	2.79
Private hospital inpatient	50.1	60.1	77.2	106.2	128.7	140.3	2.80
Non inpatient	55.5	68.4	92.3	119.3	137.3	146.6	2.64
<b>Total Hospital</b>	<b>317.6</b>	<b>384.9</b>	<b>502.3</b>	<b>678.8</b>	<b>810.4</b>	<b>878.7</b>	<b>2.77</b>
Nursing homes	92.2	111.0	142.5	196.8	239.1	261.4	2.84
GP	20.4	24.8	32.8	43.2	50.6	54.4	2.66
Specialist	15.6	19.1	25.7	32.7	37.4	39.6	2.54
<b>Total Medical</b>	<b>36.0</b>	<b>43.9</b>	<b>58.5</b>	<b>75.9</b>	<b>88.0</b>	<b>94.0</b>	<b>2.61</b>
Prescription	7.8	9.5	12.8	16.3	18.6	19.8	2.55
Over the counter	2.1	2.5	3.4	4.4	5.0	5.3	2.54
<b>Total pharmaceutical</b>	<b>9.8</b>	<b>12.0</b>	<b>16.2</b>	<b>20.7</b>	<b>23.6</b>	<b>25.0</b>	<b>2.55</b>
Allied health	18.9	23.4	31.8	41.3	47.5	50.7	2.68
Other	24.0	29.1	38.0	51.3	61.1	66.3	2.76
<b>Total Costs</b>	<b>498.2</b>	<b>603.9</b>	<b>788.7</b>	<b>1063.9</b>	<b>1268.7</b>	<b>1375.0</b>	<b>2.76</b>
<b>Utilisation 000s</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	
Public hospital separations	32.5	38.7	50.0	67.4	80.7	87.4	2.69
Private hospital separations	7.2	8.5	11.0	14.9	17.9	19.4	2.71
<b>Total hospital separations</b>	<b>39.5</b>	<b>47.1</b>	<b>60.8</b>	<b>82.1</b>	<b>98.4</b>	<b>106.6</b>	<b>2.70</b>
Public hospital bed days	384.5	457.1	584.9	798.8	966.0	1051.0	2.73
Private hospital bed days	129.0	152.5	192.8	267.5	327.5	358.1	2.78
<b>Total hospital bed days</b>	<b>513.3</b>	<b>609.4</b>	<b>777.5</b>	<b>1066.0</b>	<b>1293.1</b>	<b>1408.6</b>	<b>2.74</b>
Non inpatient Occasions of service	543.8	659.0	884.7	1127.6	1289.3	1366.5	2.51
GP	583.8	701.1	924.2	1207.8	1411.1	1510.4	2.59
Specialist	239.3	288.8	386.8	493.3	564.8	598.4	2.50
<b>Total medical</b>	<b>823.2</b>	<b>990.1</b>	<b>1311.1</b>	<b>1701.4</b>	<b>1976.2</b>	<b>2109.2</b>	<b>2.56</b>
No of prescriptions	387.8	467.8	623.1	800.9	923.3	982.1	2.53
Allied health consults	698.6	851.1	1162.6	1449.1	1622.8	1700.8	2.43
Nursing home residents	1.83	2.15	2.70	3.79	4.69	5.15	2.82

Summary indicators of falls injury costs Australia



## New South Wales

### NSW

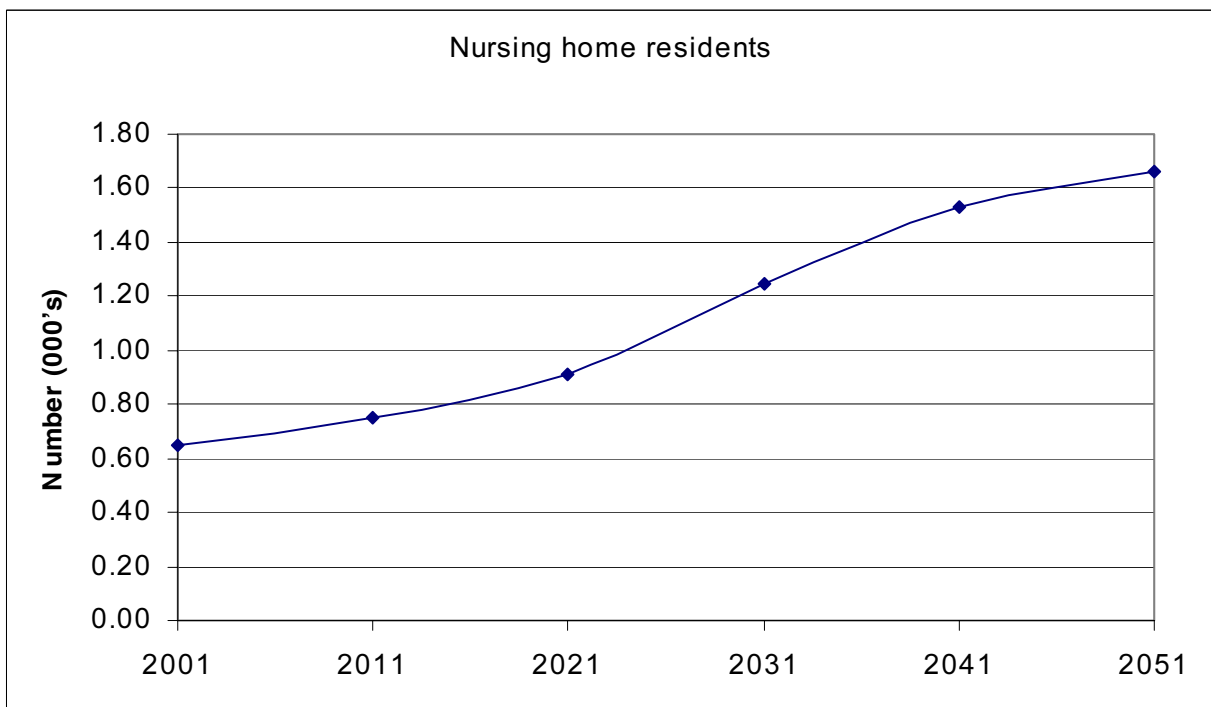
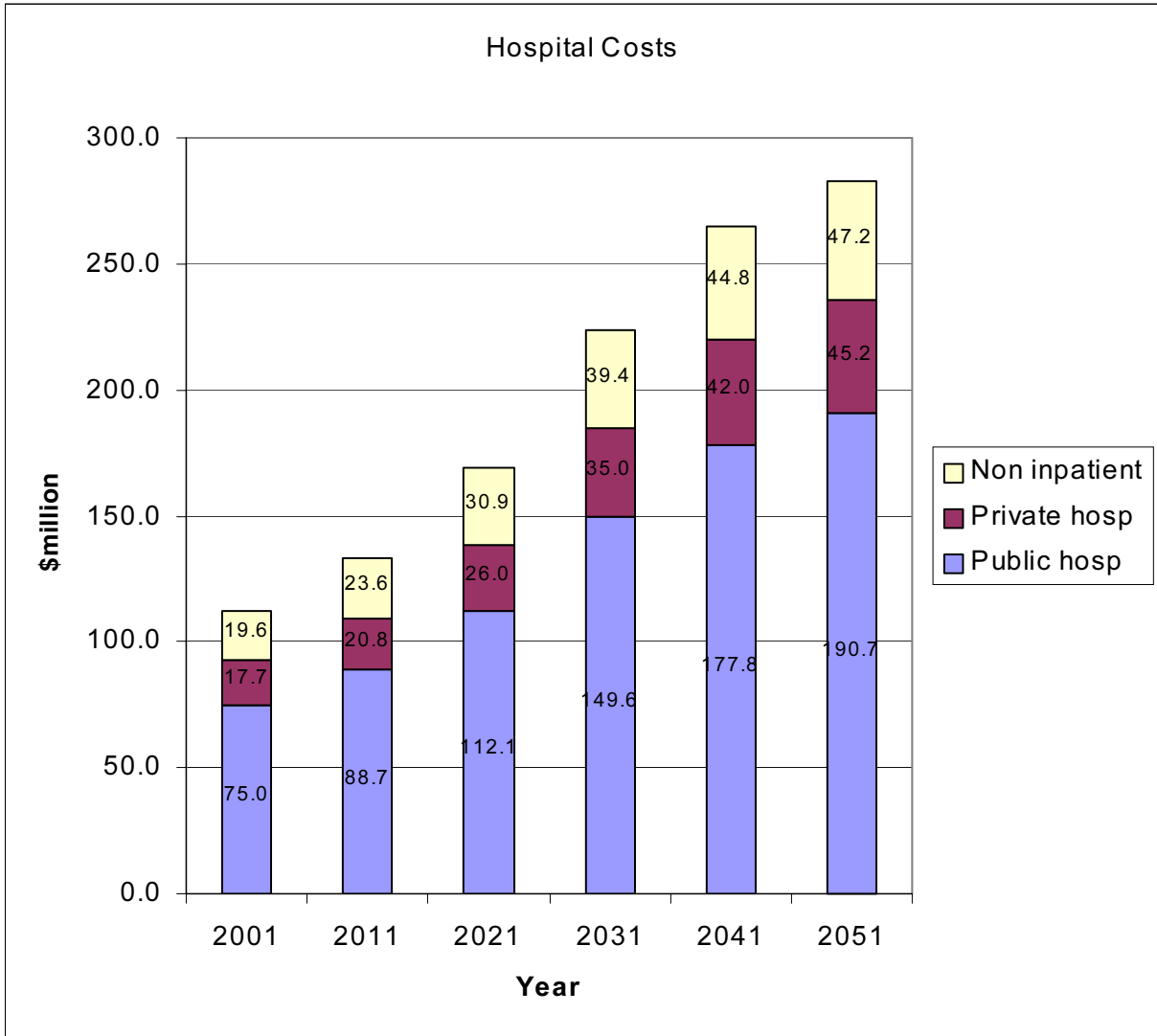
Projected costs related to falls injury

Based on ABS population projections Cat3222.0 Series 2

AIHW National average Unit cost and utilisation 1993-4

Costs (\$millions)	2001	2011	2021	2031	2041	2051	Ratio 2051:2001
Public hospital inpatient	75.0	88.7	112.1	149.6	177.8	190.7	2.54
Private hospital inpatient	17.7	20.8	26.0	35.0	42.0	45.2	2.55
Non inpatient	19.6	23.6	30.9	39.4	44.8	47.2	2.41
<i>Total Hospital</i>	<i>112.3</i>	<i>133.2</i>	<i>169.1</i>	<i>224.1</i>	<i>264.7</i>	<i>283.2</i>	<i>2.52</i>
Nursing homes	32.6	38.5	48.1	65.0	78.1	84.3	2.59
GP	7.2	8.6	11.0	14.3	16.5	17.5	2.43
Specialist	5.5	6.6	8.6	10.8	12.2	12.7	2.32
<i>Total Medical</i>	<i>12.7</i>	<i>15.1</i>	<i>19.6</i>	<i>25.1</i>	<i>28.7</i>	<i>30.3</i>	<i>2.38</i>
Prescription	2.7	3.3	4.3	5.4	6.1	6.4	2.32
Over the counter	0.7	0.9	1.2	1.4	1.6	1.7	2.31
<i>Total pharmaceutical</i>	<i>3.5</i>	<i>4.1</i>	<i>5.4</i>	<i>6.8</i>	<i>7.7</i>	<i>8.1</i>	<i>2.32</i>
Allied health	6.7	8.1	10.6	13.6	15.5	16.3	2.44
Other	8.5	10.1	12.8	16.9	20.0	21.4	2.51
<i>Total Costs</i>	<i>176.1</i>	<i>208.9</i>	<i>265.5</i>	<i>351.3</i>	<i>414.4</i>	<i>443.1</i>	<i>2.52</i>
<b>Utilisation 000s</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	
Public hospital separations	11.5	13.4	16.8	22.2	26.3	28.2	2.45
Private hospital separations	2.5	3.0	3.7	4.9	5.8	6.3	2.46
<i>Total hospital separations</i>	<i>14.0</i>	<i>16.3</i>	<i>20.5</i>	<i>27.1</i>	<i>32.1</i>	<i>34.4</i>	<i>2.45</i>
Public hospital bed days	136.3	158.6	197.2	263.3	315.0	338.8	2.49
Private hospital bed days	45.8	53.0	65.1	88.2	106.8	115.5	2.52
<i>Total hospital bed days</i>	<i>182.0</i>	<i>211.6</i>	<i>262.2</i>	<i>351.3</i>	<i>421.7</i>	<i>454.1</i>	<i>2.49</i>
Non inpatient Occasions of service	192.3	227.1	296.0	371.8	419.8	439.3	2.28
GP	206.7	242.3	310.0	398.1	459.7	486.1	2.35
Specialist	84.7	99.5	129.4	162.6	183.8	192.4	2.27
<i>Total medical</i>	<i>291.4</i>	<i>341.9</i>	<i>439.5</i>	<i>560.7</i>	<i>643.6</i>	<i>678.6</i>	<i>2.33</i>
No of prescriptions	137.3	161.4	208.7	264.0	300.6	315.9	2.30
Allied health consults	246.9	292.5	387.8	477.5	528.0	546.2	2.21
Nursing home residents	0.65	0.75	0.91	1.25	1.53	1.66	2.56

Summary indicators of falls injury costs New South Wales



## Victoria

### VIC

Projected costs related to falls injury

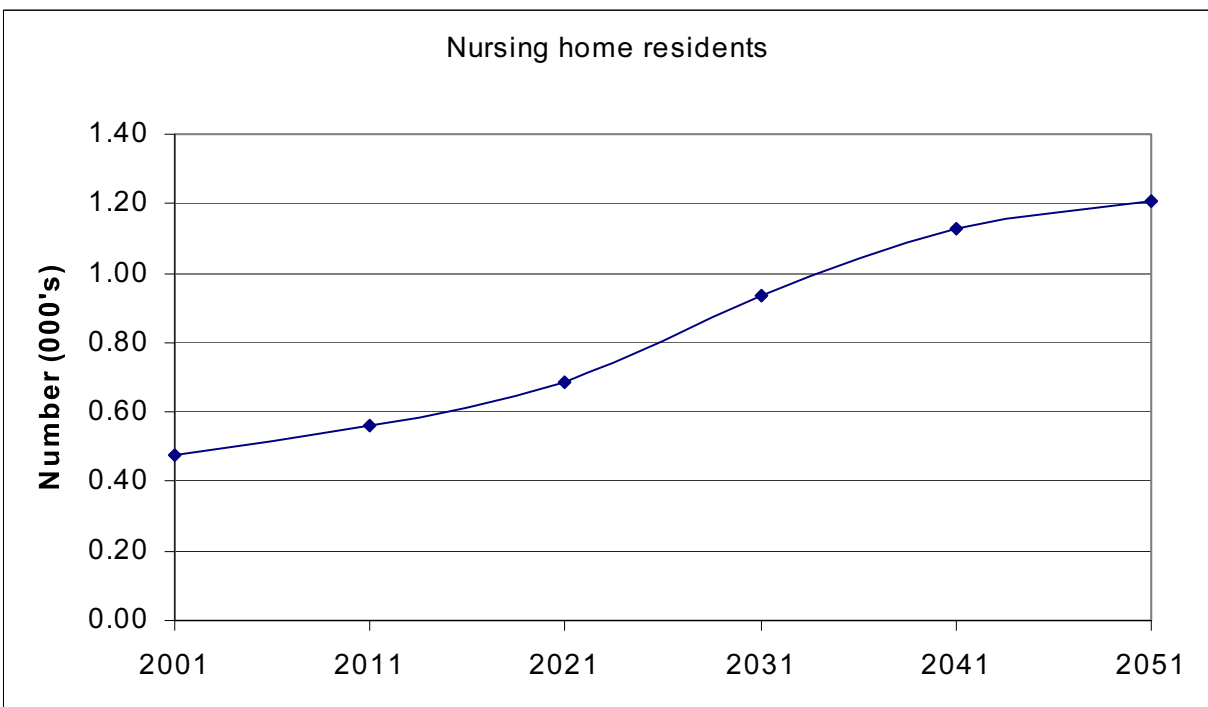
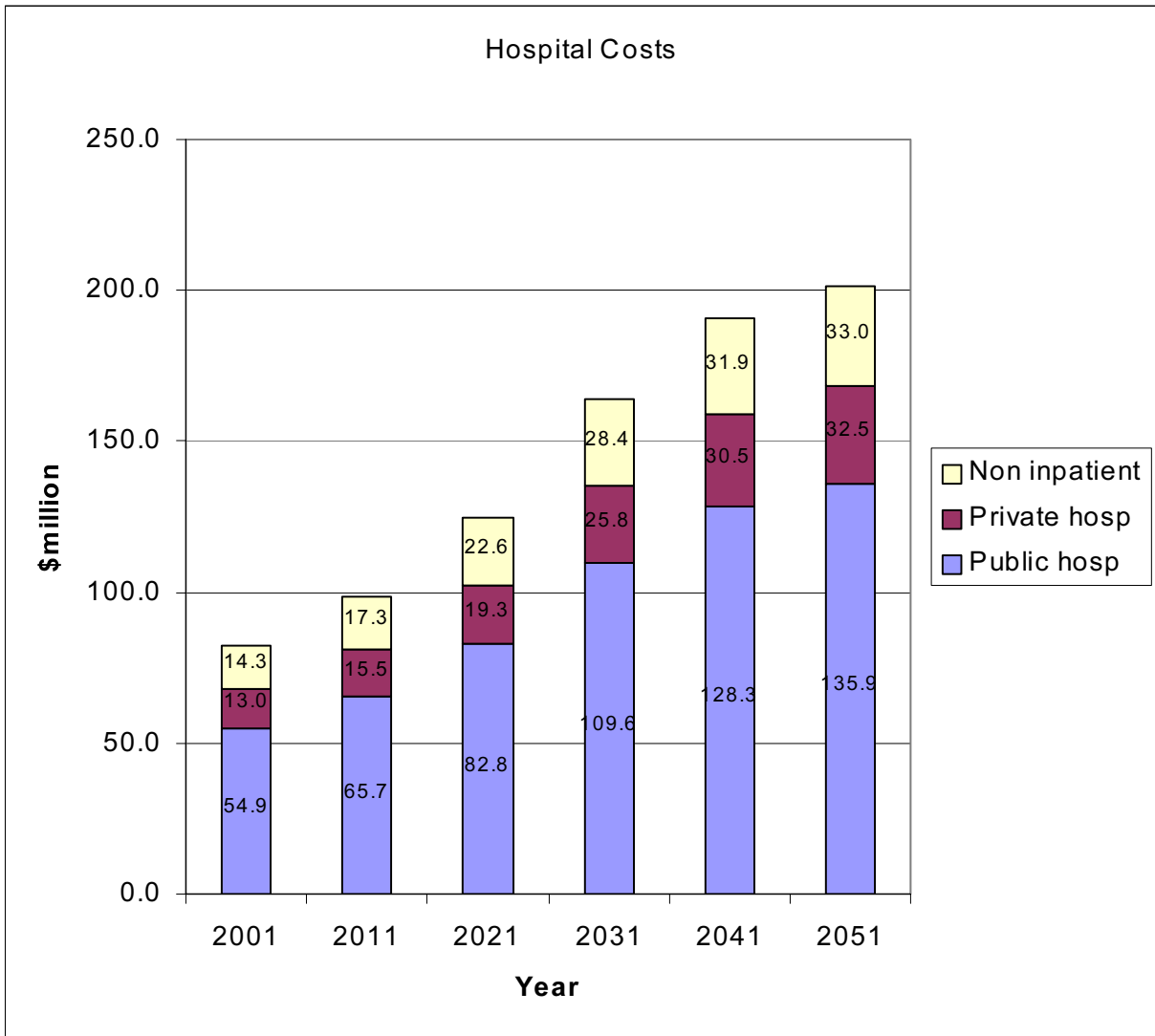
Based on ABS population projections Cat3222.0 Series 2

AIHW National average Unit cost and utilisation 1993-4

Costs (\$millions)	2001	2011	2021	2031	2041	2051	Ratio 2051:2001
Public hospital inpatient	54.9	65.7	82.8	109.6	128.3	135.9	2.48
Private hospital inpatient	13.0	15.5	19.3	25.8	30.5	32.5	2.50
Non inpatient	14.3	17.3	22.6	28.4	31.9	33.0	2.31
<i>Total Hospital</i>	<i>82.2</i>	<i>98.5</i>	<i>124.7</i>	<i>163.8</i>	<i>190.8</i>	<i>201.5</i>	<i>2.45</i>
Nursing homes	23.9	28.5	35.5	47.7	56.5	60.3	2.53
GP	5.3	6.3	8.1	10.4	11.9	12.4	2.35
Specialist	4.0	4.8	6.3	7.8	8.7	9.0	2.23
<i>Total Medical</i>	<i>9.3</i>	<i>11.2</i>	<i>14.4</i>	<i>18.2</i>	<i>20.6</i>	<i>21.4</i>	<i>2.30</i>
Prescription	2.0	2.4	3.1	3.9	4.3	4.5	2.23
Over the counter	0.5	0.6	0.8	1.0	1.2	1.2	2.22
<i>Total pharmaceutical</i>	<i>2.5</i>	<i>3.0</i>	<i>4.0</i>	<i>4.9</i>	<i>5.5</i>	<i>5.7</i>	<i>2.23</i>
Allied health	4.9	5.9	7.8	9.8	11.0	11.4	2.33
Other	6.2	7.4	9.4	12.4	14.4	15.2	2.44
<i>Total Costs</i>	<i>128.9</i>	<i>154.5</i>	<i>195.8</i>	<i>256.7</i>	<i>298.6</i>	<i>315.1</i>	<i>2.45</i>
<b>Utilisation 000s</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	
Public hospital separations	8.4	10.0	12.5	16.5	19.2	20.3	2.41
Private hospital separations	1.9	2.2	2.8	3.6	4.3	4.5	2.42
<i>Total hospital separations</i>	<i>10.3</i>	<i>12.1</i>	<i>15.3</i>	<i>20.1</i>	<i>23.5</i>	<i>24.8</i>	<i>2.41</i>
Public hospital bed days	100.0	118.0	147.1	195.6	230.8	244.9	2.45
Private hospital bed days	33.6	39.5	48.7	65.8	78.6	83.8	2.50
<i>Total hospital bed days</i>	<i>133.6</i>	<i>157.5</i>	<i>195.8</i>	<i>261.3</i>	<i>309.3</i>	<i>328.6</i>	<i>2.46</i>
Non inpatient Occasions of service	141.1	167.8	219.0	271.8	303.8	312.6	2.21
GP	151.7	179.6	230.4	293.3	334.9	348.6	2.30
Specialist	62.2	73.7	96.0	119.3	133.6	137.4	2.21
<i>Total medical</i>	<i>214.0</i>	<i>253.4</i>	<i>326.5</i>	<i>412.6</i>	<i>468.5</i>	<i>486.1</i>	<i>2.27</i>
No of prescriptions	100.8	119.5	154.7	193.8	218.4	225.7	2.24
Allied health consults	181.3	216.1	287.0	348.0	381.0	386.7	2.13
Nursing home residents	0.48	0.56	0.68	0.93	1.13	1.21	2.54



Summary indicators of falls injury costs Victoria



## Queensland

### QLD

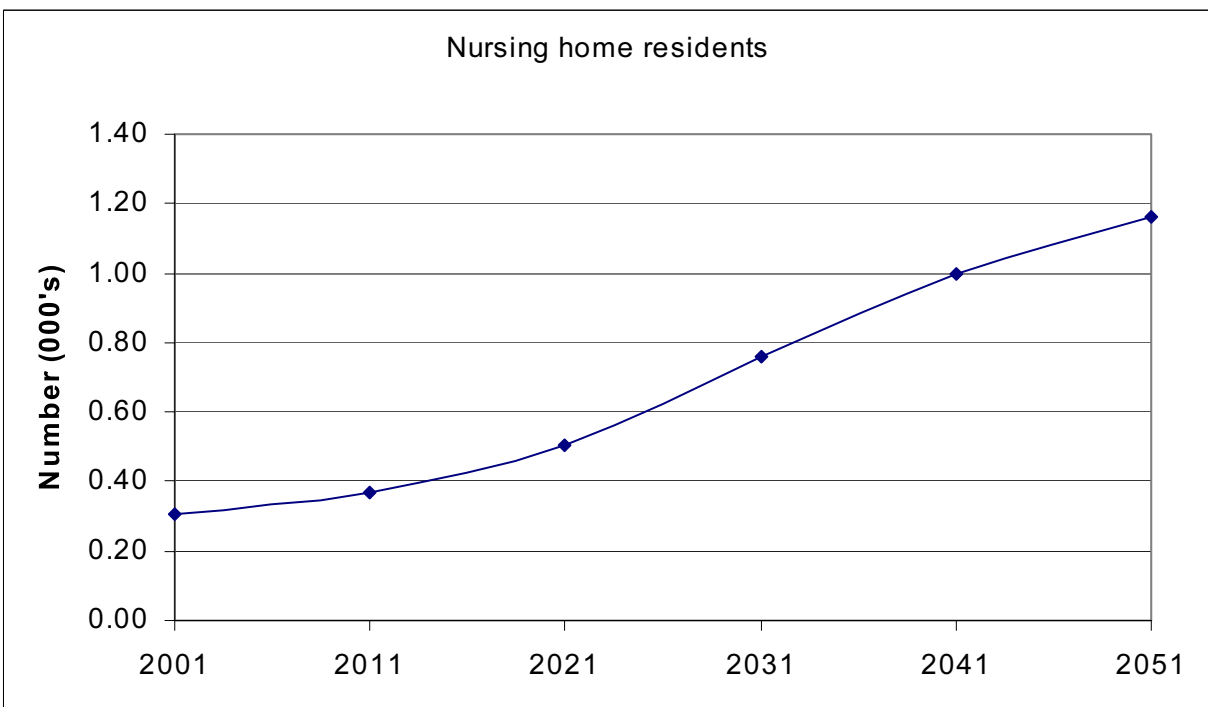
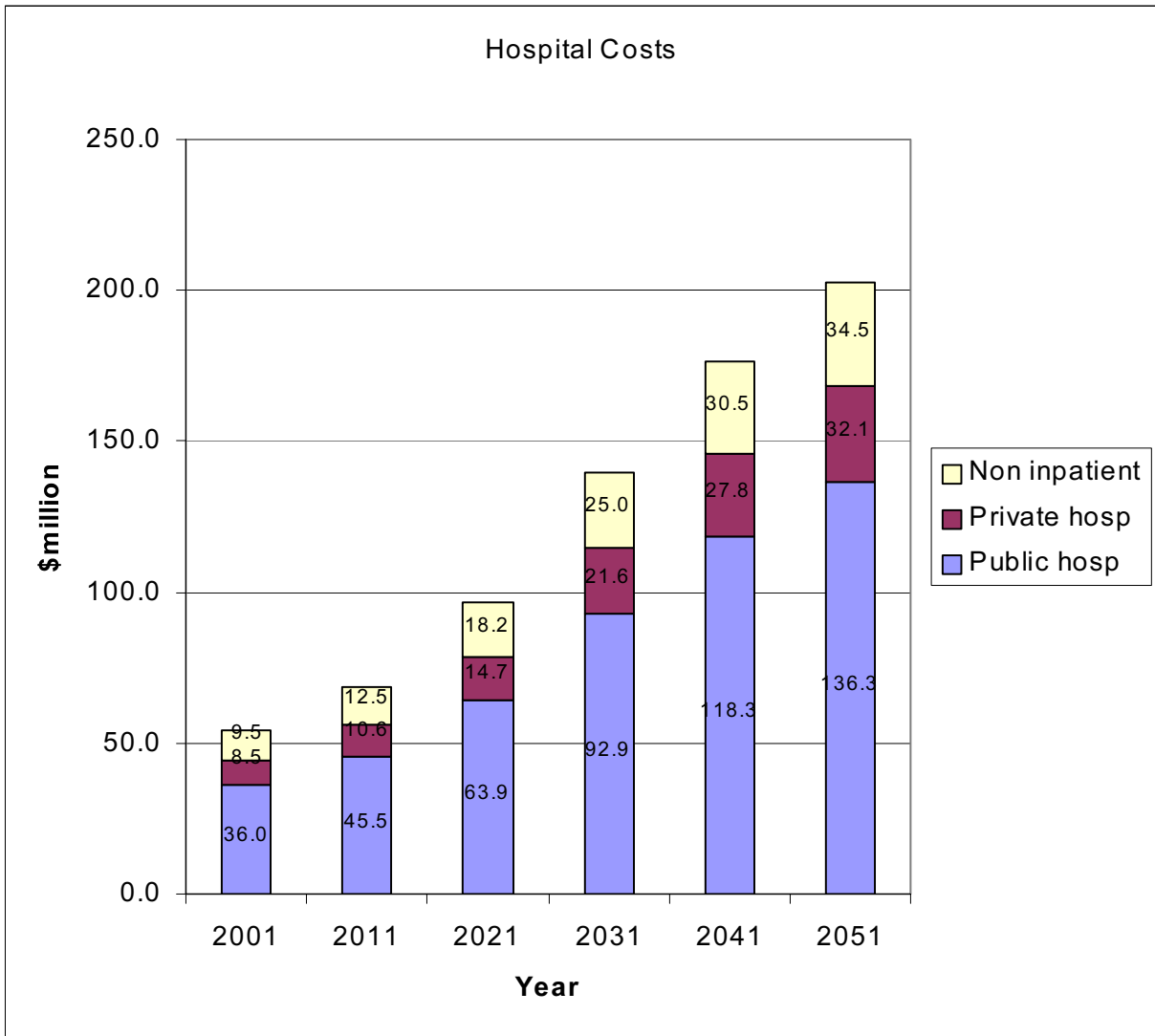
Projected costs related to falls injury

Based on ABS population projections Cat3222.0 Series 2

AIHW National average Unit cost and utilisation 1993-4

Costs (\$millions)	2001	2011	2021	2031	2041	2051	Ratio 2051:2001
Public hospital inpatient	36.0	45.5	63.9	92.9	118.3	136.3	3.79
Private hospital inpatient	8.5	10.6	14.7	21.6	27.8	32.1	3.79
Non inpatient	9.5	12.5	18.2	25.0	30.5	34.5	3.61
<i>Total Hospital</i>	<i>54.0</i>	<i>68.6</i>	<i>96.9</i>	<i>139.6</i>	<i>176.6</i>	<i>202.9</i>	<i>3.76</i>
Nursing homes	15.6	19.6	27.2	40.2	51.7	60.0	3.84
GP	3.5	4.5	6.4	8.9	11.1	12.6	3.63
Specialist	2.7	3.5	5.0	6.8	8.3	9.3	3.49
<i>Total Medical</i>	<i>6.1</i>	<i>7.9</i>	<i>11.4</i>	<i>15.8</i>	<i>19.4</i>	<i>21.9</i>	<i>3.57</i>
Prescription	1.3	1.7	2.5	3.4	4.1	4.6	3.49
Over the counter	0.4	0.5	0.7	0.9	1.1	1.2	3.48
<i>Total pharmaceutical</i>	<i>1.7</i>	<i>2.2</i>	<i>3.2</i>	<i>4.3</i>	<i>5.2</i>	<i>5.9</i>	<i>3.49</i>
Allied health	3.3	4.3	6.3	8.7	10.6	11.9	3.66
Other	4.1	5.2	7.3	10.6	13.3	15.3	3.75
<i>Total Costs</i>	<i>84.7</i>	<i>107.8</i>	<i>152.2</i>	<i>218.9</i>	<i>276.6</i>	<i>317.6</i>	<i>3.75</i>
<b>Utilisation 000s</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	
Public hospital separations	5.5	6.8	9.5	13.7	17.4	20.0	3.66
Private hospital separations	1.2	1.5	2.1	3.0	3.8	4.4	3.68
<i>Total hospital separations</i>	<i>6.6</i>	<i>8.3</i>	<i>11.5</i>	<i>16.7</i>	<i>21.2</i>	<i>24.3</i>	<i>3.67</i>
Public hospital bed days	64.4	79.9	110.5	161.5	207.3	239.0	3.71
Private hospital bed days	21.6	26.4	36.1	53.7	69.8	81.0	3.76
<i>Total hospital bed days</i>	<i>86.0</i>	<i>106.3</i>	<i>146.6</i>	<i>215.2</i>	<i>277.1</i>	<i>319.9</i>	<i>3.72</i>
Non inpatient Occasions of service	92.0	118.9	172.2	233.8	283.6	317.5	3.45
GP	98.3	124.8	177.7	247.7	307.1	347.5	3.54
Specialist	40.4	51.9	75.0	102.0	123.9	138.6	3.43
<i>Total medical</i>	<i>138.7</i>	<i>176.8</i>	<i>252.7</i>	<i>349.7</i>	<i>431.0</i>	<i>486.2</i>	<i>3.51</i>
No of prescriptions	65.4	83.9	120.6	165.2	202.1	227.1	3.47
Allied health consults	118.4	154.9	228.0	302.9	360.1	398.1	3.36
Nursing home residents	0.30	0.37	0.50	0.76	1.00	1.16	3.81

Summary indicators of falls injury costs Queensland



## South Australia

SA

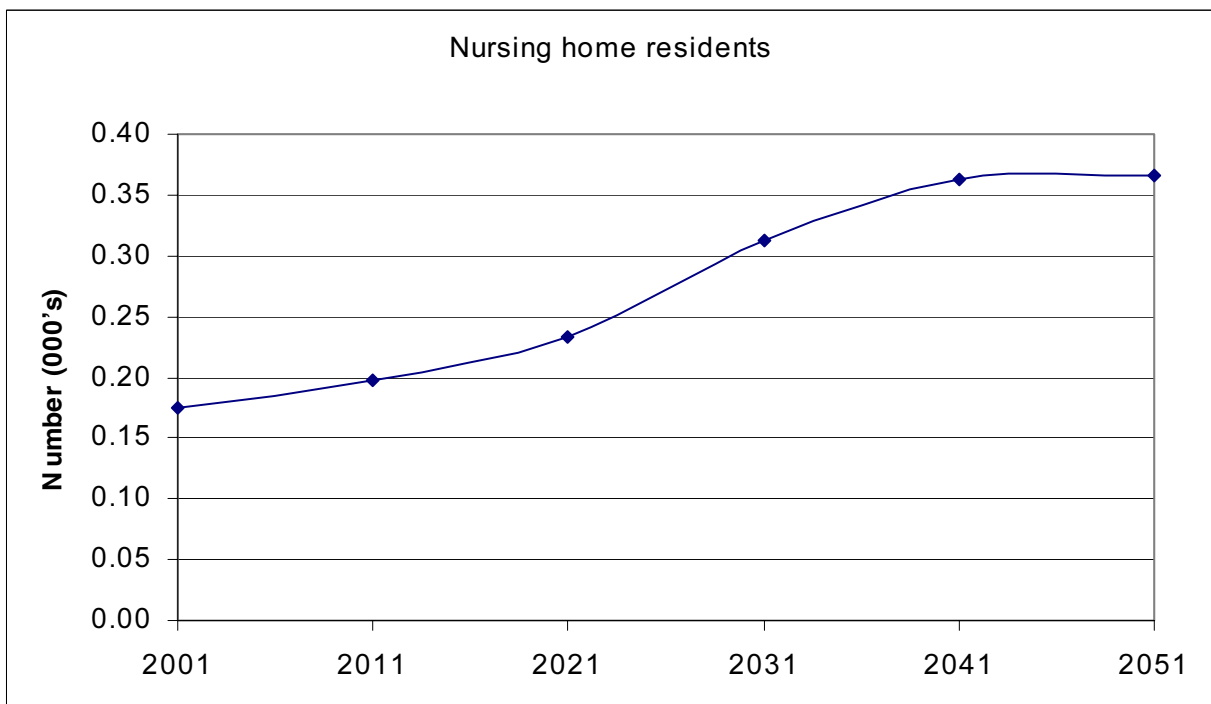
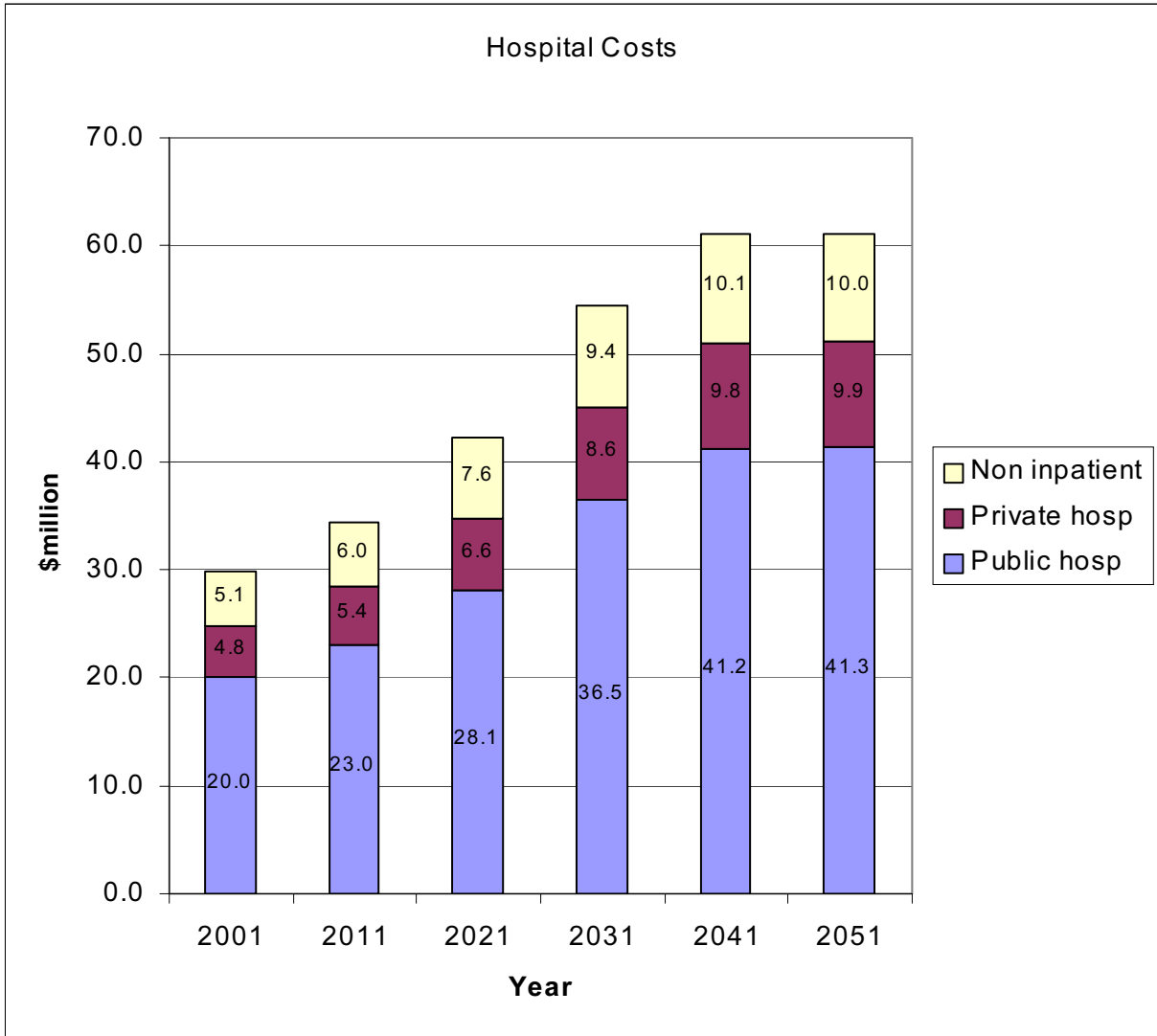
Projected costs related to falls injury

Based on ABS population projections Cat3222.0 Series 2

AIHW National average Unit cost and utilisation 1993-4

<b>Costs (\$millions)</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	<b>Ratio 2051:2001</b>
Public hospital inpatient	20.0	23.0	28.1	36.5	41.2	41.3	2.07
Private hospital inpatient	4.8	5.4	6.6	8.6	9.8	9.9	2.07
Non inpatient	5.1	6.0	7.6	9.4	10.1	10.0	1.95
<i>Total Hospital</i>	<i>29.9</i>	<i>34.4</i>	<i>42.3</i>	<i>54.5</i>	<i>61.0</i>	<i>61.2</i>	<i>2.05</i>
Nursing homes	8.7	10.0	12.1	16.0	18.2	18.4	2.10
GP	1.9	2.2	2.7	3.4	3.8	3.7	1.97
Specialist	1.4	1.7	2.1	2.6	2.7	2.7	1.87
<i>Total Medical</i>	<i>3.3</i>	<i>3.9</i>	<i>4.9</i>	<i>6.0</i>	<i>6.5</i>	<i>6.4</i>	<i>1.92</i>
Prescription	0.7	0.8	1.1	1.3	1.4	1.3	1.87
Over the counter	0.2	0.2	0.3	0.3	0.4	0.4	1.86
<i>Total pharmaceutical</i>	<i>0.9</i>	<i>1.1</i>	<i>1.3</i>	<i>1.6</i>	<i>1.7</i>	<i>1.7</i>	<i>1.87</i>
Allied health	1.7	2.1	2.6	3.2	3.5	3.4	1.97
Other	2.3	2.6	3.2	4.1	4.6	4.6	2.04
<i>Total Costs</i>	<i>46.8</i>	<i>54.0</i>	<i>66.4</i>	<i>85.3</i>	<i>95.5</i>	<i>95.7</i>	<i>2.04</i>
<b>Utilisation 000s</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	
Public hospital separations	3.1	3.5	4.3	5.5	6.1	6.1	1.99
Private hospital separations	0.7	0.8	0.9	1.2	1.4	1.4	2.01
<i>Total hospital separations</i>	<i>3.7</i>	<i>4.3</i>	<i>5.2</i>	<i>6.6</i>	<i>7.5</i>	<i>7.5</i>	<i>2.00</i>
Public hospital bed days	36.5	41.4	50.0	64.9	73.7	73.9	2.03
Private hospital bed days	12.3	13.9	16.6	21.9	25.2	25.4	2.06
<i>Total hospital bed days</i>	<i>48.8</i>	<i>55.3</i>	<i>66.6</i>	<i>86.8</i>	<i>98.9</i>	<i>99.3</i>	<i>2.04</i>
Non inpatient Occasions of service	50.3	57.9	73.7	88.8	94.6	92.9	1.85
GP	54.6	62.4	77.8	96.3	105.2	104.2	1.91
Specialist	22.2	25.4	32.3	38.9	41.5	40.8	1.84
<i>Total medical</i>	<i>76.8</i>	<i>87.9</i>	<i>110.1</i>	<i>135.3</i>	<i>146.7</i>	<i>145.0</i>	<i>1.89</i>
No of prescriptions	36.0	41.3	52.1	63.4	68.2	67.2	1.86
Allied health consults	64.1	74.1	96.1	112.8	117.2	114.1	1.78
Nursing home residents	0.18	0.20	0.23	0.31	0.36	0.37	2.10

Summary indicators of falls injury costs South Australia



## Western Australia

### WA

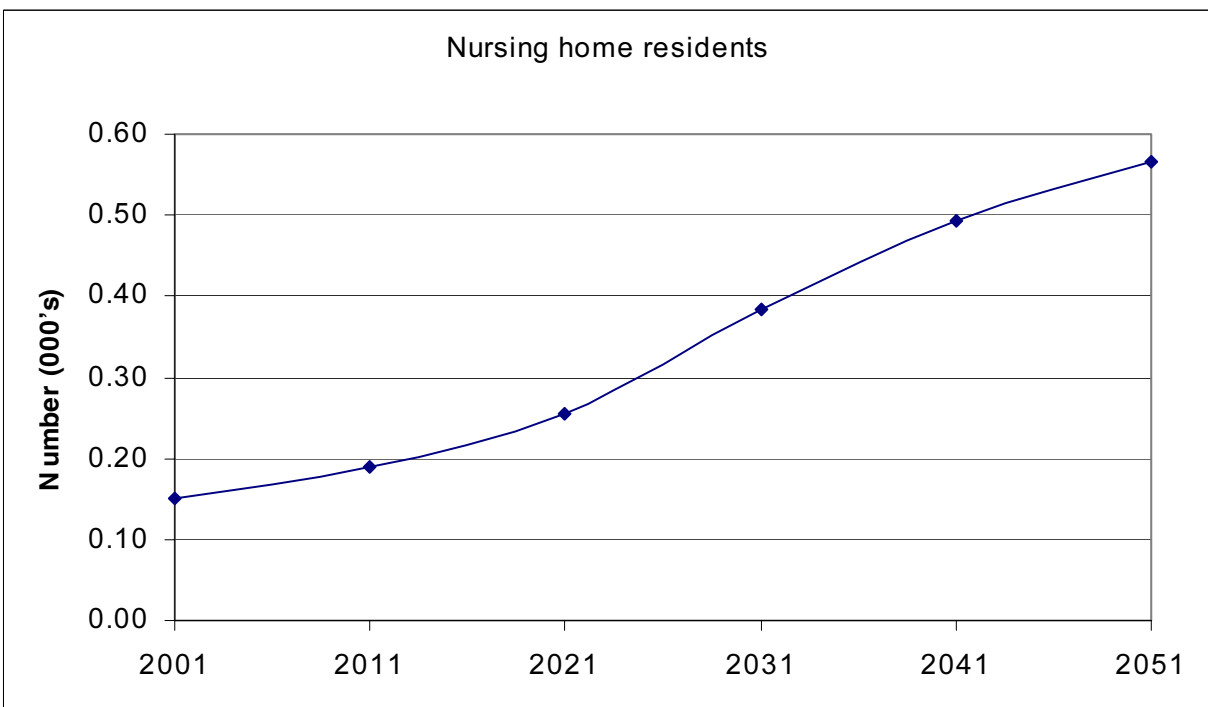
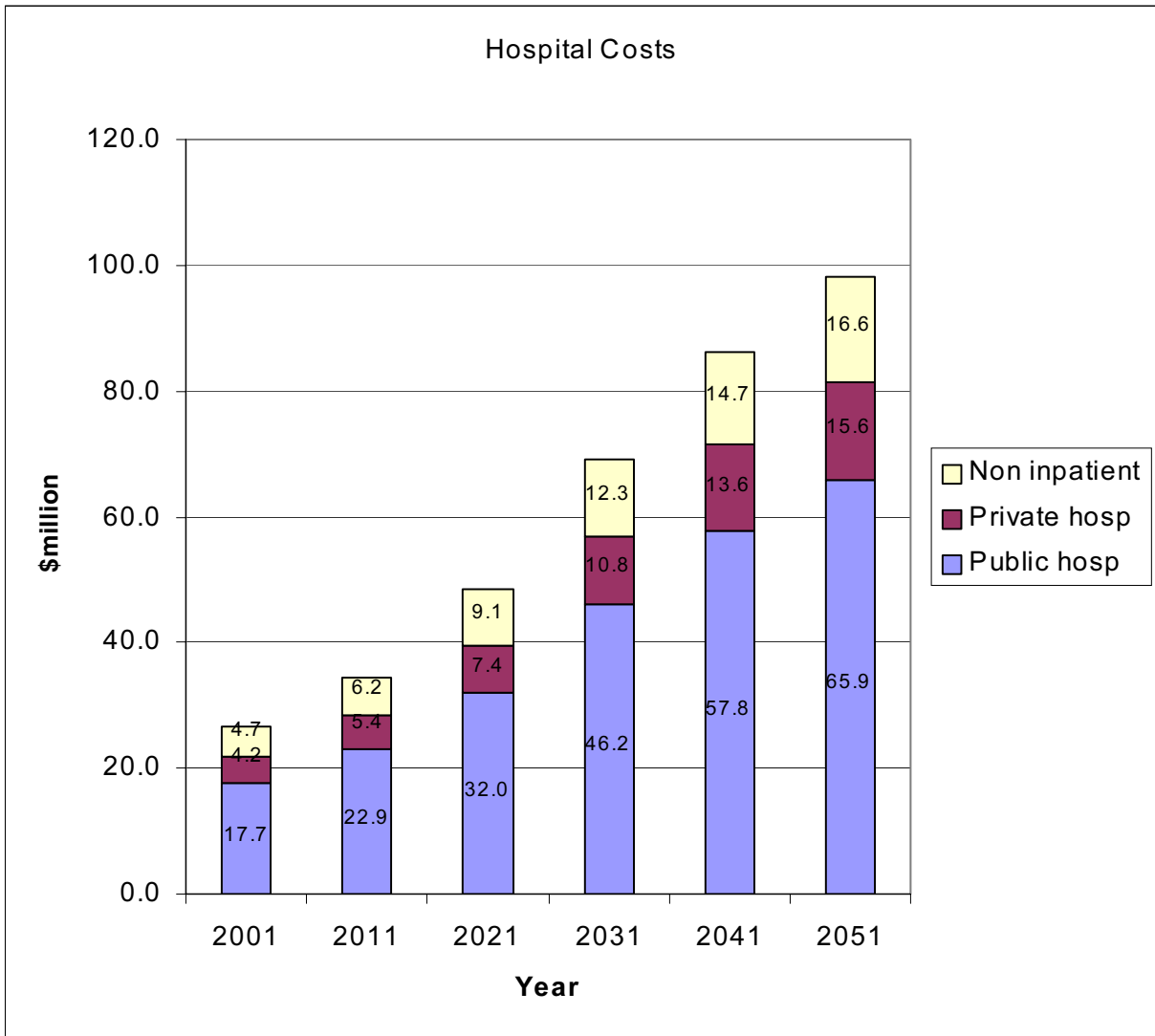
Projected costs related to falls injury

Based on ABS population projections Cat3222.0 Series 2

AIHW National average Unit cost and utilisation 1993-4

<b>Costs (\$millions)</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	<b>Ratio 2051:2001</b>
Public hospital inpatient	17.7	22.9	32.0	46.2	57.8	65.9	3.71
Private hospital inpatient	4.2	5.4	7.4	10.8	13.6	15.6	3.72
Non inpatient	4.7	6.2	9.1	12.3	14.7	16.6	3.51
<i>Total Hospital</i>	<i>26.7</i>	<i>34.5</i>	<i>48.5</i>	<i>69.3</i>	<i>86.2</i>	<i>98.1</i>	<i>3.68</i>
Nursing homes	7.7	9.9	13.7	20.0	25.4	29.0	3.77
GP	1.7	2.2	3.2	4.4	5.4	6.1	3.54
Specialist	1.3	1.7	2.5	3.4	4.0	4.5	3.38
<i>Total Medical</i>	<i>3.0</i>	<i>4.0</i>	<i>5.7</i>	<i>7.8</i>	<i>9.4</i>	<i>10.6</i>	<i>3.47</i>
Prescription	0.7	0.9	1.3	1.7	2.0	2.2	3.39
Over the counter	0.2	0.2	0.3	0.4	0.5	0.6	3.37
<i>Total pharmaceutical</i>	<i>0.8</i>	<i>1.1</i>	<i>1.6</i>	<i>2.1</i>	<i>2.5</i>	<i>2.8</i>	<i>3.39</i>
Allied health	1.6	2.1	3.1	4.2	5.1	5.7	3.56
Other	2.0	2.6	3.7	5.2	6.5	7.4	3.67
<i>Total Costs</i>	<i>41.8</i>	<i>54.2</i>	<i>76.2</i>	<i>108.7</i>	<i>135.0</i>	<i>153.5</i>	<i>3.67</i>
<b>Utilisation 000s</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	
Public hospital separations	2.7	3.5	4.8	6.9	8.6	9.7	3.58
Private hospital separations	0.6	0.8	1.1	1.5	1.9	2.2	3.60
<i>Total hospital separations</i>	<i>3.3</i>	<i>4.2</i>	<i>5.8</i>	<i>8.3</i>	<i>10.4</i>	<i>11.8</i>	<i>3.58</i>
Public hospital bed days	32.0	40.7	55.9	81.0	102.1	116.3	3.63
Private hospital bed days	10.7	13.5	18.3	27.1	34.5	39.5	3.69
<i>Total hospital bed days</i>	<i>42.7</i>	<i>54.2</i>	<i>74.3</i>	<i>108.1</i>	<i>136.6</i>	<i>155.8</i>	<i>3.65</i>
Non inpatient Occasions of service	46.1	59.8	86.5	115.4	137.7	154.1	3.34
GP	49.1	63.1	89.6	123.1	150.0	169.0	3.44
Specialist	20.3	26.2	37.8	50.4	60.2	67.4	3.32
<i>Total medical</i>	<i>69.4</i>	<i>89.3</i>	<i>127.4</i>	<i>173.6</i>	<i>210.3</i>	<i>236.4</i>	<i>3.40</i>
No of prescriptions	32.8	42.3	60.7	81.8	98.4	110.4	3.37
Allied health consults	59.6	77.7	114.4	148.7	173.7	193.0	3.24
Nursing home residents	0.15	0.19	0.26	0.38	0.49	0.57	3.75

Summary indicators of falls injury costs Western Australia



## Tasmania

### TAS

Projected costs related to falls injury

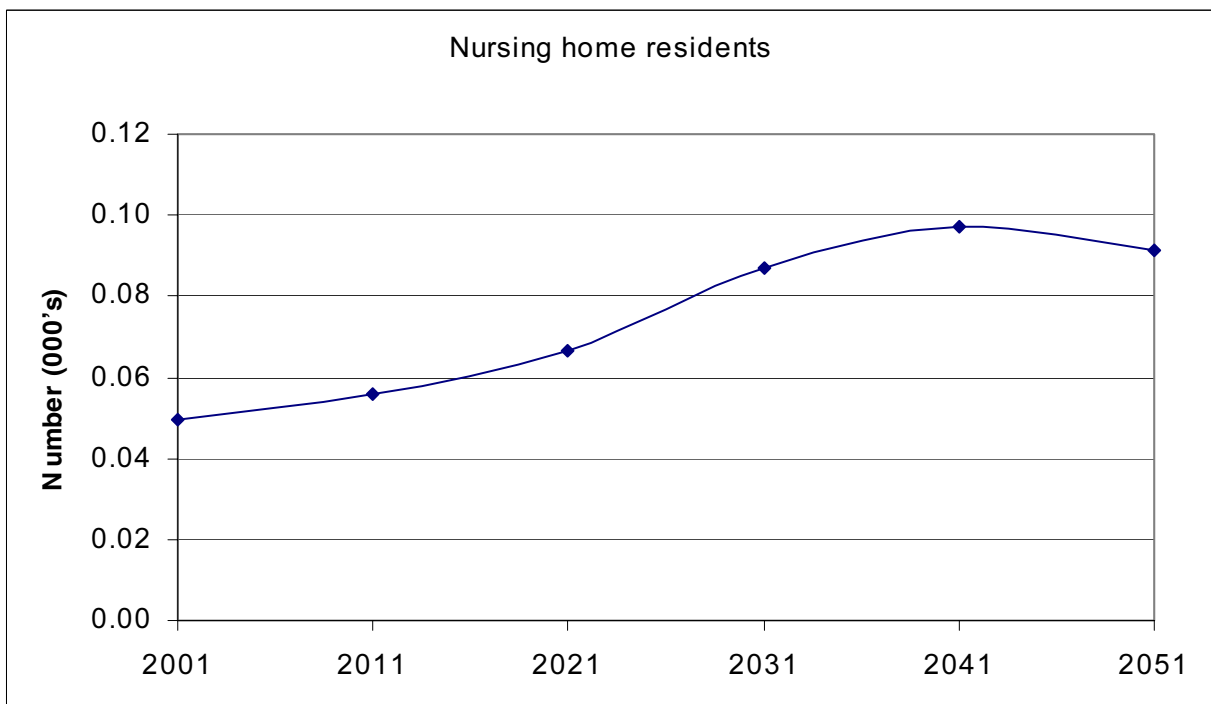
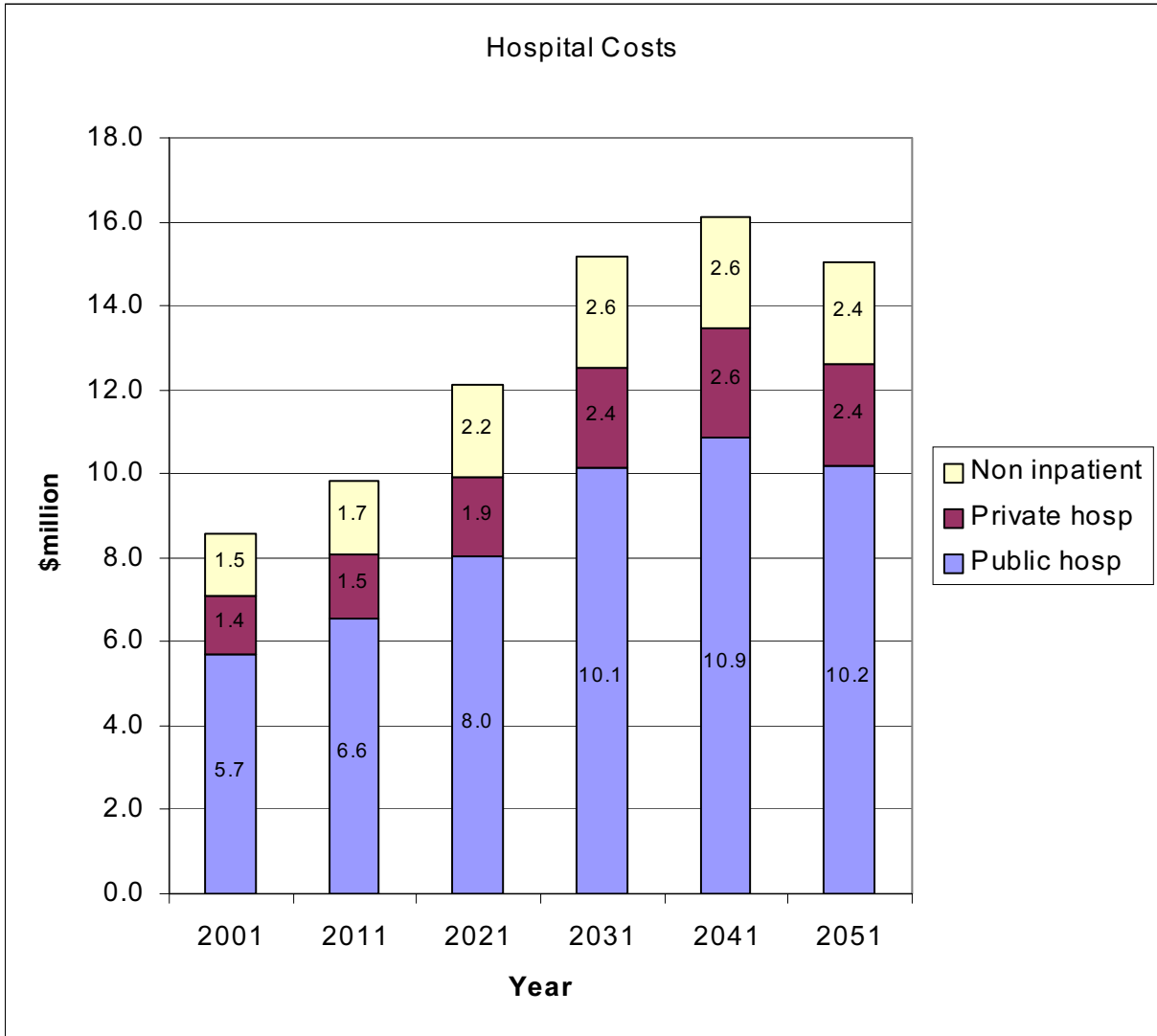
Based on ABS population projections Cat3222.0 Series 2

AIHW National average Unit cost and utilisation 1993-4

<b>Costs (\$millions)</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	<b>Ratio 2051:2001</b>
Public hospital inpatient	5.7	6.6	8.0	10.1	10.9	10.2	1.78
Private hospital inpatient	1.4	1.5	1.9	2.4	2.6	2.4	1.80
Non inpatient	1.5	1.7	2.2	2.6	2.6	2.4	1.64
<i>Total Hospital</i>	<i>8.6</i>	<i>9.8</i>	<i>12.1</i>	<i>15.2</i>	<i>16.1</i>	<i>15.1</i>	<i>1.76</i>
Nursing homes	2.5	2.8	3.5	4.4	4.8	4.5	1.82
GP	0.5	0.6	0.8	1.0	1.0	0.9	1.68
Specialist	0.4	0.5	0.6	0.7	0.7	0.7	1.58
<i>Total Medical</i>	<i>1.0</i>	<i>1.1</i>	<i>1.4</i>	<i>1.7</i>	<i>1.7</i>	<i>1.6</i>	<i>1.63</i>
Prescription	0.2	0.2	0.3	0.4	0.4	0.3	1.58
Over the counter	0.1	0.1	0.1	0.1	0.1	0.1	1.57
<i>Total pharmaceutical</i>	<i>0.3</i>	<i>0.3</i>	<i>0.4</i>	<i>0.5</i>	<i>0.5</i>	<i>0.4</i>	<i>1.58</i>
Allied health	0.5	0.6	0.8	0.9	0.9	0.8	1.65
Other	0.6	0.7	0.9	1.1	1.2	1.1	1.75
<i>Total Costs</i>	<i>13.4</i>	<i>15.4</i>	<i>19.0</i>	<i>23.7</i>	<i>25.2</i>	<i>23.5</i>	<i>1.75</i>
<b>Utilisation 000s</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	
Public hospital separations	0.9	1.0	1.2	1.5	1.6	1.5	1.73
Private hospital separations	0.2	0.2	0.3	0.3	0.4	0.3	1.74
<i>Total hospital separations</i>	<i>1.1</i>	<i>1.2</i>	<i>1.5</i>	<i>1.9</i>	<i>2.0</i>	<i>1.9</i>	<i>1.73</i>
Public hospital bed days	10.4	11.8	14.3	18.2	19.6	18.4	1.76
Private hospital bed days	3.5	4.0	4.8	6.1	6.7	6.3	1.80
<i>Total hospital bed days</i>	<i>13.9</i>	<i>15.8</i>	<i>19.1</i>	<i>24.3</i>	<i>26.4</i>	<i>24.7</i>	<i>1.77</i>
Non inpatient Occasions of service	14.6	16.9	21.3	24.9	25.1	22.9	1.57
GP	15.8	18.1	22.4	27.0	28.0	25.8	1.64
Specialist	6.5	7.4	9.3	10.9	11.0	10.1	1.56
<i>Total medical</i>	<i>22.2</i>	<i>25.5</i>	<i>31.8</i>	<i>38.0</i>	<i>39.0</i>	<i>35.9</i>	<i>1.61</i>
No of prescriptions	10.5	12.0	15.1	17.8	18.1	16.6	1.59
Allied health consults	18.8	21.8	27.9	31.7	31.0	28.1	1.49
Nursing home residents	0.05	0.06	0.07	0.09	0.10	0.09	1.84



Summary indicators of falls injury costs Tasmania



## Australian Capital Territory

### ACT

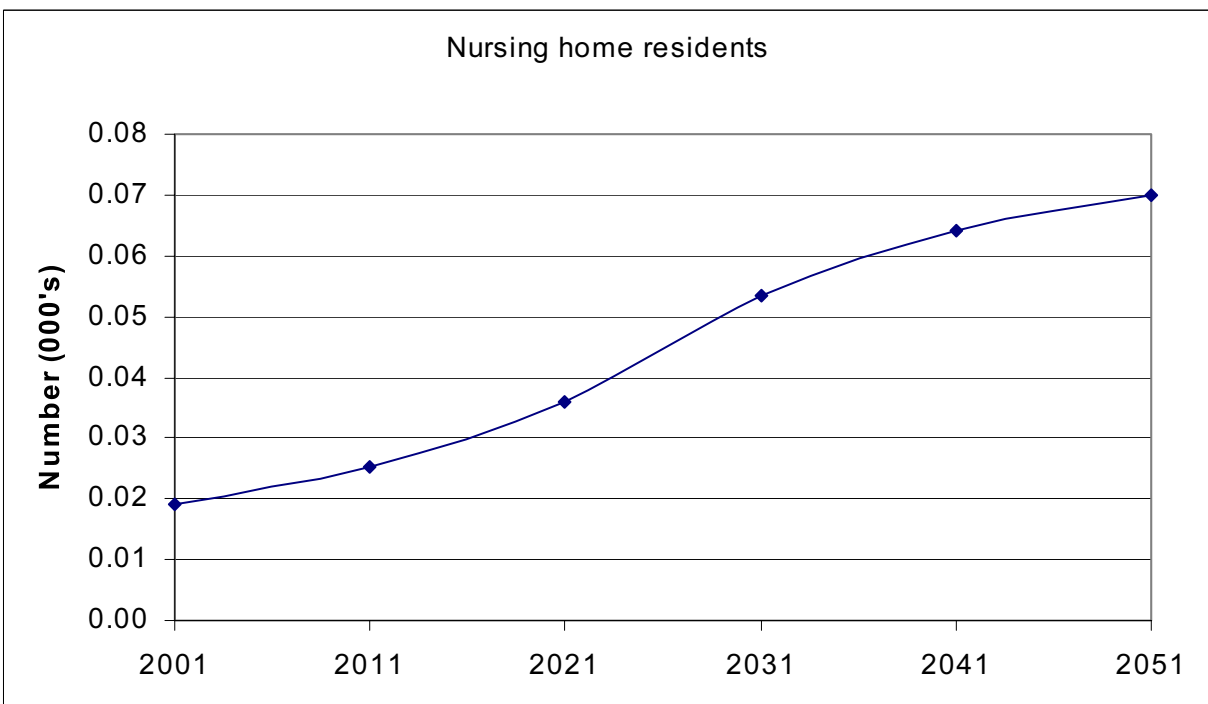
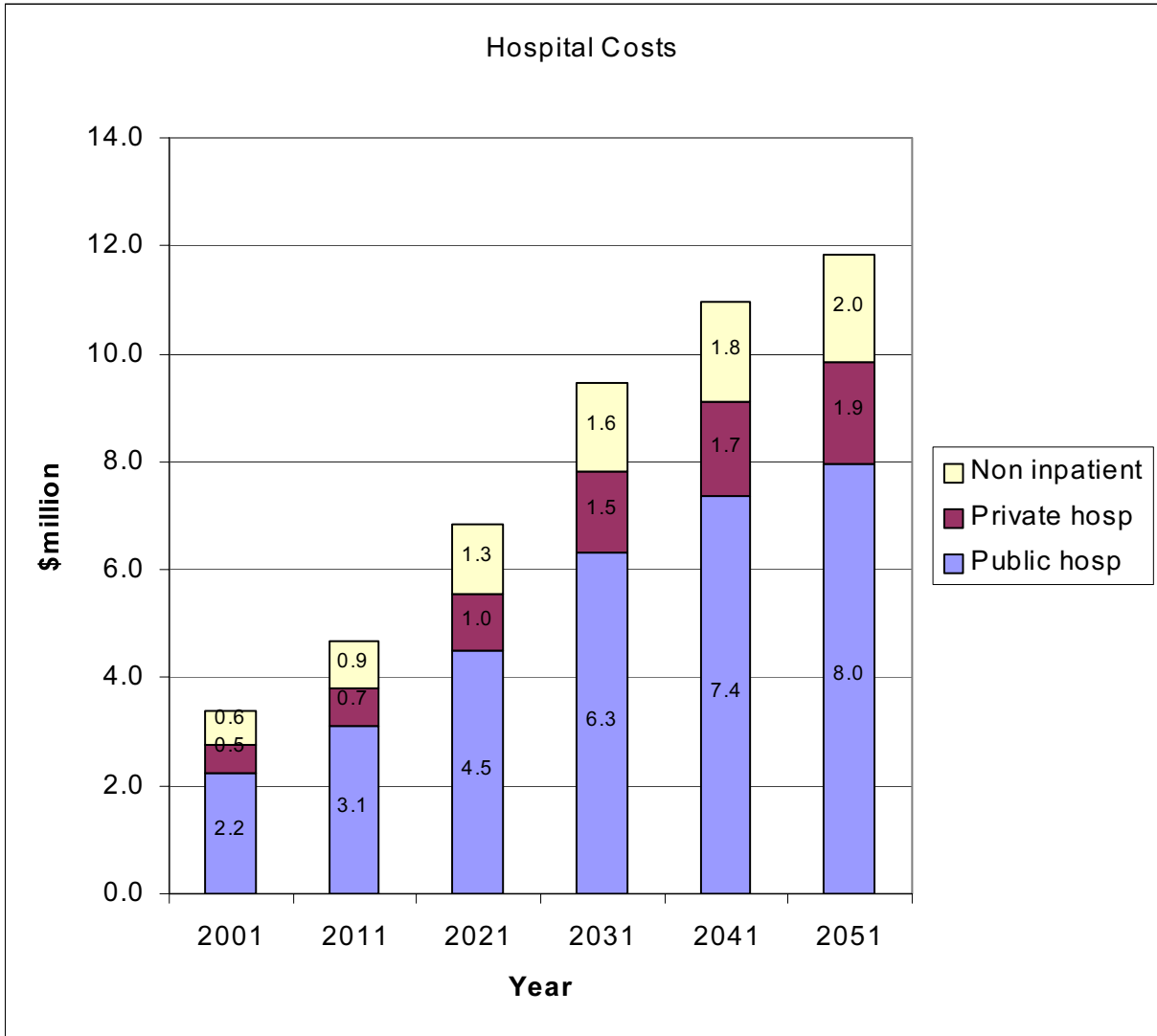
Projected costs related to falls injury

Based on ABS population projections Cat3222.0 Series 2

AIHW National average Unit cost and utilisation 1993-4

<b>Costs (\$millions)</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	<b>Ratio 2051:2001</b>
Public hospital inpatient	2.2	3.1	4.5	6.3	7.4	8.0	3.55
Private hospital inpatient	0.5	0.7	1.0	1.5	1.7	1.9	3.59
Non inpatient	0.6	0.9	1.3	1.6	1.8	2.0	3.25
<i>Total Hospital</i>	<i>3.4</i>	<i>4.7</i>	<i>6.8</i>	<i>9.4</i>	<i>11.0</i>	<i>11.8</i>	<i>3.50</i>
Nursing homes	1.0	1.3	1.9	2.7	3.2	3.5	3.64
GP	0.2	0.3	0.5	0.6	0.7	0.7	3.34
Specialist	0.2	0.2	0.4	0.5	0.5	0.5	3.13
<i>Total Medical</i>	<i>0.4</i>	<i>0.6</i>	<i>0.8</i>	<i>1.1</i>	<i>1.2</i>	<i>1.3</i>	<i>3.25</i>
Prescription	0.1	0.1	0.2	0.2	0.3	0.3	3.14
Over the counter	0.0	0.0	0.0	0.1	0.1	0.1	3.12
<i>Total pharmaceutical</i>	<i>0.1</i>	<i>0.2</i>	<i>0.2</i>	<i>0.3</i>	<i>0.3</i>	<i>0.3</i>	<i>3.13</i>
Allied health	0.2	0.3	0.4	0.6	0.6	0.7	3.30
Other	0.3	0.4	0.5	0.7	0.8	0.9	3.49
<i>Total Costs</i>	<i>5.3</i>	<i>7.4</i>	<i>10.8</i>	<i>14.8</i>	<i>17.2</i>	<i>18.5</i>	<i>3.49</i>
<b>Utilisation 000s</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	
Public hospital separations	0.3	0.5	0.7	0.9	1.1	1.2	3.44
Private hospital separations	0.1	0.1	0.2	0.2	0.2	0.3	3.47
<i>Total hospital separations</i>	<i>0.4</i>	<i>0.6</i>	<i>0.8</i>	<i>1.2</i>	<i>1.3</i>	<i>1.4</i>	<i>3.45</i>
Public hospital bed days	4.1	5.5	7.9	11.2	13.2	14.3	3.52
Private hospital bed days	1.4	1.8	2.6	3.8	4.5	4.9	3.60
<i>Total hospital bed days</i>	<i>5.4</i>	<i>7.3</i>	<i>10.5</i>	<i>15.0</i>	<i>17.7</i>	<i>19.1</i>	<i>3.54</i>
Non inpatient Occasions of service	6.0	8.4	12.4	15.7	17.6	18.6	3.12
GP	6.3	8.7	12.9	16.9	19.3	20.5	3.26
Specialist	2.6	3.7	5.5	6.9	7.8	8.2	3.11
<i>Total medical</i>	<i>8.9</i>	<i>12.4</i>	<i>18.3</i>	<i>23.8</i>	<i>27.1</i>	<i>28.7</i>	<i>3.21</i>
No of prescriptions	4.2	5.9	8.7	11.2	12.6	13.4	3.16
Allied health consults	7.8	11.1	16.6	20.2	22.3	23.2	2.99
Nursing home residents	0.02	0.03	0.04	0.05	0.06	0.07	3.68

Summary indicators of falls injury costs New South Wales



## Northern Territory

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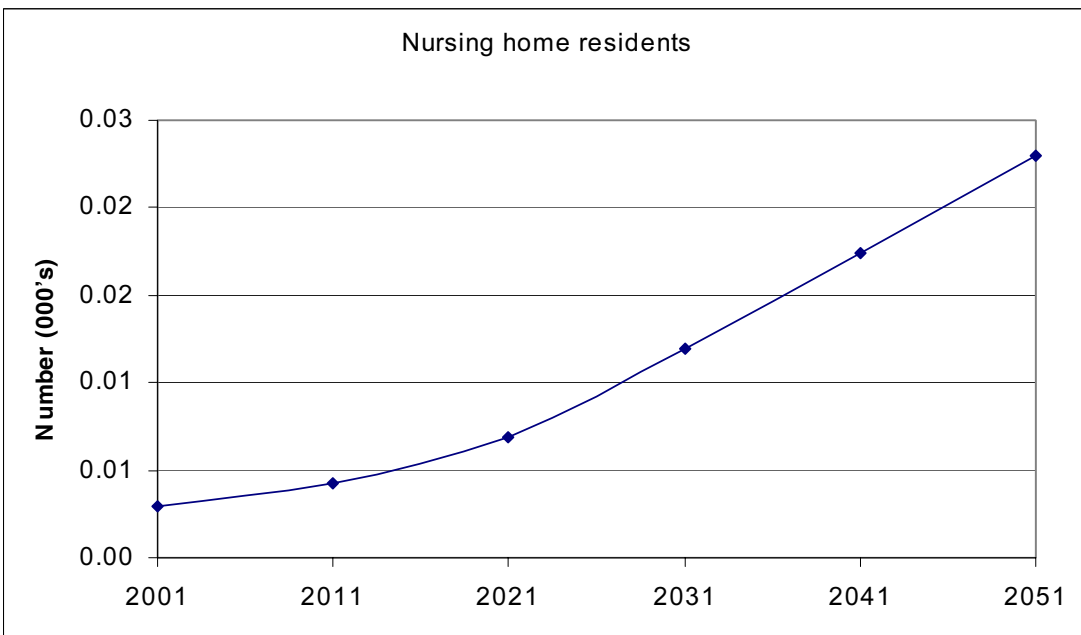
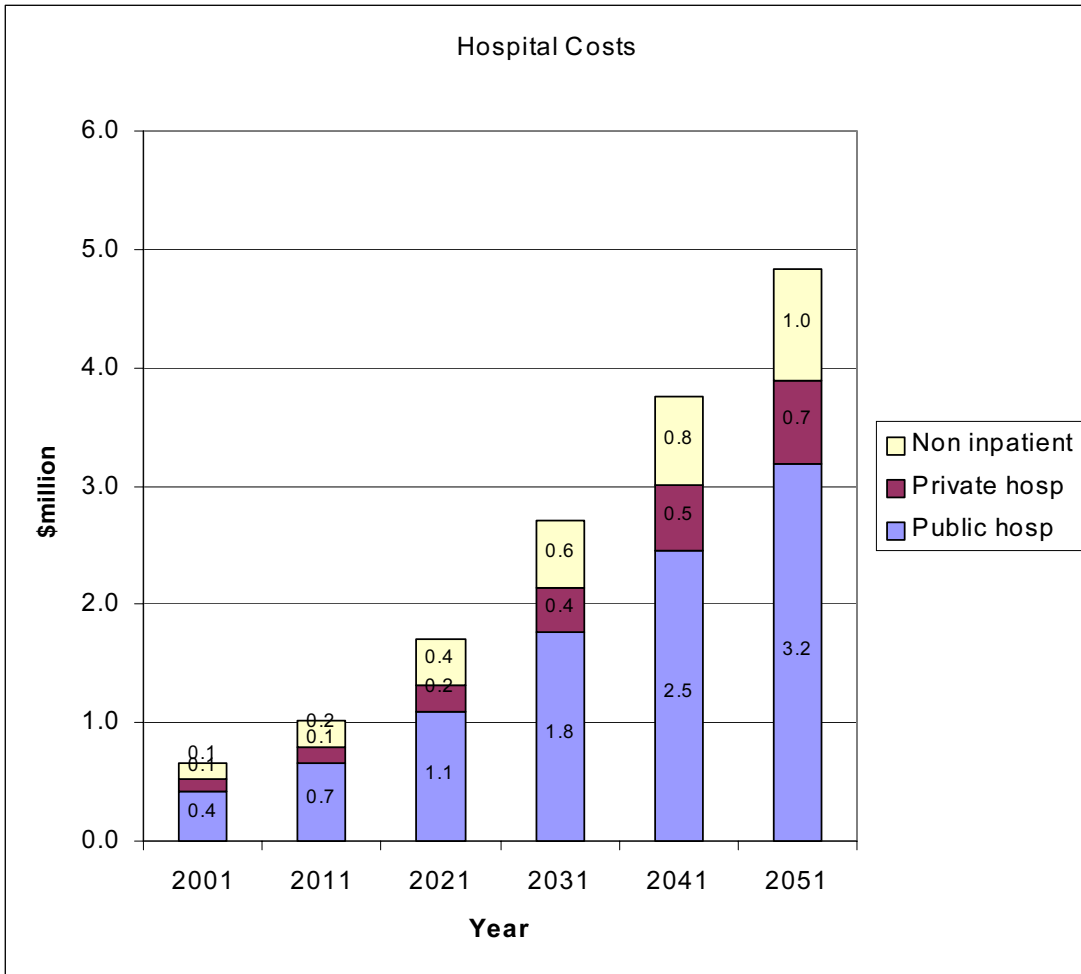
Projected costs related to falls injury

Based on ABS population projections Cat3222.0 Series 2

AIHW National average Unit cost and utilisation 1993-4

Costs (\$millions)	2001	2011	2021	2031	2041	2051	Ratio 2051:2001
Public hospital inpatient	0.4	0.7	1.1	1.8	2.5	3.2	7.47
Private hospital inpatient	0.1	0.1	0.2	0.4	0.5	0.7	7.58
Non inpatient	0.1	0.2	0.4	0.6	0.8	1.0	6.95
<i>Total Hospital</i>	<i>0.7</i>	<i>1.0</i>	<i>1.7</i>	<i>2.7</i>	<i>3.8</i>	<i>4.8</i>	<i>7.38</i>
Nursing homes	0.2	0.3	0.4	0.7	1.0	1.4	7.56
GP	0.0	0.1	0.1	0.2	0.3	0.3	7.08
Specialist	0.0	0.1	0.1	0.2	0.2	0.3	6.74
<i>Total Medical</i>	<i>0.1</i>	<i>0.1</i>	<i>0.2</i>	<i>0.3</i>	<i>0.5</i>	<i>0.6</i>	<i>6.92</i>
Prescription	0.0	0.0	0.1	0.1	0.1	0.1	6.70
Over the counter	0.0	0.0	0.0	0.0	0.0	0.0	6.70
<i>Total pharmaceutical</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.2</i>	<i>6.70</i>
Allied health	0.0	0.1	0.1	0.2	0.3	0.3	7.17
Other	0.1	0.1	0.1	0.2	0.3	0.4	7.34
<i>Total Costs</i>	<i>1.0</i>	<i>1.6</i>	<i>2.7</i>	<i>4.3</i>	<i>5.9</i>	<i>7.6</i>	<i>7.35</i>
<b>Utilisation 000s</b>	<b>2001</b>	<b>2011</b>	<b>2021</b>	<b>2031</b>	<b>2041</b>	<b>2051</b>	
Public hospital separations	0.1	0.1	0.2	0.3	0.4	0.4	7.26
Private hospital separations	0.0	0.0	0.0	0.1	0.1	0.1	7.32
<i>Total hospital separations</i>	<i>0.1</i>	<i>0.1</i>	<i>0.2</i>	<i>0.3</i>	<i>0.4</i>	<i>0.5</i>	<i>7.28</i>
Public hospital bed days	0.7	1.0	1.7	2.8	4.0	5.2	7.40
Private hospital bed days	0.2	0.3	0.5	0.9	1.3	1.7	7.59
<i>Total hospital bed days</i>	<i>0.9</i>	<i>1.4</i>	<i>2.2</i>	<i>3.7</i>	<i>5.3</i>	<i>6.8</i>	<i>7.44</i>
Non inpatient Occasions of service	1.2	2.0	3.4	5.1	6.8	8.4	6.74
GP	1.2	1.9	3.2	5.0	6.8	8.5	6.95
Specialist	0.5	0.8	1.5	2.2	2.9	3.6	6.75
<i>Total medical</i>	<i>1.8</i>	<i>2.7</i>	<i>4.7</i>	<i>7.2</i>	<i>9.7</i>	<i>12.1</i>	<i>6.89</i>
No of prescriptions	0.9	1.3	2.3	3.5	4.7	5.8	6.79
Allied health consults	1.7	2.7	4.8	7.0	9.1	11.2	6.64
Nursing home residents	0.00	0.00	0.01	0.01	0.02	0.02	7.75

**Summary indicators of falls injury costs Northern Territory**



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