



Health Needs Assessment

for the Central Region's District Health Boards

Injuries and Accidents

October 2008



Central Region's Technical Advisory Services Limited (TAS)

Health Needs Assessment - Injuries and Accidents

for the Central Region's District Health Boards

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This chapter is one of several contributing to the Central Region's Health Needs Assessment (HNA). The chapters included in this HNA are:

- Introduction
- Key Findings for Regional Action
- Demographic Profile of the Central Region
- Health Status of the Central Region
- Access to Services and the Utilisation of Services
- Risk and Protective Factors
- Chronic Conditions including Circulatory System Diseases, Diabetes, Renal Failure and Kidney Disease, and Respiratory Conditions
- Cancer
- Mental Health
- Child, Youth and Maternal Health
- Health of Older People
- Disability
- **Injuries and Accidents**
- Violence
- Data Quality

This chapter may be read in isolation but in order to gain a context of the Central Region, readers should in particular refer to the chapters 'Demographic Profile of the Central Region' and 'Health Status of the Central Region'.

For a summary of the findings for the region, their implications and some key areas for strategies readers should refer to the 'Key Findings for Regional Action' chapter.

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Injuries and accidents

Injury is a leading cause of both morbidity and mortality in New Zealand, with the Accident Compensation Corporation (ACC) recording that over 1,400 New Zealanders died as the result of injury in the 2007/08 financial year. In that period, ACC received 1.8 million claims and paid over \$2.3 billion in total claims costs.

Within the Central Region, injuries accounted for more than 11,000 hospital admissions in 2006. Injury is the leading cause of death from 1 to 34 years in New Zealand (analysis period 1998 to 2002). It is also a significant cause of morbidity, being one of the two main causes of inpatient treatment in public hospitals for those aged 5 to 44 (analysis period 1999 to 2003)¹.

In particular in the Central Region, injuries resulting from falls, self-harm, transport accidents, mechanical force and assault are leading causes of admission to hospital. Similarly, ACC has identified six national injury prevention focus areas: motor vehicle crashes, suicide and deliberate self-harm, falls, workplace injuries, assault and drowning.

New Zealand is in the unique position of having an organisation like ACC working in the area of accident and injury, in both administration and injury

prevention capacities. Their national injury prevention strategy aims to work closely with other agencies, including the Ministry of Health and local public health agencies, to deliver programmes designed to lower the rates of injury.

Within the Central Region, ACC have implemented programmes designed to work with Pacific People to promote health and wellbeing, and have programmes running across the region aimed at trying to reduce falls amongst various age groups, in particular in older adults and infants.

¹ Gulliver, P.J., Simpson, J.C. (2007) Injury as a leading cause of death and hospitalisation. Fact sheet 38. Dunedin: Injury Prevention Research Unit, University of Otago.

Key themes

Overall mortality related to injury in the Central Region decreased by 5% (2000 to 2004) and increased in the other regions. Central Region rates for intentional self-harm, transport accident, and assault related mortality were all higher than the national average, whilst the rate of falls-related mortality was lower. The Central Region has the highest rate of mortality (using age standardised rates) amongst the regions for assault, though this is subject to relatively small numbers.

Wairarapa has significantly higher rates of self-harm mortality than the rest of the region and the rates are increasing. Whanganui DHB shows a significantly higher rate of transport accident mortality than other Central Region DHBs (this is due to high rates for the 15-24 age group).

Māori have consistently higher rates of mortality in all categories, with the exception of falls, than both Other and Pacific ethnicities (60% higher than for Other ethnicities). Rates for self-harm and assault are significantly higher for Māori than for Other ethnicities (mortality numbers are small for Māori which make interpretation difficult). Māori in Hawke's Bay DHB show significantly higher rates of mortality for all injury than in other DHBs. Injury-related mortality rates have fallen for Pacific People in the Central Region in all categories except assault.

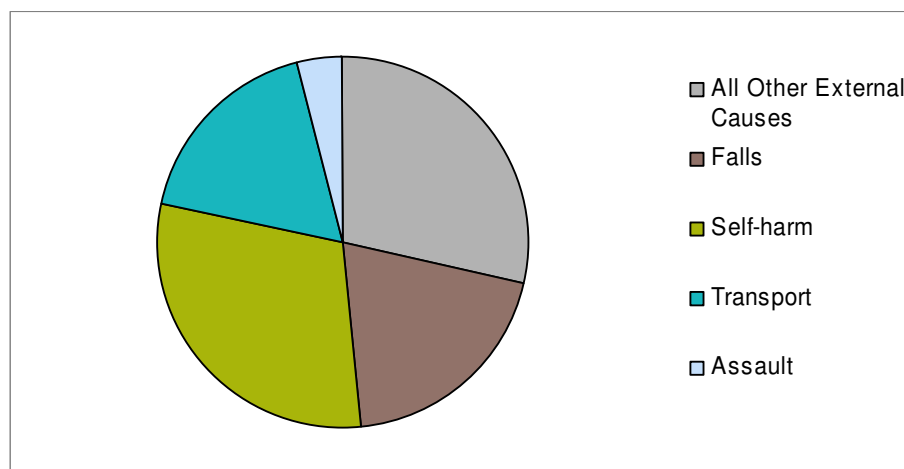
Hospital admissions for injuries reduced from 2002-2004 and then increased in 2005 and 2006 in the Central Region and nationally. In the Central Region rates of injury related hospitalisation are noticeably higher for Wairarapa and are generally increasing for all DHBs except Hawke's Bay. The greatest increase in rates is at MidCentral DHB (from 2004 to 2006), due to increases in falls, self-harm and transport-related hospital admissions.

Māori have the highest rate of hospital admissions for all injury, followed by Pacific People and then Other ethnicities.

Mortality

Mortality statistics for a particular cause of mortality are determined for this section using all deaths coded with an external cause ICD10 code in the range V01-Y36. Particular focus is given here to various key groups within the injury categories, in particular falls (ICD10 codes W00-W19), intentional self-harm (X60-X84), transport accidents (V40-49), and assault (X85-Y09). Figure 1 shows the respective proportions of all injury-related deaths for these groups.

Figure 1: Average Proportion of All Injury Related Deaths for Major Injury Categories, 2002-2004, Central Region



Source: Mortality Collection (TAS HNA cubes, CUBE_MORT).

From 2000 to 2004 overall mortality related to injury in the Central Region decreased by 5% to 333 deaths in 2004, having varied throughout this period.

All other regions, and New Zealand, had increased their mortality numbers in this period. The Midland Region experienced a 9% increase in numbers, the Northern Region 8%, and the Southern Region 14%. Numbers by Central Region DHBs and the regions are given below in Table 1.

Table 1: Number of Injury-Related Mortality, 2000-2004, by DHB and Region

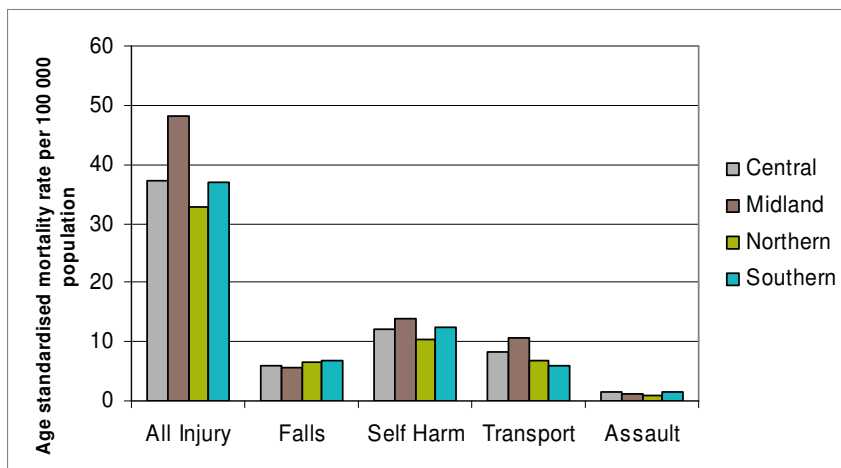
Region	DHB	2000	2001	2002	2003	2004
Central	Capital & Coast	95	92	96	99	92
	Hawke's Bay	84	94	70	74	74
	Hutt Valley	53	40	40	66	42
	MidCentral	75	95	70	65	68
	Wairarapa	21	30	14	32	25
	Whanganui	36	41	39	40	28
Central	Total	364	392	329	376	329
Midland	Total	377	354	362	418	385
Northern	Total	481	461	522	538	500
Southern	Total	355	423	432	431	392

Source: Mortality Collection (TAS HNA cubes, CUBE_MORT).

The Central Region has the highest rate of mortality (using age standardised rates) amongst the regions for assault, though this is subject to relatively small numbers (the rate is 1.41 per 100,000 of population). In other categories, the Midland Region has consistently higher rates of mortality than other regions, with the exception of falls, and has a much higher overall rate of injury-related mortality, at 48.31. Central Region rates for intentional self-harm, transport

accident, and assault related mortality were all higher than the national average, whilst the rate of falls-related mortality was lower, as shown in Figure 2.

Figure 2: Age Standardised Rate of Injury Related Death by Injury Category and Region, 2000-2004



Source: Mortality Collection (TAS HNA cubes, CUBE_AGE_MORT).

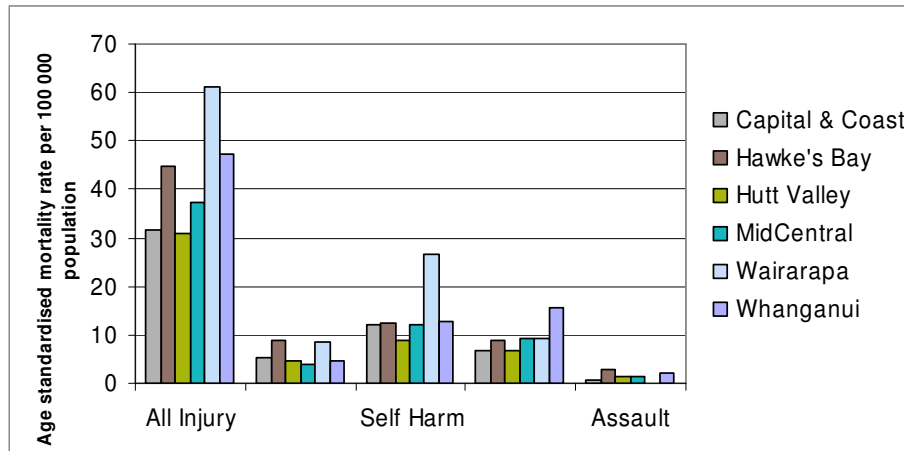
Amongst these categories, the Central Region saw an overall decrease in their rates of assault and transport accident mortality (11% and 1% respectively), and a decrease in all injury-related mortality (by 8%) in the 2000 to 2004 period. Increases to the rates of falls and self-harm mortality, by 10% and 9% respectively, were less than that of other regions. The Southern Region shows an increase in rates of mortality for all categories except self-harm, most of these significant (47% for falls, 25% for transport accidents, and 47% for assault).

Within the Central Region, the ASR data gives a clearer picture of injury-related mortality. Wairarapa DHB shows higher rates of injury-related mortality overall (61.4 per 100,000), as well as high rates of self-harm related mortality (26.63 per 100,000)². The high rate of injury-related mortality seems to be driven by the high rates in the self-harm category, where the 15-24 (10.75 per 100,000) and 25-44 (9.06 per 100,000) age groups both showed higher rates of self-harm mortality than that of the rest of the region. Whanganui DHB shows a significantly higher rate of transport accident mortality than the other DHBs, 15.63 per 100,000, where the next highest rate is 9.27 per 100,000 for Wairarapa DHB. This appears to be a result of rates of 13.32 per 100,000 for 15-24 year olds in Whanganui DHB.

Figure 3 shows the rates of mortality in all categories by DHB.

² Refer to Chapter 8 on mental health for further information.

Figure 3: Age Standardised Rate of Injury Related Death by Injury Category and Central Region DHB, 2000-2004



Source: Mortality Collection (TAS HNA cubes, CUBE_AGE_MORT).

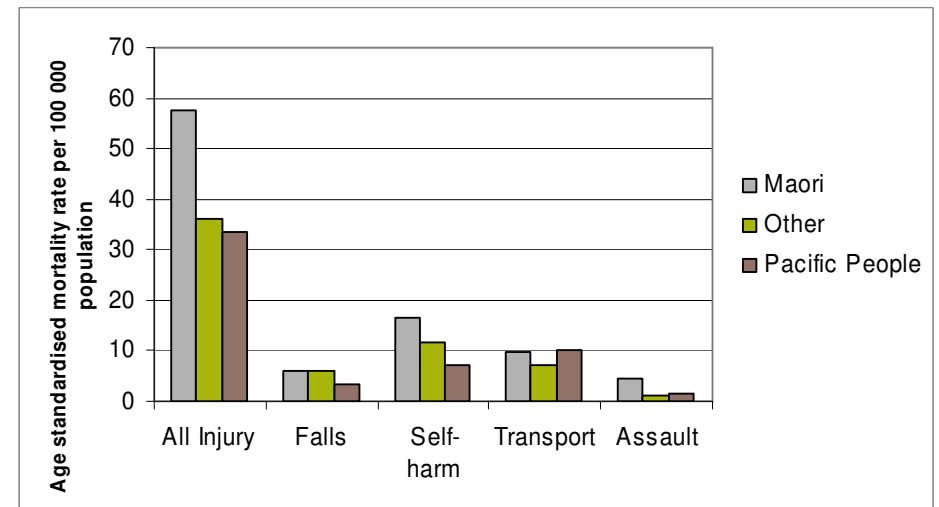
Mortality by ethnicity

Average age standardised rates for mortality in the 2000 to 2004 period give a clear picture of ethnic inequalities in injury-related death.

Figure 4 shows that Māori have consistently higher rates of mortality in all categories, with the exception of falls, than both the Other and Pacific ethnicities. The overall injury-related mortality rate for Māori in this period was on average nearly 60% higher than that for people of Other ethnicities. The self-harm category shows a significantly higher mortality rate for Māori than for Other ethnicities (refer to Chapter 8 on mental health), with an overall rate of 19.94 per 100,000, and the 15-24 year age group for Māori having an average

rate of 38.68 per 100,000 in the five year period to 2004. In categories such as self-harm and assault, where Māori also have a significantly higher rate, small numbers make analysis difficult. Within the Central Region, Māori in Hawke’s Bay show significantly higher rates of mortality for all injury than other DHBs, as do Pacific People in MidCentral (note small numbers for Pacific).

Figure 4: Age Standardised Rate of Injury Related Death by Injury Category and Ethnicity, 2000-2004, Central Region



Source: Mortality Collection (TAS HNA cubes, CUBE_AGE_MORT).

Injury-related mortality rates have fallen for Pacific People in the Central Region in all categories except assault, with 37% decrease in mortality rates for all injury, and self-harm mortality having decreased by 51% (subject to small numbers) in the period 2000 to 2004. Māori rates for self-harm mortality have increased by 38% in this period.

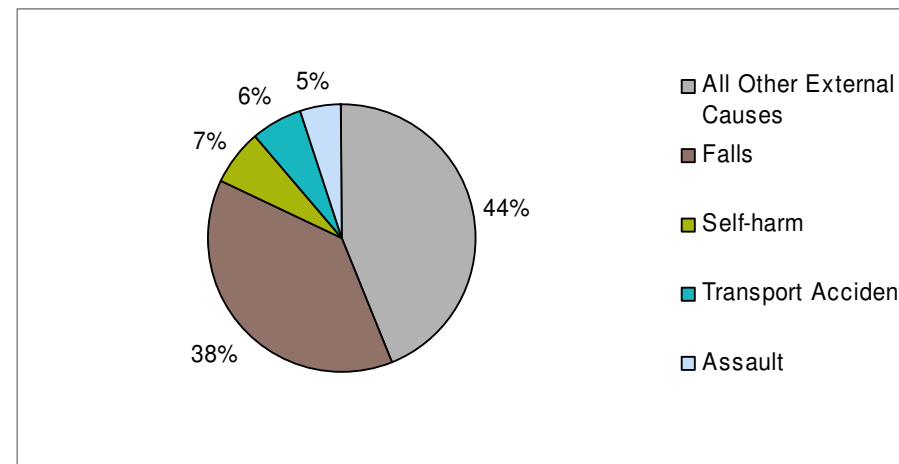
Hospital admissions

Hospital admission data is given based on external cause ICD10 codes in the range V01-Y36. Particular focus is given here to various key groups within the injury categories, in particular falls (ICD10 codes W00-W19), intentional self-harm (X60-X84), transport accidents (V40-49), and assault (X85-Y09).

There appears to be an abnormality with the morbidity data in more recent years for Whanganui DHB, causing numbers to decrease significantly. In some places data for Whanganui DHB has not been included. As such some analysis presented may differ from actual admission numbers. Readers should bear in mind that this may have a small effect on the Central Region average but a negligible effect on the national average.

Figure 5 shows the respective proportions of all injury-related hospital admissions for the injury categories above. This illustrates the predominance of falls in particular within hospital admissions for injury.

Figure 5: Proportion of All Injury Related Admissions for Major Injury Categories, Central Region, 2006



Source: NMDS (TAS HNA cubes, CUBE_MORB).

From 2002 to 2004 in the Central Region, overall hospital admissions for injuries reduced, but the admission numbers increased again in 2005 and 2006 to reach 12,855 admissions by 2006, 11% more than the 2002 number. The dip in volumes from 2002-2004 and subsequent increase is consistent with the New Zealand pattern, and other regions.

Actual numbers of admissions for the four regions are shown in Table 2.

Table 2: Number of Hospital Admissions by Region for All Injury, 2002-2006

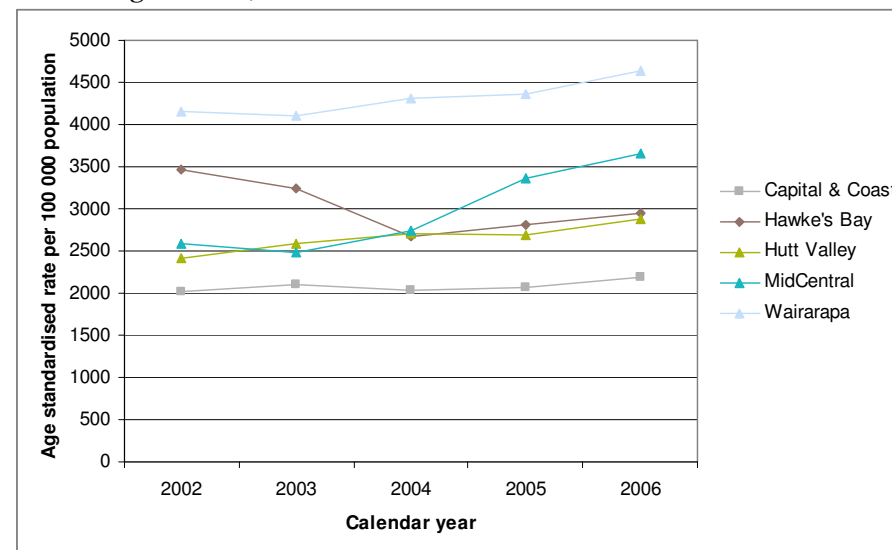
Region Name	2002	2003	2004	2005	2006
Central	11,564	11,212	10,734	11,698	12,855
Midland	13,356	13,689	13,666	13,926	13,798
Northern	30,542	28,956	29,868	31,988	34,184
Southern	13,836	14,688	14,845	15,171	15,934

Source: NMDS (TAS HNA cubes, CUBE_MORB).

Age standardised rates for hospitalisation related to all injury, falls, self-harm and transport for Central Region DHBs are given in Figures 397-400. Most DHBs show a pattern of an increasing rate of hospitalisation, although Hawke’s Bay rates have decreased from 3467 per 100,000 population in 2002 to 2955 per 100,000 population in 2006. MidCentral DHB shows an increase in the rates of falls, self-harm, and transport-related hospital admissions in 2005 and 2006.

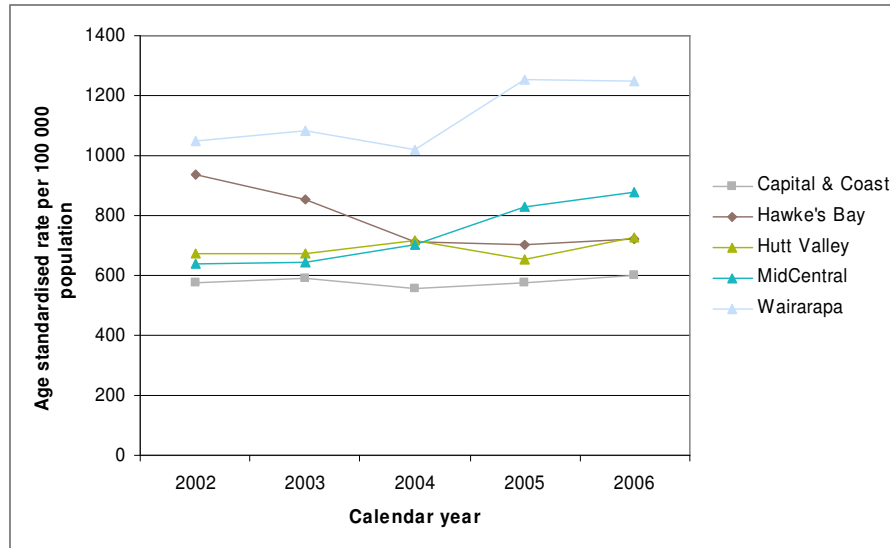
It is important to note that hospitalisations for intentional self-harm represent unique ‘events’ of self-harm, rather than the number of ‘people’ being hospitalised following a self-harm event. Subsequently, a single person can contribute several unique self-harm events and the severity of the injury is not represented in these figures. Refer to Chapter 8 on mental health for further information on intentional self-harm, age standardised rates in the Central Region and comparisons by gender and ethnicity.

Figure 6: Age Standardised Rate of All Injury Related Hospital Admissions, by Central Region DHB, 2002-2006



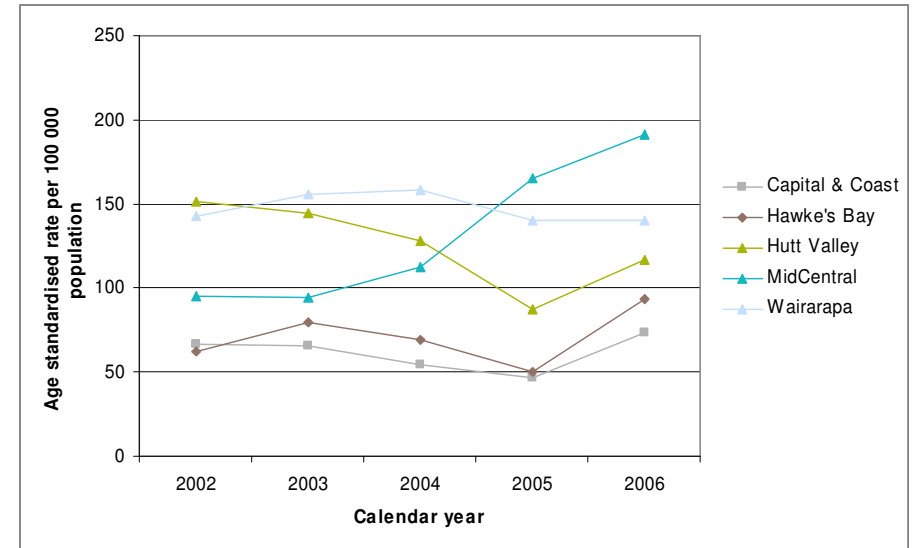
Source: NMDS (TAS HNA cubes, CUBE_AGE_MORB).

Figure 7: Age Standardised Rate of Fall Related Hospital Admissions, by Central Region DHB, 2002-2006



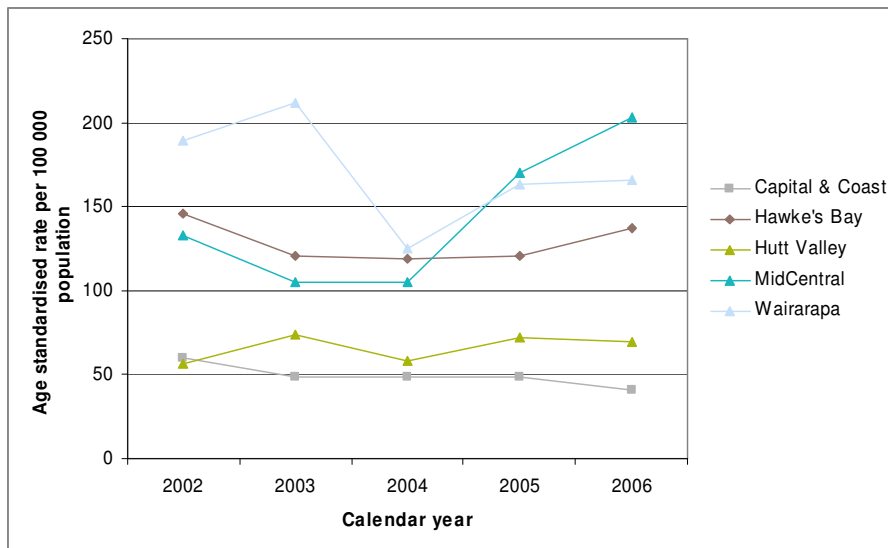
Source: NMDS (TAS HNA cubes, CUBE_AGE_MORB).

Figure 8: Age Standardised Rate of Self-harm Related Hospital Admissions, by Central Region DHB, 2002-2006



Source: NMDS (TAS HNA cubes, CUBE_AGE_MORB).

Figure 9: Age Standardised Rate of Transport Related Hospital Admissions, by Central Region DHB, 2002-2006

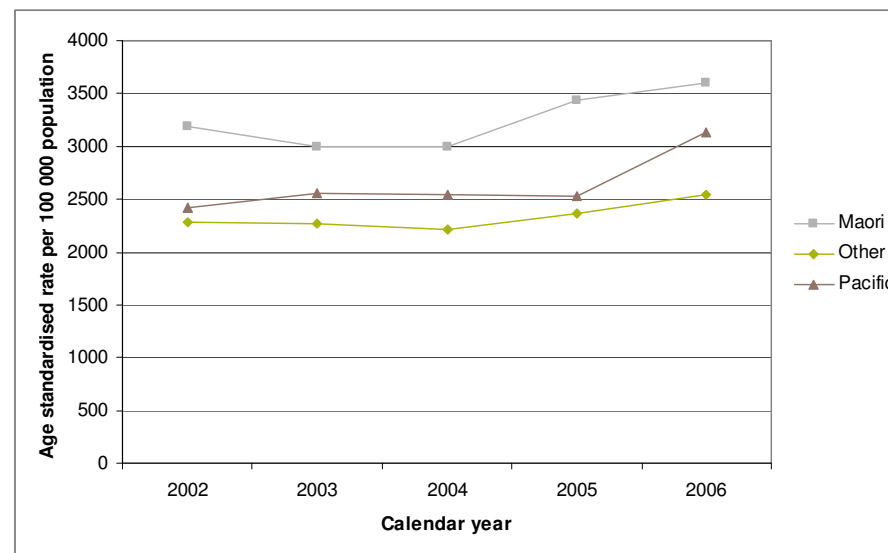


Source: NMDS (TAS HNA cubes, CUBE_AGE_MORB).

Hospital admissions by ethnicity

Māori have the highest rate of hospital admissions for all injury, followed by Pacific People and then Other ethnicities. All three categories of ethnicity show an upward trend in injury-related hospital admissions in the 2002-2006 period. Age standardised rates of injury-related hospital admissions in the Central Region are given in Figure 10.

Figure 10: Age Standardised Rate of Injury Related Hospital Admissions, by Ethnicity, Central Region, 2002-2006



Source: NMDS (TAS HNA cubes, CUBE_AGE_MORB).

ACC claims

Table 3 illustrates the number of ACC claims for each DHB in the 2005-2007 period, and the cost of the total claims.

Table 3: Number of ACC Claims and Cost of Claims for Central Region DHBs, 2005-2007

DHB	2005 Claims	2005 Cost of Claims	2006 Claims	2006 Cost of Claims	2007 Claims	2007 Cost of Claims
Capital & Coast	5,153	\$41,584,223	5,407	\$41,982,196	5,088	\$26,074,449
Hawke's Bay	4,245	\$34,651,709	4,611	\$38,507,945	4,181	\$24,019,366
Hutt Valley	2,434	\$18,512,991	2,524	\$18,648,165	2,185	\$12,565,451
MidCentral	3,703	\$27,447,230	3,837	\$29,505,893	3,795	\$19,611,322
Wairarapa	1,174	\$8,319,639	1,278	\$9,370,721	1,064	\$5,577,216
Whanganui	2,257	\$15,663,668	2,432	\$16,052,733	2,119	\$11,987,980

Source: ACC.

The most common reasons for claims were soft tissue injuries and fractures/dislocations, whilst the most common cause of injury was loss of balance. High cost claims included those for amputation and deafness.