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Invercargill Injury Data
ACC ThinkSafe Report

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Acknowledgements

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1.0 Introduction

1.1 Overview

The prevention of injuries is a major public health priority area in New Zealand, as injury is the leading cause of death between 1-34 years (Coggan, Langley & Dawe, 2000). Injuries account for more potential years of life lost than heart disease and cancer combined. Following complications of childbirth and pregnancy, injuries are also responsible for more hospitalisations than any other cause.

Although injury prevention is a relatively new discipline, there is increasing recognition nationally and internationally that community-based injury prevention programmes are an effective and acceptable way to reduce the burden of injury experienced by individuals, whanau/families and communities. Based on the World Health Organisation (WHO) 'safe communities' model, the community-based programme has been adopted in New Zealand following successful Australian and Scandinavian initiatives (Coggan, Bennett, Patterson & Borne, 2003; Coggan, Patterson, Brewin, Hooper, & Robinson 2000; Svanstrom 1997; Day, Ozanne-Smith, Cassell, Li, 2001). The model is a community-based all age, all injury prevention model which recognises that those most able to solve community injury prevention programmes are those people living in that particular community (Brewin & Coggan, 2004).

Community-based injury prevention programmes were first established in Aotearoa/New Zealand in the early 1990s, and rigorous evaluation evidence indicates that the model is effective (Coggan, Patterson, Brewin et al, 2000; Brewin & Coggan, 2003). Currently in Aotearoa/New Zealand there are, in addition to Manukau City, more than twenty other communities at various stages of implementing community action in injury prevention, including Whangarei City, Auckland City, Waitakere City, Turanganui-a-kiwa, Ngati Porou, Waimakariri and 23 ACC ThinkSafe communities.

Evidence from the evaluations undertaken with three of these initiatives to date, strongly suggests that community-based injury prevention activities are able to have

an impact on the injury burden experienced by people of all ages. For example, evaluation findings from the Turanganui-a-kiwa CIPP indicate that injury death rates have steadily declined for the period 1996-1999 (Brewin & Coggan, 2002). Conversely, injury mortality rates for the comparison community, where there was no community-based injury prevention programme in place, increased during this period.

Similarly, following implementation of Safe Waitakere in 1996, injury death rates decreased considerably from 48 deaths per 100,000 population in 1997 to 34 deaths per 100,000 per population in 1999. Waitakere City also had a lower injury hospitalisation rate than the rest of Auckland in 1998, 2000 and 2001. This injury hospitalisation rate for Waitakere City was considerably lower than the comparison community (where there was no community-based injury prevention programme in place), from 1997-2001 (Coggan, Lee, Patterson & Fill, 2003). The provision of injury data is an essential tool for assessing the effects of community-based programmes. It is also vital for the identification of groups at high risk of injury within specific communities.

1.2 How to use this report

This report consists of three main sections: Section One provides a brief introduction and overview of the report objectives. Section Two describes the data sources used to support this report, and the methods of data analysis used.

Section Three describes Invercargill City injury statistics. Demographic data relating to Invercargill City is provided and injury mortality data is described, including leading causes of injury deaths, overall rates of injury deaths by age group, and comparisons of rates of injury deaths and causes by ethnicity. Injury hospitalisations for Invercargill City are also outlined, including leading causes of injury hospitalisations; overall rates of injury hospitalisations by age group; rates of injury hospitalisations by gender; and injury hospitalisations by ethnicity. Other sources of injury data are also described, including Accident Compensation Corporation (ACC) injury statistics, and Land Transport Safety Authority (LTSA) road injury statistics.

1.3 Objectives

The objectives of this report are to present:

1. Routinely collected baseline data which can be used to identify injury prevention related needs and issues in Invercargill City;
2. Routinely collected data to enable comparisons over time; and
3. The data in a meaningful manner to assist in the development of a strategic plan for injury prevention for Invercargill City.

2.0 Methodology

2.1 Sources of information

The sources of information utilised to develop this community injury profile came from a wide variety of sources, including:

- Routinely collected injury statistics from the New Zealand Health Information Service (NZHIS) related to injury deaths (1993-1999) and hospitalisations (1993-2003) for Invercargill City;
- 1991, 1996 and 2001 New Zealand Census data from Statistics New Zealand;
- LTSA data for 1997-2002; and
- ACC data for 1994/5-2003/4.

2.2 Data analysis

Data was analysed using SAS Version 9.0 in Windows. Injury data were sourced from the NZHIS Minimum Dataset. Injury deaths and hospitalisations caused by medical misadventure, adverse effects, and late effects were excluded from the analysis. Injury hospitalisation records were selected for patients who were admitted overnight to hospital with a primary diagnosis of injury. Cases were only included if the patient survived the injury and if the admission was the first hospitalisation for this injury.

The category labelled *"Motor vehicle traffic crash on a public road"* includes crashes involving a pedestrian, but does not include cycle crashes, which are coded as a separate category. Note that this data is for people resident in Invercargill City, not for the location in which the injury event occurred.

As changes were made to the definition of ethnicity in 1995, 1996 is the beginning of a new time series for ethnicity data. Therefore all ethnicity statistics for injury death data in this document refer only to the period 1996-1999. Also, because of a change in the wording of the question in the 2001 Census of Population and Dwellings that asks about ethnicity, the 2001 Census data is not consistent with the 1996 Census data. Since age specific rates were calculated from population

estimates based on the Census data, ethnicity statistics for injury hospitalisation data refer only to the period from 2001 onwards (for years not in a Census year, population figures were estimated).

The ACC data is taken from a summary of entitlement claims data for Invercargill City (prepared by ACC Scheme Analysis). The data excludes claims lodged with Private Insurers. An entitlement claim is one where payment is made for an entitlement other than medical treatment, such as weekly compensation, independence allowance and social rehabilitation. In addition, claims requiring dental treatment are classed as entitlement claims.

The LTSA data are taken from Motor Accidents in New Zealand 2002 (LTSA, 2003), Road Safety Atlas (LTSA, 1996), and 1997/98 Travel Survey Report (LTSA, 2000). It should be noted that not all motor vehicle crashes are reported to the Police; therefore LTSA figures underestimate the burden of injury due to motor vehicle crashes in New Zealand.

3.0 Invercargill City Injury Statistics

3.1 Invercargill City Demographics

This section provides information relating to population, age, ethnicity and income for Invercargill City.

Table 1: Invercargill City- Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	6387	13	6615	12	6102	11
NZ European/Other	46632	94	50040	94	50670	91
Pacific	1089	2	1224	2	1419	3
Total Persons≈	49830	109	53211	108	55707	105

* In 1991 Maori ethnicity was determined by ancestry, whereas in 1996 and 2001 Maori ethnicity was by self-definition.

≈ Total percentage may not add up to 100% as people may belong to more than one ethnic group.

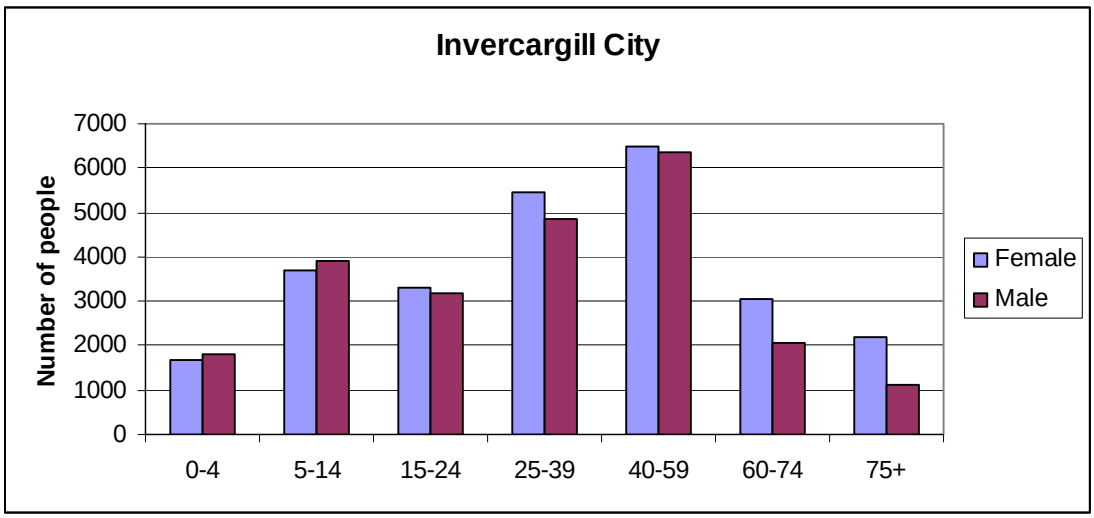
Table 2: Invercargill City - Age Composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	8	7	7
5-14	16	16	15
15-24	16	14	13
25-39	24	23	21
40-59	20	23	26
60-74	11	11	12
75+	5	6	6

Table 3: Invercargill City- Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning > $30,000	8580	51
Personal incomes > $30,000	9267	26
Average per capita personal income	$22,666	

Figure 1: Invercargill- Age distribution by gender in 2001 Census



3.2 Injury statistics

3.2.1 NZHIS injury mortality 1993-1999

Between 1993 and 1999, 179 residents of Invercargill City died as the result of receiving an injury. This is equivalent to a crude injury rate of 31 injury deaths per 100,000 person years. Males accounted for almost three-quarters of fatalities (72%).

Figure two shows that the leading cause of injury deaths among all age groups was suicide (44%). Almost 30% of the injury deaths were motor vehicle crashes on a public road and 12% were caused by falls.

Figure 2: Invercargill- leading causes of injury mortality 1993-1999

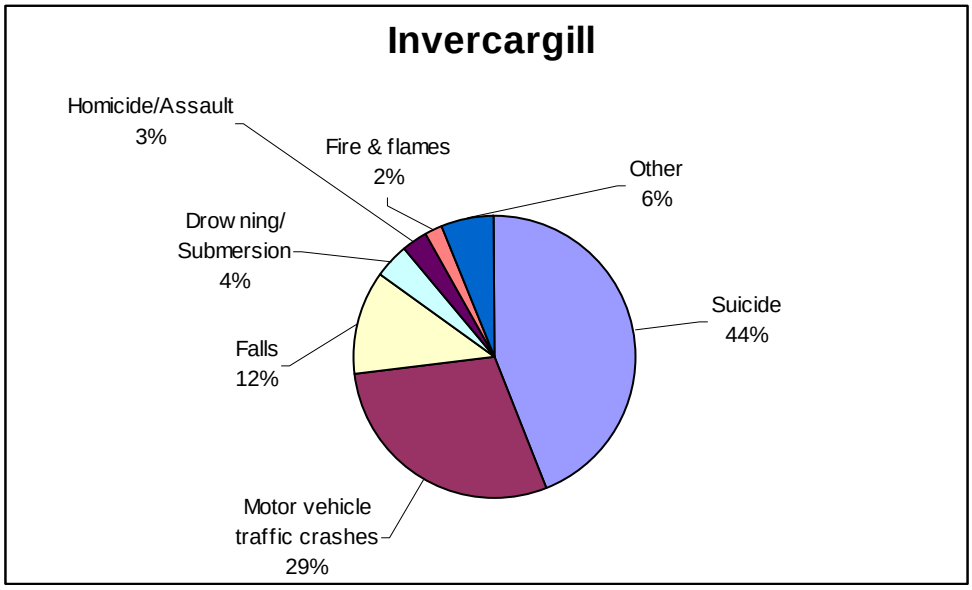
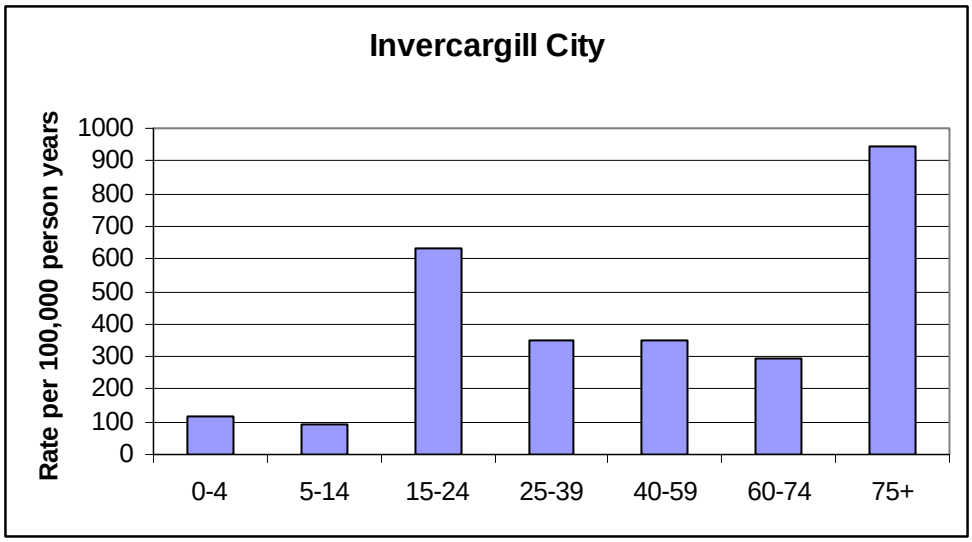


Figure three shows that those aged 75 years and had the highest rate of injury death, followed by young people aged 15-24 years.

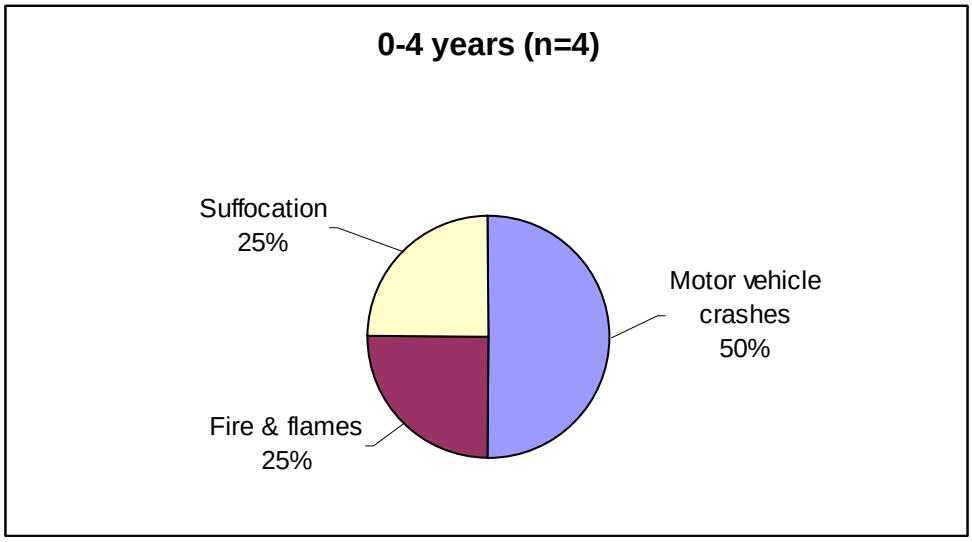
Figure 3: Rates of injury mortality by age group, 1993-1999



3.2.2 Leading causes of injury mortality by age group

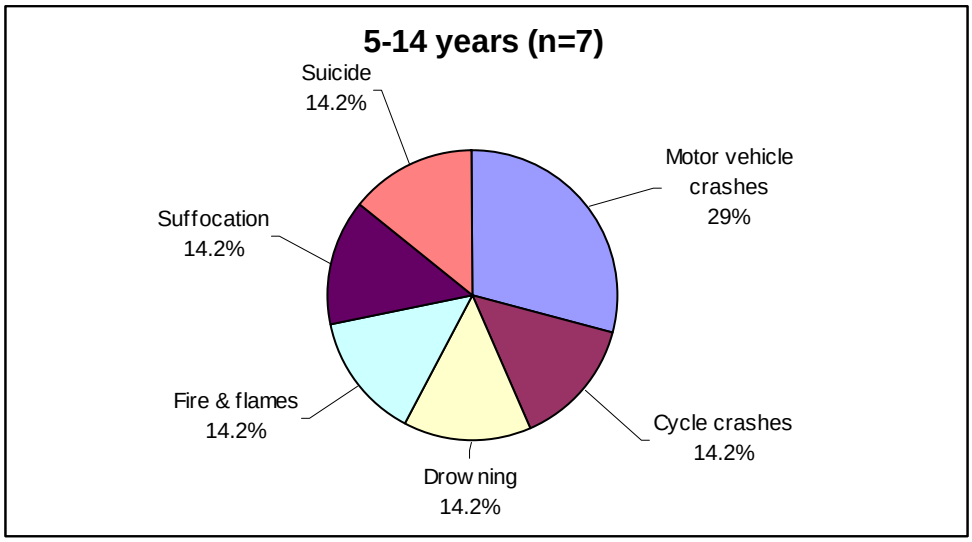
Figure four shows that motor vehicle traffic crashes on a public road were the leading cause of injury death for children aged 0-4 years (50%). Suffocation and fire and flames accounted for 25% of injury deaths, respectively, in this age group.

Figure 4: Leading causes of injury mortality for 0-4 year olds, 1993-1999



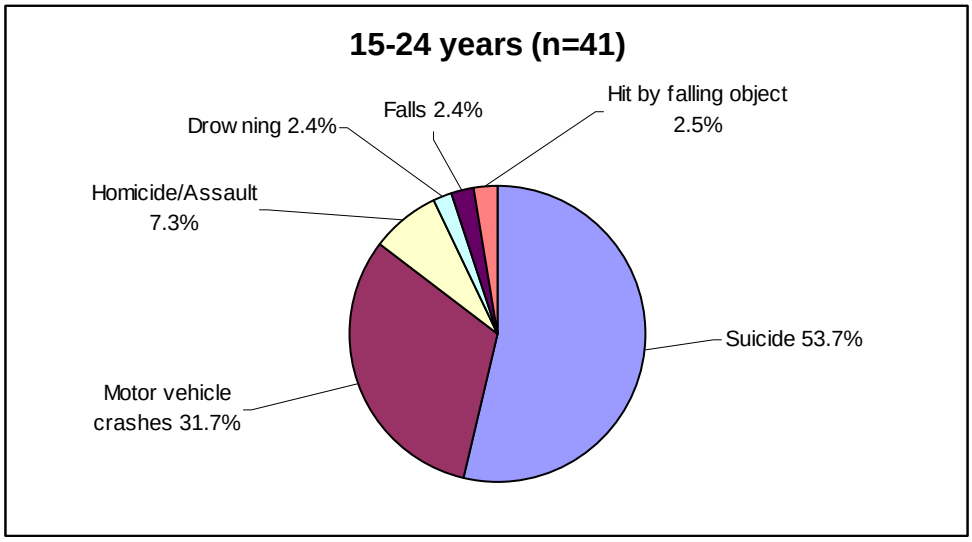
As shown by figure five, almost 30% of injury deaths were caused by motor vehicle crashes on a public road in the 5-14 year age group. Suicide; suffocation; cycle crashes; fire and flames; and drowning equally accounted for the remainder.

Figure 5: Leading causes of injury mortality for 5-14 year olds, 1993-1999



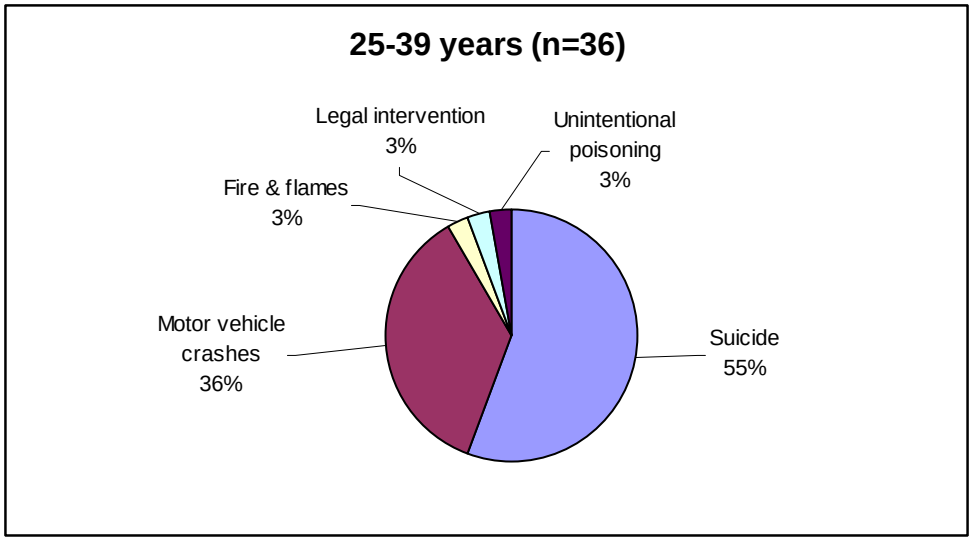
Suicide was the leading cause of injury death in those aged between 15 and 24 years (53.7%, figure six). Motor vehicle crashes accounted for almost a third (31.7%) of the deaths and seven percent were the result of homicide or assault.

Figure 6: Leading causes of injury mortality for 15-24 year olds, 1993-1999



In the 25-39 year old age group, suicide accounted for 55% of deaths (figure 7). Thirty-six percent were caused by motor vehicle crashes on a public road, and fire and flames, drowning and unintentional poisoning accounted for three percent of deaths respectively.

Figure 7: Leading causes of injury mortality for 25-39 year olds, 1993-1999



Fifty-seven percent of deaths in the 40-59 year old age group were due to suicide (figure eight). Motor vehicle crashes on a public road were the second leading cause of injury death (24%); followed by drowning (9%); and non-road transport crashes (4%).

Figure 8: Leading causes of injury mortality for 40-59 year olds, 1993-1999

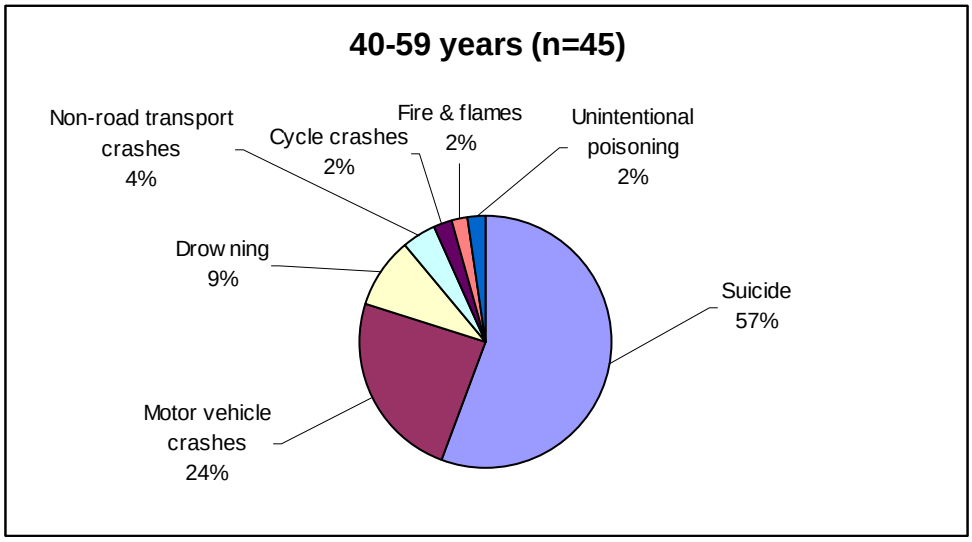
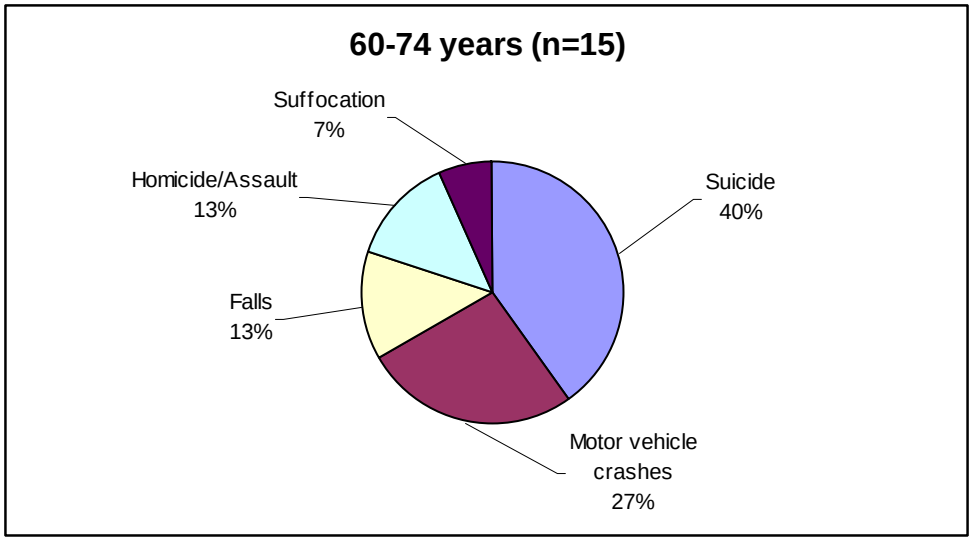


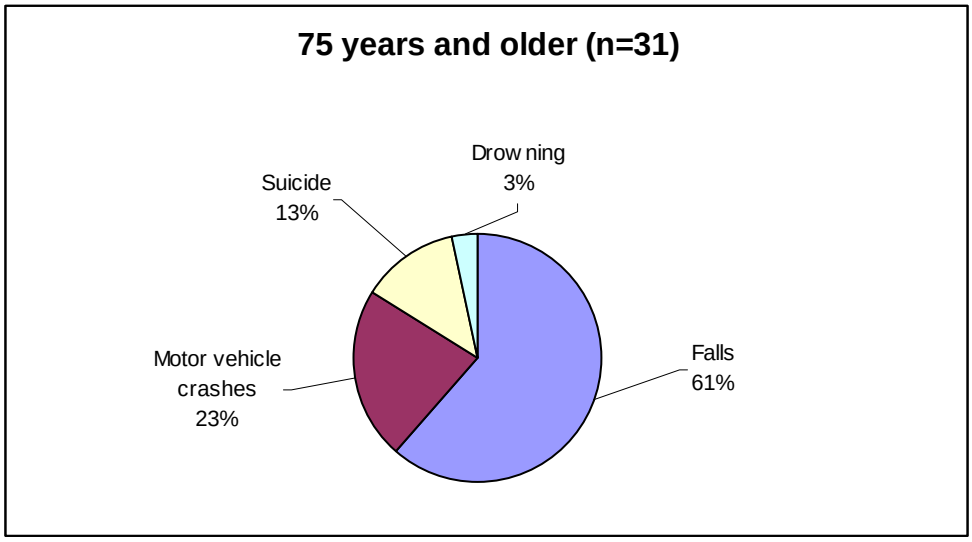
Figure nine shows that for people aged between 60-74 years of age, forty percent of deaths were the result of suicide and a further 27% were caused by motor vehicle crashes on a public road. Homicide/assault and falls each accounted for 13% of all injury deaths in this age group.

Figure 9: Leading causes of injury mortality for 60-74 year olds, 1993-1999



For people aged 75 years and older, over 60% of deaths were the result of a fall (figure 10). Motor vehicle crashes on a public road accounted for 23% of the injury deaths, and 13% were the result of suicide.

Figure 10: Leading causes of injury mortality for 75+ year olds, 1993-1999



For the period 1996-1999, New Zealand European/Other had the highest age-standardised rate of injury deaths (62 per 100,000 person years), followed by Maori (51 per 100,000 person years). No Pacific people were recorded as having died of injury in Invercargill City during this time period. Of the 98 people who died from injury, New Zealand European/Other accounted for the majority (89.8%), with Maori comprising the remaining 10.2%.

Figure 11 gives a breakdown of injury death rates by ethnicity and age group. There were no recorded injury deaths for people aged 60-74 or 75 years and older in the Maori population of Invercargill City. Those aged 75 years and older in the New Zealand European/Other ethnic group had the highest rate of injury death (190 per 100,000 person years), followed by those in the 5-14 year old age group (89 per 100,000 person years). While slightly lower than in the New Zealand European/Other ethnic group, Maori children aged 5-14 years had the highest rate of injury death in the Maori population (85 per 100,000 person years), followed by those aged 40-59 years (56 per 100,000 person years).

Figure 11: Injury death rates by ethnicity and age group for Invercargill City, 1996-1999

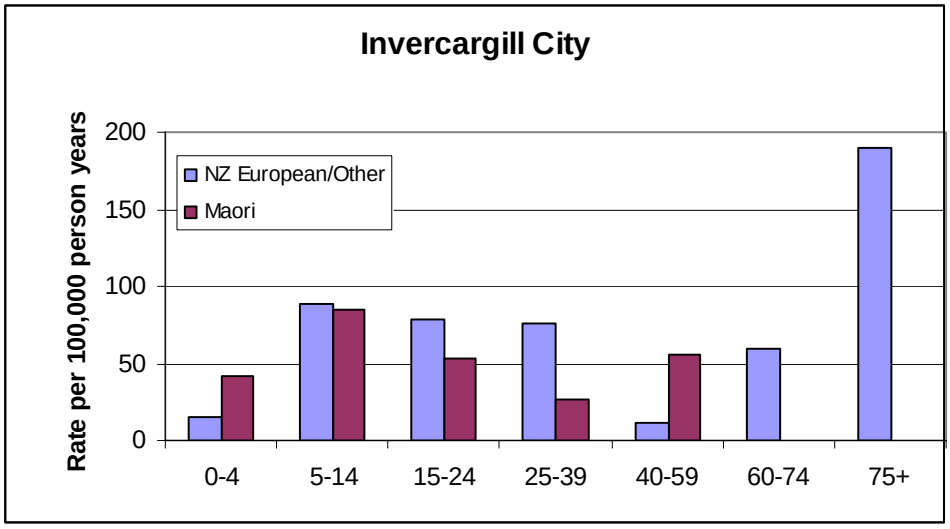


Table five shows that motor vehicle crashes on a public road and suicide accounted for 70% of injury deaths in both New Zealand European/Other and Maori people. Drowning, homicide/assault and suffocation each accounted for 10% of injury deaths in the Maori population respectively, while 16% of injury deaths were the result of falls for the New Zealand European/Other population.

Table 5: Ethnic comparison of leading causes of injury deaths, 1996-1999

Maori (n=10)		**NZ European/Other (n=88)**	
Cause	**%**	**Cause**	**%**
Motor vehicle crashes on public road	40	Suicide	45
Suicide	30	Motor vehicle crashes on public road	24
Drowning	10	Falls	16
Homicide/Assault	10	Fire & flames	3
Suffocation	10	Homicide/Assault	3

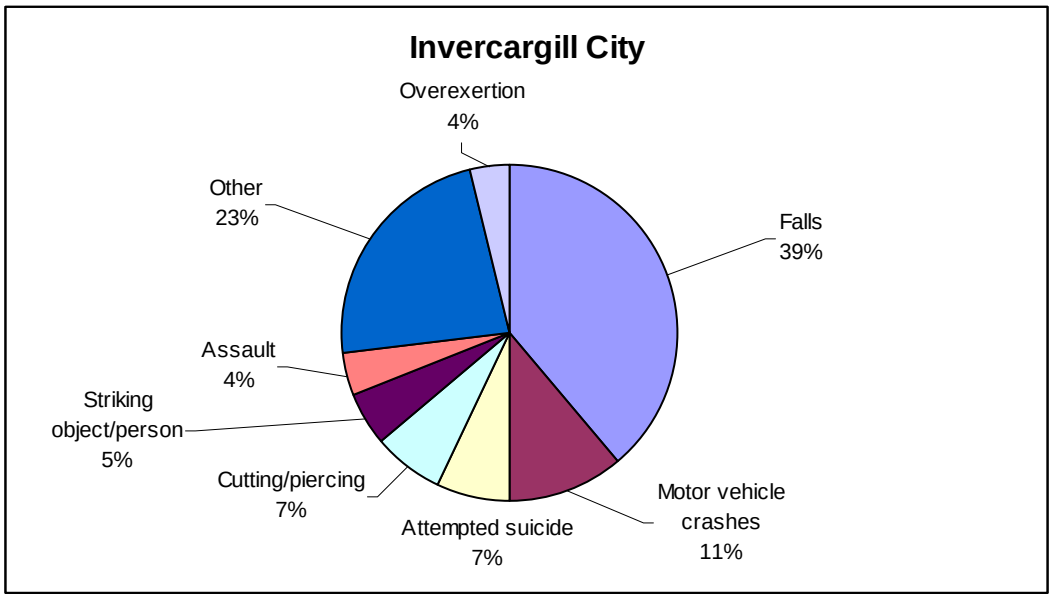
3.2.3 NZHIS injury morbidity 1993-2003

Between 1993 and 2003, 5,915 residents of Invercargill City were hospitalised for injury. The crude injury hospitalisation rate during this period was 1,032 injury hospitalisations per 100,000 person years. Males accounted for the majority (59%) of the injury hospitalisations.

Figure 12 shows the leading cause of injury hospitalisation was falls (39%). The other leading causes of injury were cutting and piercing (11%); motor vehicle

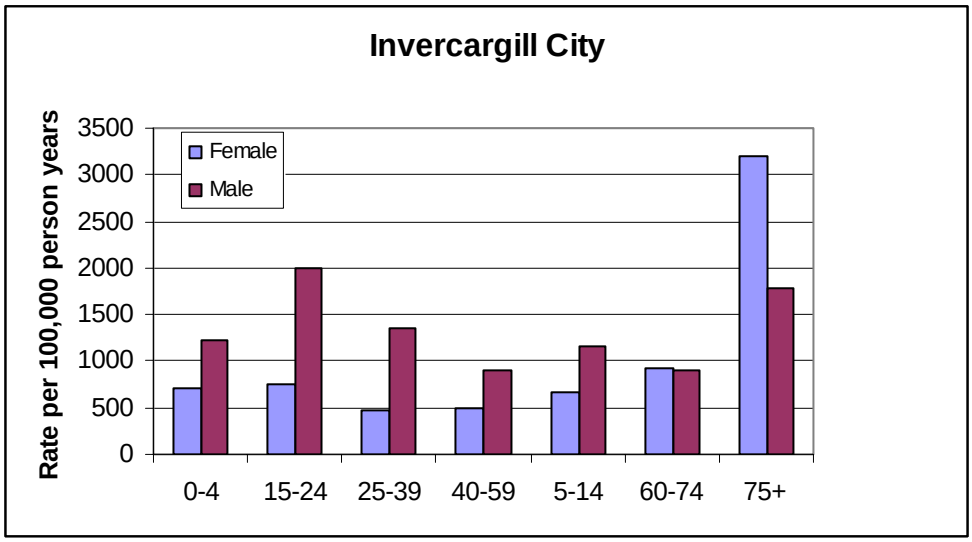
crashes on a public road (11%); assault (6%); being struck by an object or person (6%); and attempted suicide/deliberate self-harm (5%).

Figure 12: Invercargill City- leading causes of injury morbidity 1993-2003



As illustrated by figure 13, females aged 75 years and older had the highest rates of injury hospitalisation across all age groups and in both genders. In females those aged 60-74 years had the second highest rate. For males, the 15-24 years age group had the highest rates of injury hospitalisation, followed by those aged 75 years and over. Males had higher rates of injury across all age groups below the age of 60.

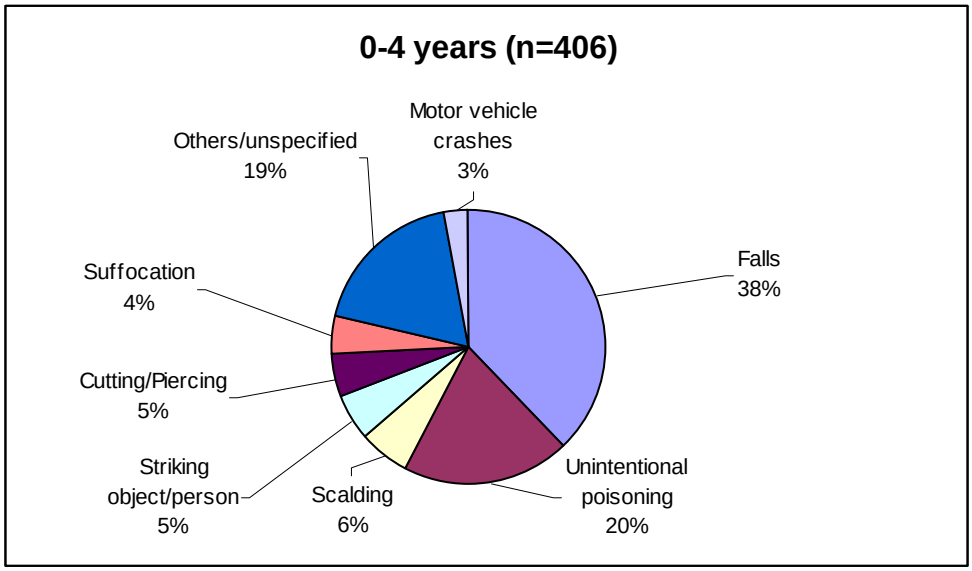
Figure 14: Rates of injury hospitalisation by age and gender, 1993-2003



3.2.3.1 Leading cause of injury morbidity by age group

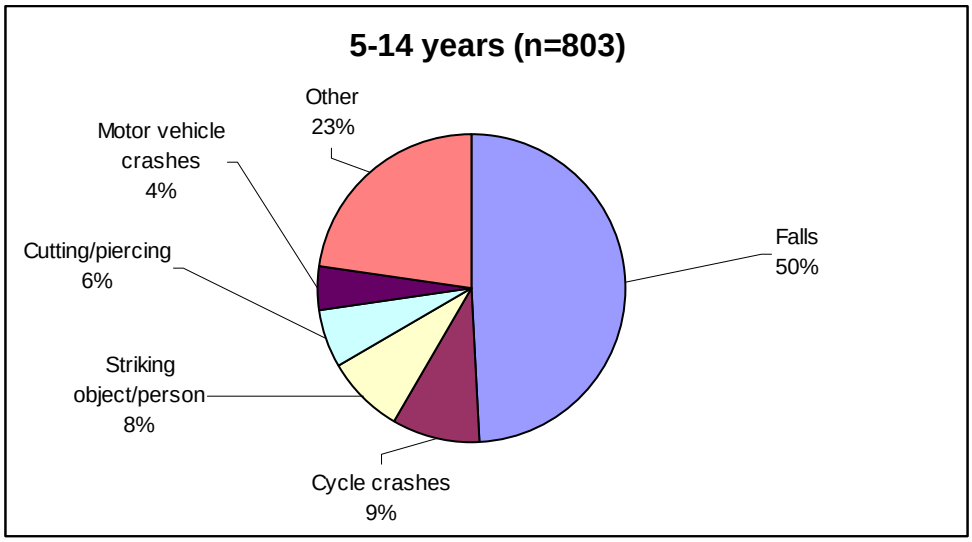
Figure 15 shows that for 0-4 year olds, falls were the leading cause of injury hospitalisation (38%). Twenty percent of the hospitalisations were the result of unintentional poisoning, six percent were due to scalding and five percent were due to cutting and piercing and being struck by an object or person respectively.

Figure 15: Leading causes of injury hospitalisation for 0-4 year olds, 1993-2003



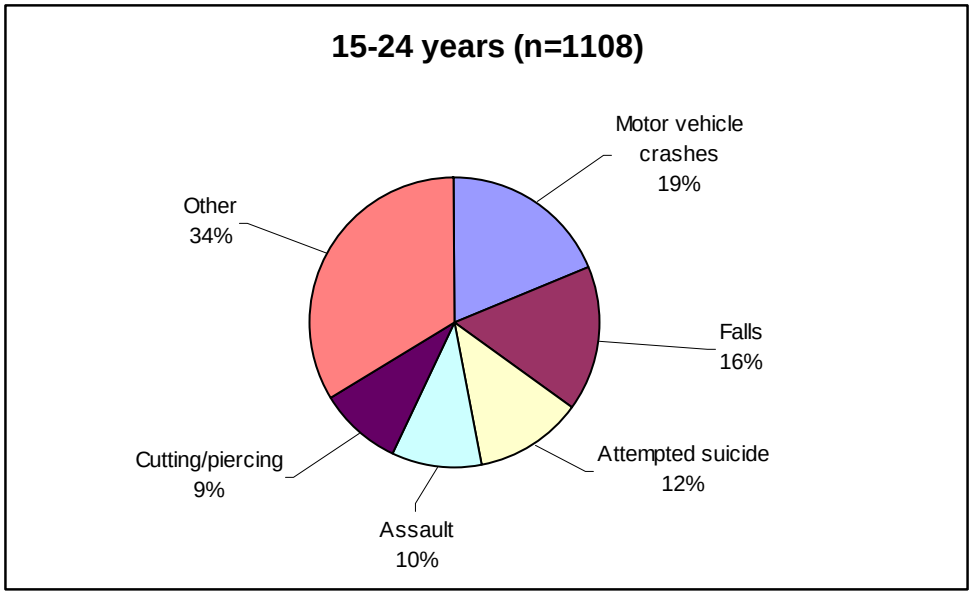
For 5-14 year olds, falls accounted for half (50%) of the injury hospitalisations (figure 16). The other leading causes were cycle crashes (9%), being struck by a person or object (8%) and cutting or piercing (6%).

Figure 16: Leading causes of injury hospitalisation for 5-14 year olds, 1993-2003



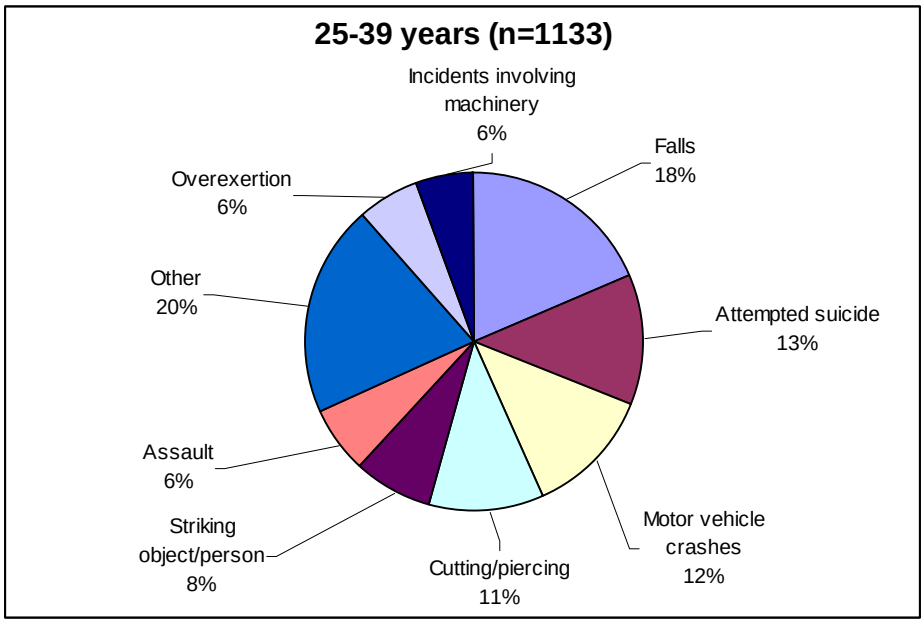
For 15-24 year olds, motor vehicle crashes on a public road were the leading cause of injury hospitalisation (19%), followed by falls 16%; (see figure 17). The other leading causes were attempted suicide (12%); assault (10%); and cutting and piercing (9%).

Figure 17: Leading causes of injury hospitalisation for 15-24 year olds, 1993-2003



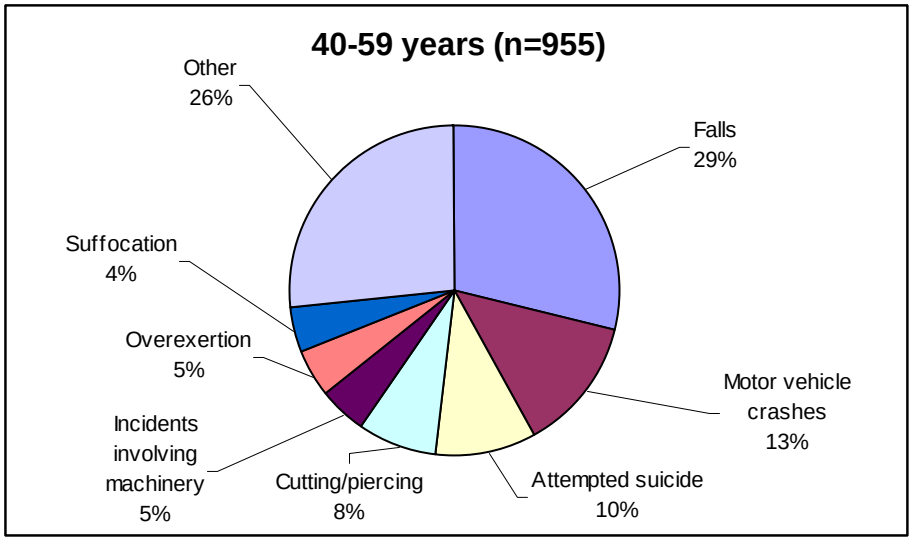
For people aged 25-39 years, falls (18%) were the leading cause of injury hospitalisation (figure 18). The other leading causes were attempted suicide (13%), motor vehicle crashes on a public road (12%) and cutting and piercing (11%).

Figure 18: Leading causes of injury hospitalisation for 25-39 year olds, 1993-2003



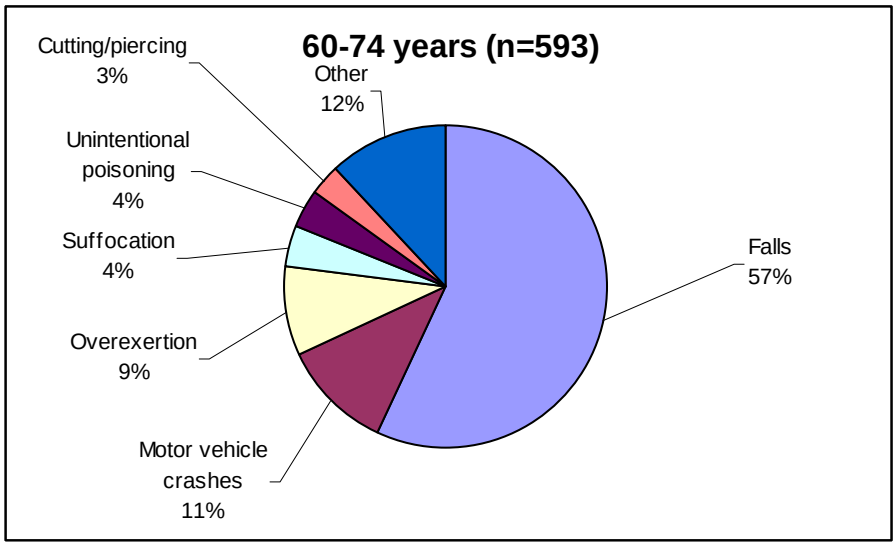
Twenty-nine percent of people aged 40-59 years suffered from a fall, making this the leading cause injury hospitalisation (figure 19). Other significant causes were motor vehicle crashes on a public road (13%); attempted suicide (10%); and cutting or piercing (8%).

Figure 20: Leading causes of injury hospitalisation for 40-59 year olds, 1993-2003



For 60-74 year olds, falls (57%) were the leading cause of injury hospitalisation (figure 21). The other leading causes were motor vehicle crashes on a public road (11%); overexertion and strenuous movements (9%); suffocation (4%); and unintentional poisoning (4%).

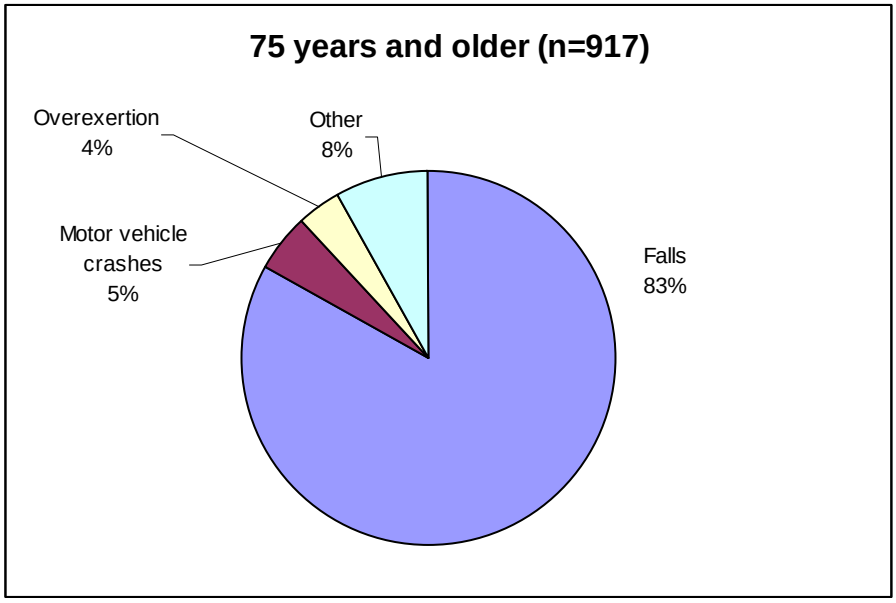
Figure 21: Leading causes of injury hospitalisation for 60-74 year olds, 1993-2003



For people aged 75 years and older, the overwhelming cause of injury hospitalisation were falls at 83% (figure 22). The other leading causes were motor

vehicle crashes on a public road (5%) and overexertion and strenuous movement (4%).

Figure 22: Leading causes of injury hospitalisation for 75+ year olds, 1993-2003



For the period 2001-2003, New Zealand European/Other had the highest age-standardised rate of hospitalised injuries (961 per 100,000 person years), followed by Maori (764 per 100,000 person years), and Pacific people (715 per 100,000 person years). New Zealand European/Other accounted for the majority of the injury hospitalisations (89%), followed by Maori (10%), and the remaining one percent was Pacific people.

Figure 23 gives a breakdown of injury hospitalisation rates by ethnicity and age group. The New Zealand European/Other ethnic group had the highest injury rate (2,843 hospitalisations per 100,000 person years) in the older age group (75 years and older). Similarly for Maori, those aged 75 years and older tended to have the highest rate (1674 hospitalisations per 100,000 person years) of injury. Pacific peoples had the highest rate of injury (1,199 hospitalisations per 100,000 person years) for those aged 25-39 years.

Figure 23: injury hospitalisation rates by ethnicity and age group for Invercargill City, 2001-2003

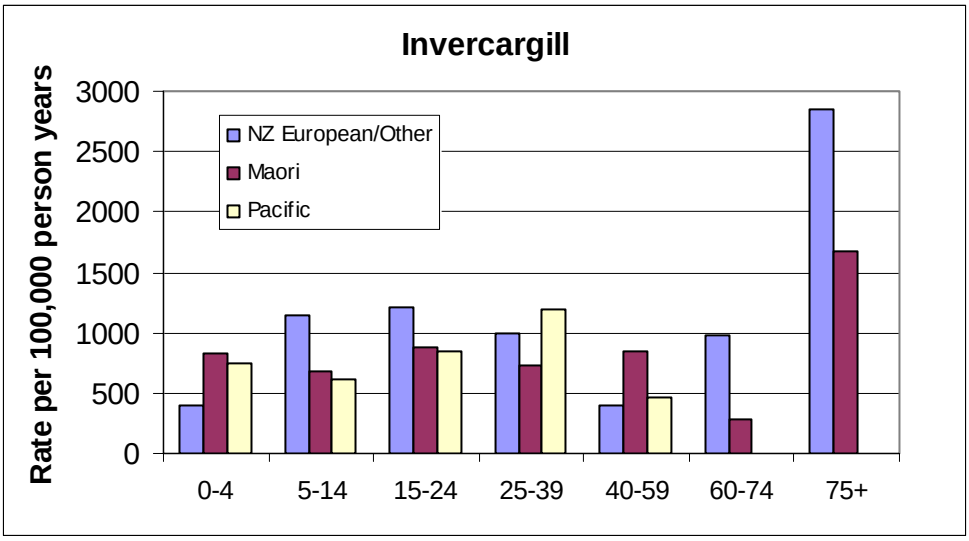


Table six shows that the leading causes of injury hospitalisation during the period 2001-2003 were similar across all ethnic groups. However, a higher percentage of New Zealand European/Other were injured by falls (41%) compared to the other ethnic groups, and Pacific peoples had a higher proportion of injuries caused by motor vehicle crashes on a public road (25%) and incidents involving machinery (17%). Injuries caused by attempted suicide/self-harm only featured as a leading cause of injury hospitalisation for New Zealand European/Other (7%).

Table 6: Ethnic comparison of leading causes of injury hospitalisation, 2001-2003

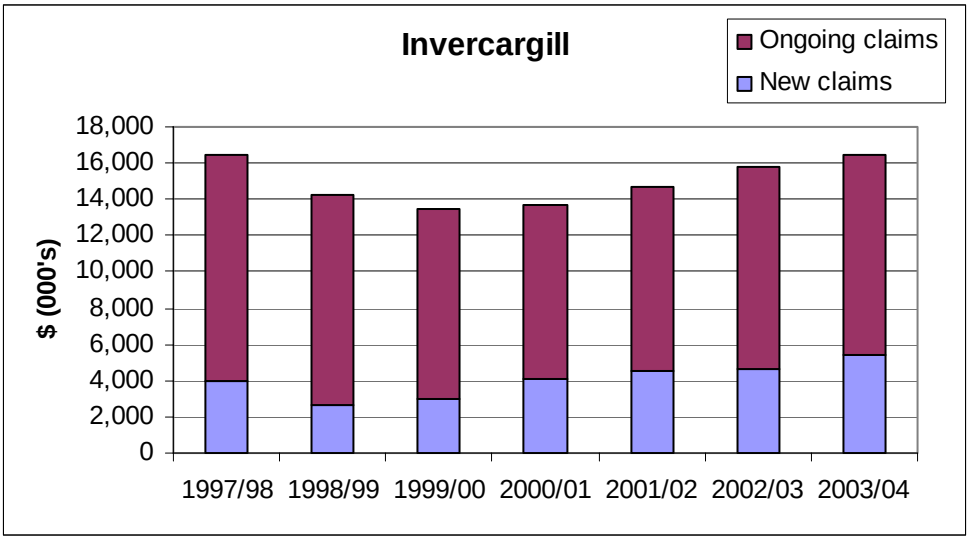
Maori (n=150)		**NZ European/Other (n=1361)**		**Pacific (n=24)**	
Cause	**%**	**Cause**	**%**	**Cause**	**%**
Falls	29	Falls	41	Motor vehicle crashes on public road	25
Cutting/Piercing	10	Motor vehicle crashes on public road	10	Incidents involving machinery	17
Assault	9	Attempted suicide/self-harm	7	Falls	17
Motor vehicle crashes on public road	8	Overexertion or strenuous movement	5	Cutting or piercing	13
Incidents involving machinery	5	Cutting or piercing	4	Striking an object or person	8

3.3 ACC injury statistics

The information in this section is taken from an ACC analysis of entitlement claims and injury deaths for residents of the Invercargill City community. It should be noted that the number of entitlement claims will be less than the total number of injury claims made to ACC, as entitlement claims only exist for cases where some form of compensation is paid directly to the injured person.

As shown in figure 24 the total cost of new and ongoing entitlement claims in Invercargill City decreased from $16.41 million in 1997/98 to $13.5 million in 1999/00. The cost steadily increased to be equal to the 1997/98 level in 2003/04 ($16.41 million).

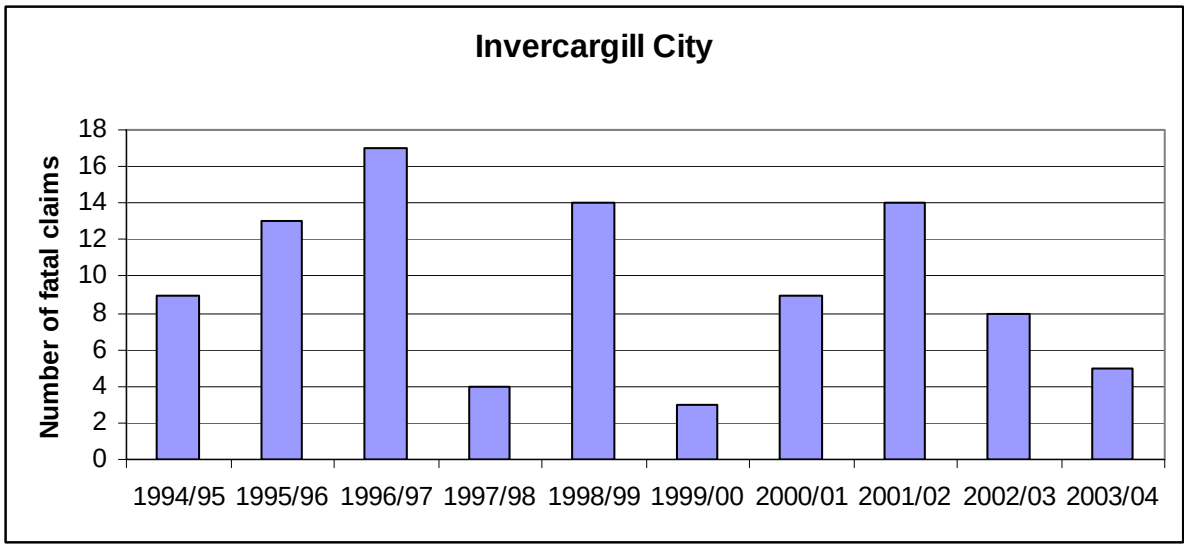
Figure 24: Costs of new and ongoing entitlement claims in Invercargill City, 1997/8-2003/4



3.3.1 ACC entitlement claims for injury-related deaths 1994-2004

Figure 25 shows that the number of entitlement claims for injury related deaths (or fatal claims) in Invercargill City has peaked three times in the last 10 years, with 17 in 1996/97 being the highest number of fatal claims. The number of fatal claims for 2003/04 is one of the lowest for the city in the last 10 years (n=5).

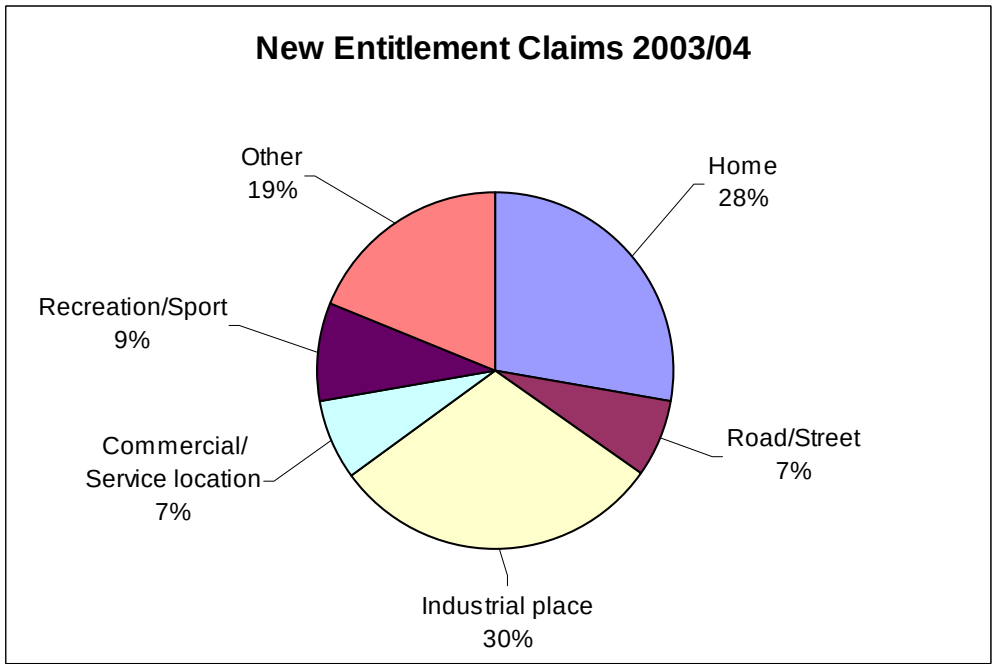
Figure 26: ACC entitlement claims for injury-related deaths occurring in Invercargill City, 1994/95 – 2003/04



3.3.2 ACC new entitlement claims for injuries 2003/04

Figure 27 shows that injuries occurring in the industrial setting accounted for 30% of new entitlement claims registered with ACC in 2003/04. Injuries occurring within the home accounted for 28%. Nine percent of injuries occurred at the scene of recreation or sport and seven percent of injuries occurred in a commercial or service location and on a road or street.

Figure 27: New entitlement claims registered with ACC in 2003/04 by scene of accident, Invercargill City



A breakdown of entitlement claims by diagnosis shows that soft tissue injuries accounted for 44% of all claims (figure 28). Fractures and dislocations accounted for 23% of claims, and lacerations/punctures accounted for 10%.

Figure 28: Diagnosis of entitlement claims registered with ACC in 2003/04, Invercargill City

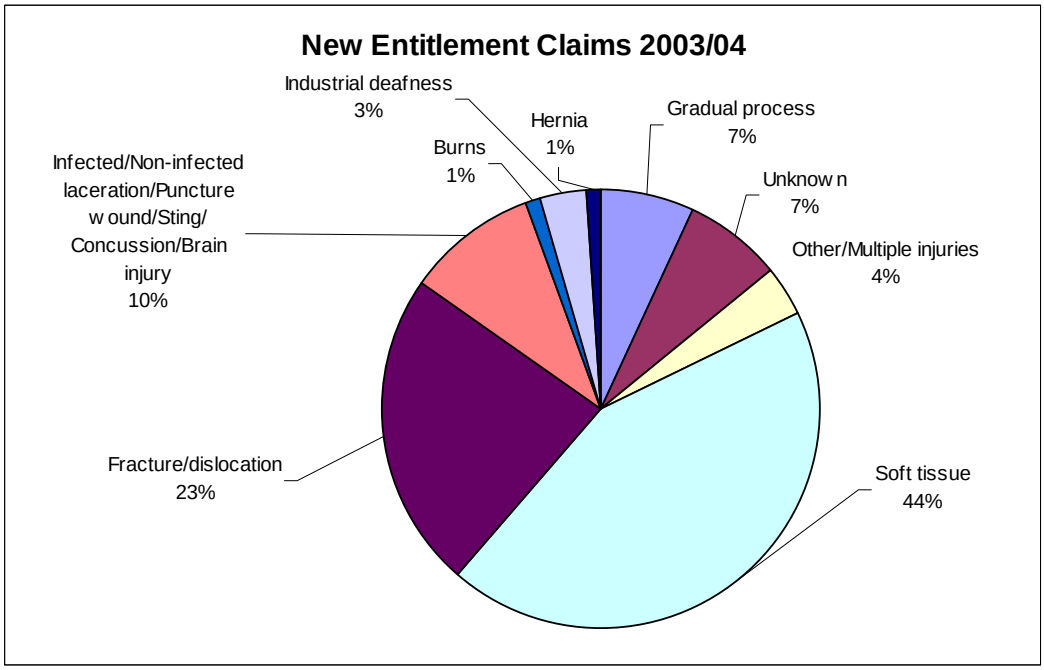
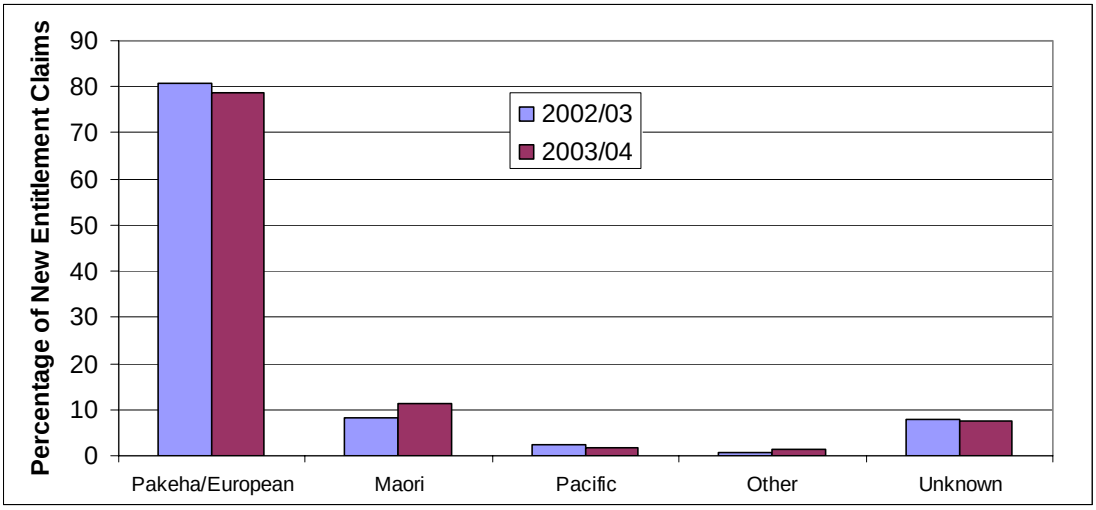


Figure 29 shows that New Zealand European/Other had the highest percentage of new entitlement claims registered with ACC in both 2002/03 and 2003/04 (81% and 79% respectively) in Invercargill City. In 2003/04, Maori accounted for 11% of new entitlement claims and Pacific people two percent. The percentage of new entitlement claims for the Invercargill City population in 2003/04 were slightly higher than the previous year.

Figure 29: New entitlement claims by ethnicity registered with ACC in 2002/03 and 2003/04, Invercargill City



3.4 LTSA road injury statistics

The figures quoted in this section are taken from Motor Accidents in New Zealand 2002 (LTSA, 2003); Road Safety Atlas (LTSA, 1996); and 1997/98 Travel Survey Report (LTSA, 2000). It should be noted that not all motor vehicle crashes are reported to the Police; therefore LTSA figures underestimate the burden of injury due to motor vehicle crashes in New Zealand.

In 2002, the Invercargill District had a crash rate of 44.6 crashes per 10,000 population, and a casualty rate of 63.2 per 10,000 population. As shown in table seven, there were 223 road traffic crashes in Invercargill, resulting in 325 casualties.

Table 7: Reported road traffic crashes and casualties in the Invercargill District, 2002

Type of injury	Number of crashes	Number of injuries
Fatalities	6	6
Serious injuries	217	54
Minor injuries		265
Total	223	325

The social cost of road injury in Invercargill City is $33 million/year, which is equivalent to a per capita social cost of $980/person/year (table eight). The per capita social cost of road crash injury in Invercargill City was lower compared to the Southland region, but higher than New Zealand's per capita social cost. Invercargill

City had a higher social cost per road km than both the Southland region and New Zealand as a whole.

Table 8: Measures of road safety

Other road safety measures	Invercargill City	Southland Region	New Zealand
Per capita social cost ($/person/year)	980	1015	840
Social cost per road km ($000/km/yr)	51	12	33

As defined by the Road Safety Atlas (LTSA, 1996), risk-ratios for causal factors in road crashes are calculated as the social cost per unit of traffic volume. They are a useful tool for measuring and comparing the contribution of causal factors to road traffic injury.

As can be seen from table nine, Invercargill City has lower risk-ratios for driver factors such as 'alcohol', 'speed' and 'alcohol and speed combined' compared to the Southland region. In comparison to the whole of New Zealand, the risk-ratio for 'alcohol and speed combined' was higher for Invercargill. The risk-ratios for 'non-driver factor' and 'driver – not speed or alcohol' were higher compared to the Southland Region and the whole of New Zealand.

Table 9: Risk-ratios for driver factors

Risk –Driver factors (cents/veh-km)	Invercargill City	Southland Region	New Zealand
Alcohol	1.48	1.64	1.68
Alcohol and speed combined	1.38	2.21	1.29
Speed	0.98	1.49	1.48
Driver -not speed or alcohol eg. Overtaking, failure to give way, tiredness	4.93	3.42	3.94
Non-driver factor	2.35	1.57	1.45
All causes	11.12	10.33	9.84

Table 10 shows that the risk-ratios for pedestrian involvement and cyclist involvement as causal factors for road traffic injuries were higher in Invercargill City than the Southland Region and for all of New Zealand. However the risk-ratio for no pedestrian or cyclist involved in Invercargill City was lower than the risk-ratios for the Southland Region and for all of New Zealand.

Table 10: Risk-ratios for pedestrian and cyclist factors

Risk –pedestrian and cyclist factors (cents/veh-km)	Invercargill City	Southland Region	New Zealand
No pedestrian or cyclist involved	8.68	9.13	8.78
Pedestrian involvement	2.05	0.88	0.78
Cyclist involvement	0.39	0.32	0.28
All causes	11.12	10.33	9.84

As shown in table 11, the risk-ratio for non-road factors in Invercargill City was higher than the risk-ratios for the Southland region and the whole of New Zealand. However the risk-ratio for road factors involved (e.g. slippery surface, obstructions, and road works) was lower than the Southland Region but higher than all of New Zealand.

Table 11: Risk-ratios for road factors

Risk - road factors (cents/veh-km)	Invercargill City	Southland Region	New Zealand
Non-road factor	9.89	8.69	8.84
Road factor involved eg slippery surface, obstructions, road works	1.22	1.64	1.00
All causes	8.17	7.92	9.84

Table 12 shows that the risk-ratio for vehicle factors involved (e.g. faulty brakes, worn tyres, and punctures) in Invercargill City was lower than the risk-ratios for both the Southland Region and all of New Zealand. The risk-ratio for non-vehicle factor in Invercargill City was higher than the risk-ratio in Southland Region and for all of New Zealand.

Table 13: Risk-ratios for vehicle factors

Risk – vehicle factors (cents/veh-km)	Invercargill City	Southland Region	New Zealand
Non-vehicle factor	10.73	9.89	9.20
Vehicle factor involved eg faulty brakes, worn tyres, punctures	0.38	0.44	0.64
All causes	8.17	7.92	9.84

Overall, these risk-ratios indicate that driver factors contribute the greatest amount of risk for motor vehicle crashes occurring in Invercargill City.

Table 14 shows the results of a restraint usage survey published in Motor Vehicle Crashes in New Zealand 2002 (LTSA, 2003). There was no information available

specifically for Invercargill City; however the figures show that the use of restraints by adults in both the front and rear seats were lower in the Southland Region compared to all of New Zealand. Child restraint use and cycle helmet wearing were comparable.

Table 14: Restraint usage, March 2002

Restraint Usage	Southland Region (%)	New Zealand (%)
Front seat adults	87	92
Rear seat adults	67	70
Child restraints	81	82
Cycle helmet wearing	93	94

The regional figures in table 15 are obtained from the 1997/98 Travel Survey Report (LTSA, 2000) and show that the travel habits of the Southland Region residents were similar to all of New Zealand, except more people were likely to be a driver in the Southland Region, and less were likely to be pedestrians.

Table 15: Travelling distances for motorists in Auckland and New Zealand 1997/98

Millions of trips per year (as a percentage of total)	Southland (%)	New Zealand (%)
Driver	55.0	49.8
Passenger	28.7	26.6
Cyclist	2.2	1.9
Pedestrian	12.0	19.4
Bus	2.1	2.3

4.0 Summary

The NZHIS injury mortality and morbidity data and the information from both ACC and LTSA clearly point to areas that need to be prioritised by those developing safety promotion programmes.

Key findings from the injury data for Invercargill City show that:

- Of the 31 deaths per 100,000 person years caused by injury, almost three-quarters of the cases were male. Those aged between 15 and 24 years, and 75 years and older had the highest rate of death among the age groups, and suicide accounted for almost half of the deaths regardless of age group or ethnicity.
- In Invercargill City there are 1,032 injury related hospitalisations per 100,000 person years. Fall-related injuries are the leading cause of hospitalisation in almost all age groups except those aged 15-24 years, where the leading cause is motor vehicle crashes. By ethnicity, falls account for the majority of injuries in New Zealand European/Other and Maori people in Invercargill.
- The ACC data shows that the cost of entitlement claims for Invercargill City has been steadily on the rise since 1998/99 for new injuries. There were almost equal numbers of reported injuries that occurred in the workplace or at home, and the predominant diagnoses were soft tissue injuries (at 44%) and fractures or dislocations.
- The LTSA data investigating risk factors for motor vehicle crashes showed that driver factors such as fatigue, overtaking or failure to give way (not speed or alcohol), and crashes involving pedestrians had risk ratios that were noticeably higher for Invercargill City when compared to the whole of New Zealand. In addition, one third of adult passengers do not wear a seatbelt in the rear seat of a car.

5.0 References

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