Safe Communities' Foundation New Zealand

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Rodney Injury Data 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 Rodney District, more than 30 other communities at various stages of implementing community action in injury prevention, including Whangarei City, Auckland City, Waitakere City, Manukau City, North Shore City, Wellington City, Christchurch City, New Plymouth, 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 death rates for the comparison community, where there was no community-based injury prevention programmes in place, increased during this period.

Similarly, following implementation of Safe Waitakere in 1996 injury death rates decreased considerable 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 programmes 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 five 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 Rodney District injury statistics. Firstly, this section begins by providing an overview of the demographic data of Rodney District. Secondly, injury death data is described, including leading causes of injury deaths, overall rates of injury deaths by age group and comparisons of injury deaths by Ward. Injury hospitalisations for Rodney District are also outlined, including leading causes of injury hospitalisations; overall rates of injury hospitalisations by age group; rates of injury hospitalisations by gender; injury hospitalisations by ethnicity; and comparisons of injury hospitalisations by Ward.

Sections Four to Six outline demographic and injury statistics for the three Wards which comprise Rodney District (Section Four: Eastern Ward; Section Five: Northern Ward;

Section Six: Western Ward). Data is provided on the usual population of each ward, including information about the age and gender composition of the total population. Household and personal income information is also provided. For each ward, an analysis of overall leading causes of injury deaths is provided, and, where possible, an analysis by ethnicity is also provided. Overall causes of injury hospitalisation are provided, and a detailed analysis of injury hospitalisation is provided, including analysis by age, gender and ethnicity. Leading causes of injury hospitalisation and rates of injury hospitalisation are provided for each ward, for Maori, New Zealand European and Pacific populations. Finally, section seven briefly outlines the key injury findings for Rodney District.

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 Rodney District;
2. Routinely collected data on a Ward-by-Ward basis to enable comparisons by areas;
3. Routinely collected data to enable comparisons over time; and
4. The data in a meaningful manner to assist in the development of strategic plans for injury prevention for Rodney District.

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 Rodney District; and
- 1991, 1996 and 2001 New Zealand Census data from Statistics New Zealand.

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 Rodney District, 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 from 1996 onwards. 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

standard population used in the calculation of age-standardised rate is Segi's world population.

Sections four to six of this report present injury data at the Ward level. Injury data for the Wards were compiled by using the domicile code recorded for the injured person's place of residence. Some domicile codes may fall into two Ward boundaries, however these records are counted only once in one Ward according to the list provided by Statistics New Zealand. As the numbers of injury deaths for each of the wards are relatively small, separate analyses by ethnicity were not carried out for death data.

3.0 Rodney District Injury Statistics

3.1 Rodney District demographics

This section provides information relating to population, age, ethnicity and income for Rodney District.

Table 1: Rodney District - Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	6324	8	5700	9	3582	7
NZ European/Other	69777	92	61860	93	51939	95
Pacific peoples	1272	2	1131	2	663	1
Total persons≈	76185	102	66486	104	54816	103

* 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.

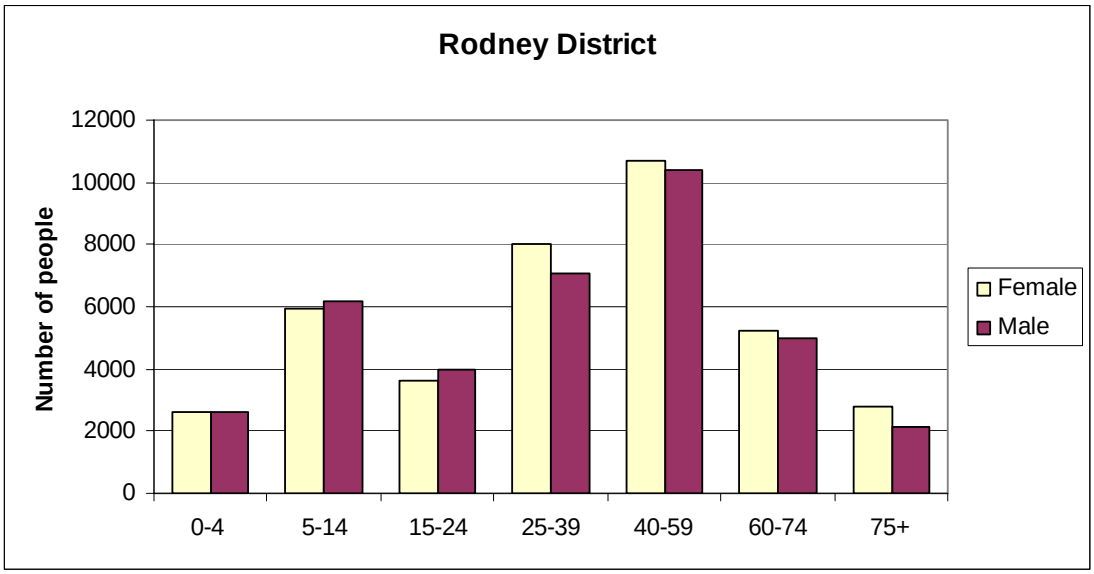
Table 2: Rodney District - Age composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	7	7	8
5-14	16	15	15
15-24	10	11	13
25-39	20	21	22
40-59	28	26	23
60-74	13	14	14
75+	6	6	5

Table 3: Rodney District - Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning > $30,000	12591	60
Personal incomes > $30,000	17175	29
Average per capita personal income	$26,511	

Figure 1: Rodney District - Age distribution by gender in 2001 Census



3.2 Injury statistics

3.2.1 NZHIS injury mortality 1993-1999

Between 1993 and 1999, 206 residents of Rodney District died as the result of receiving an injury. This is equivalent to a crude injury rate of 44 injury deaths per 100,000 person years. Males accounted for the majority (74%) of fatalities.

Figure two shows that the leading cause of injury deaths was motor vehicle crashes on a public road (38%). Suicide was the second leading cause of injury death (30%), followed by falls (15%), and homicide (2%).

Figure 2: Rodney District - Leading causes of injury mortality 1993-1999

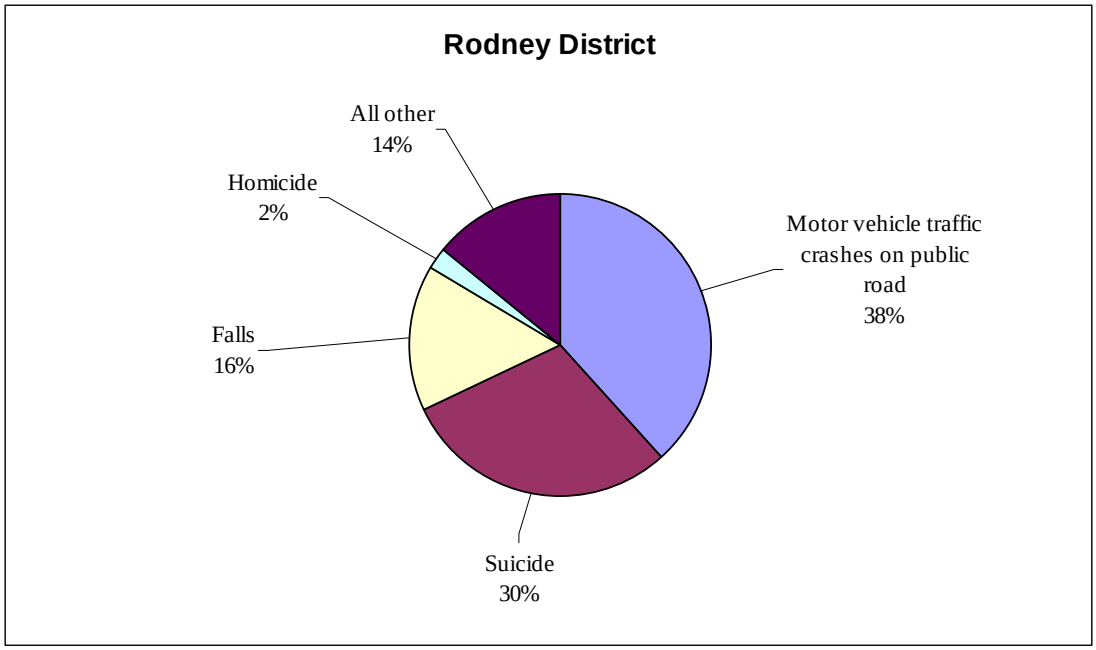
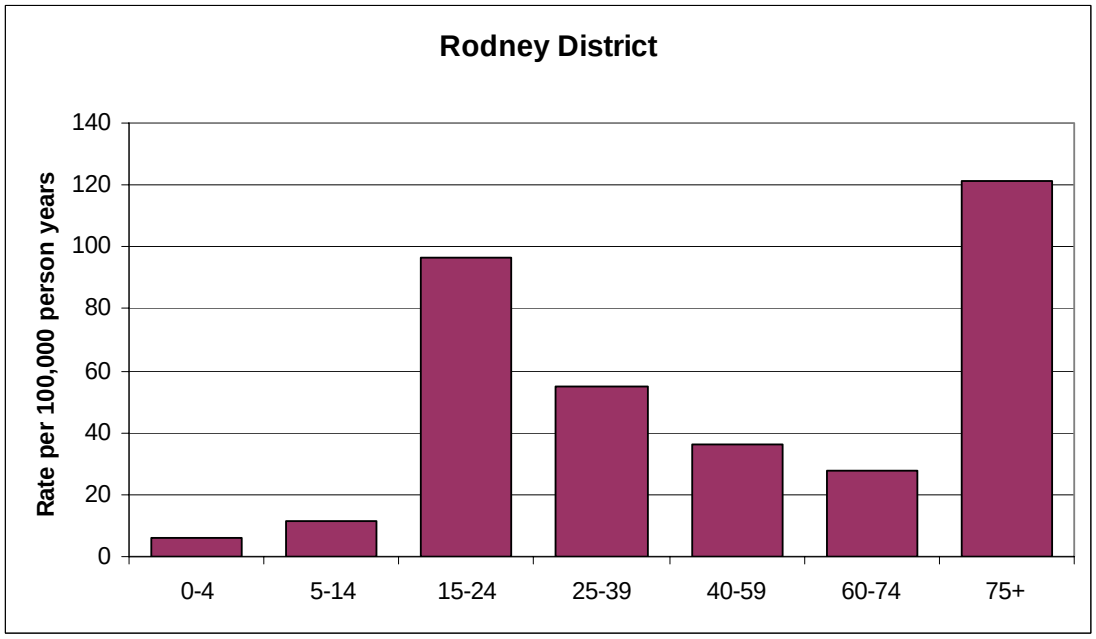


Figure three shows that the 75+ age group had the highest rate of injury death (121 deaths per 100,000 person years) followed by young people aged 15-24 years (96 deaths per 100,000 person years).

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



3.2.1.1 Leading causes of injury mortality by age group

As shown in figure four, two children aged 0-4 years died from an injury during the period of 1993-1999. One of the children died from homicide, and the other child died from a motor vehicle crash on a public road.

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

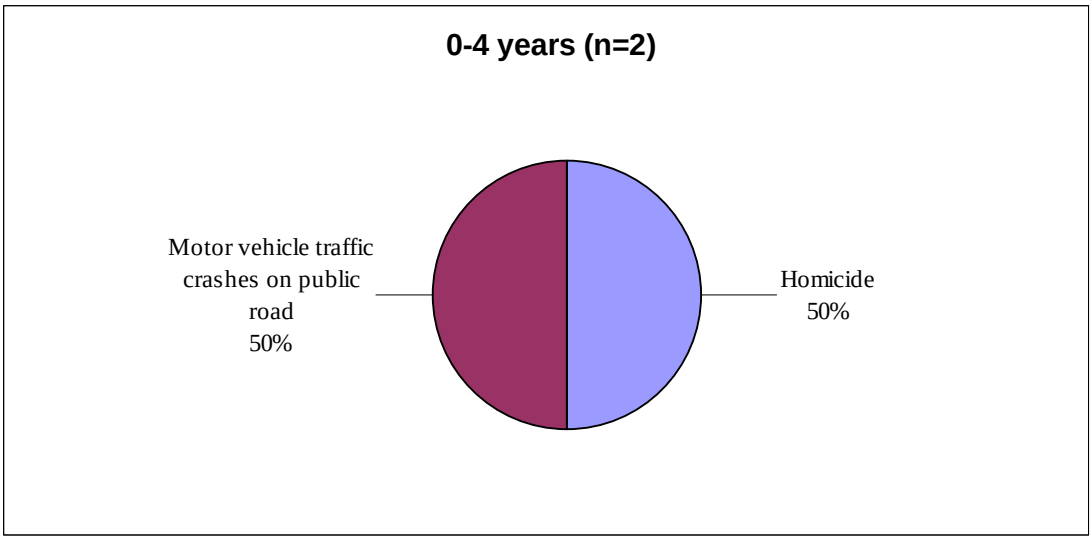
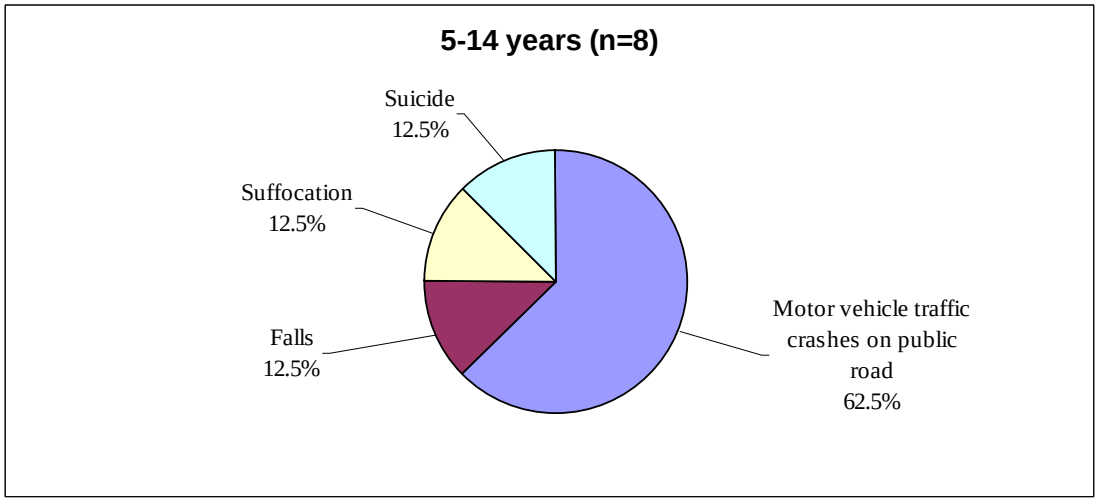


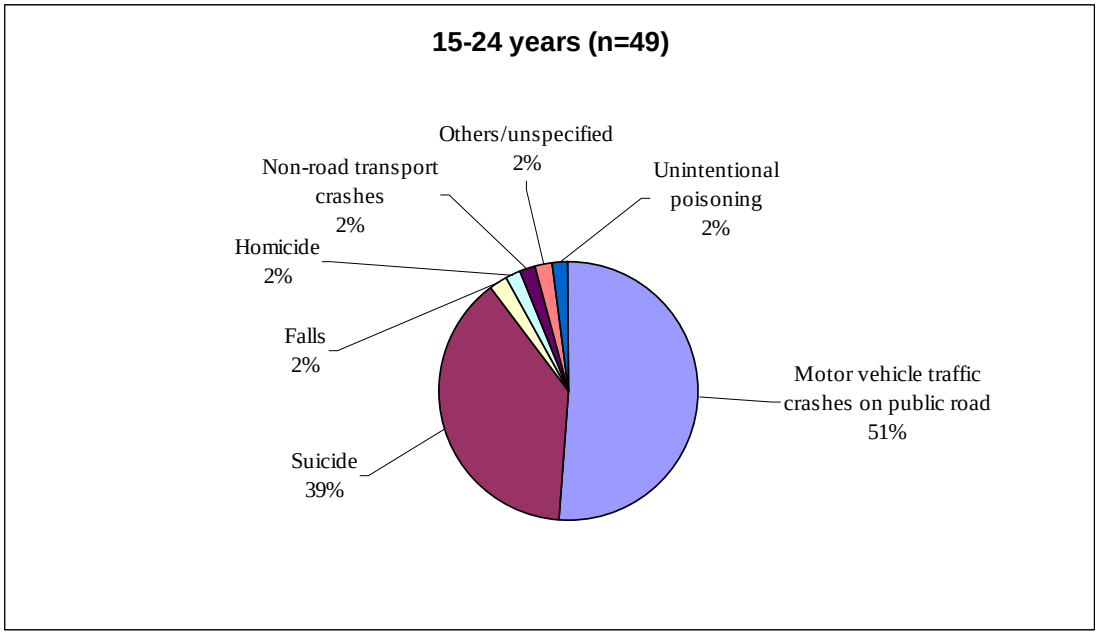
Figure five shows that in the 5-14 year age group, motor vehicle crashes on a public road were the leading cause of injury deaths (62.5%). The other leading causes of injury deaths were falls (12.5%); suffocation (12.5%); and suicide (12.5%).

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



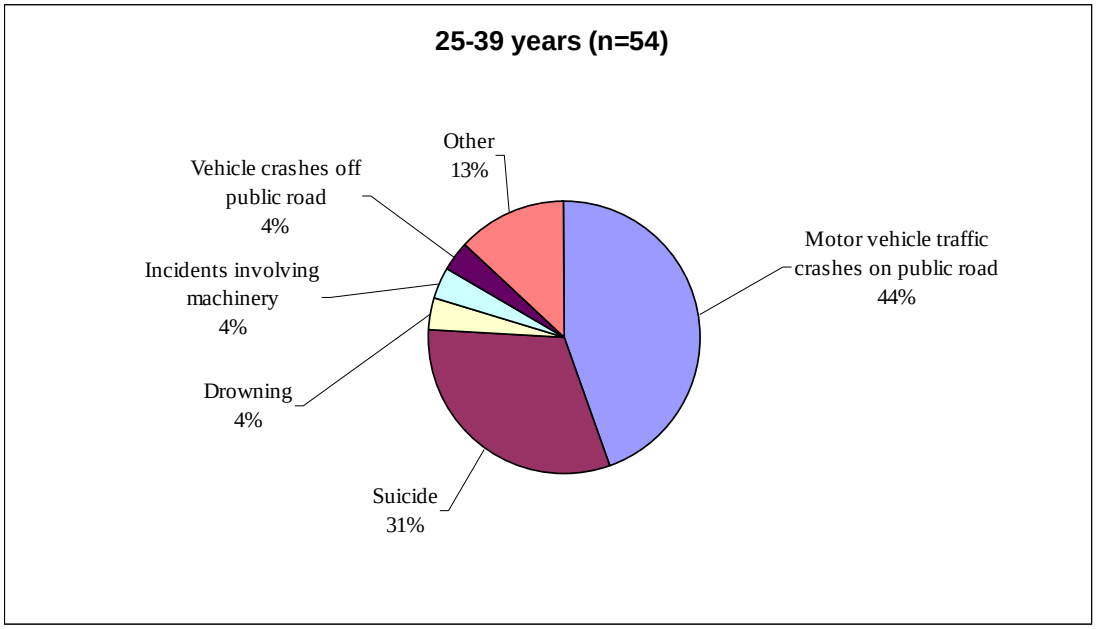
As shown in figure six, for 15-24 year olds, motor vehicle crashes on a public road were the leading cause of injury death (51%). Suicide was the second leading cause of injury death (39%), followed by falls (2%), homicide (2%), non-road transport crashes (2%), and other or unspecified cause of injury death (2%).

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



In the 25-39 age group, suicide accounted for more than one-third (38%) of deaths (figure seven). Just under one-quarter (24%) of the injury deaths were caused by motor vehicle crashes on a public road; 14% were the result of drowning; 7% of deaths were caused by falls; and 7% of the fatalities were as a result of homicide.

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



As shown in figure eight, for adults aged 40-59 years, 39% of the deaths were the result of motor vehicle crashes on a public road. Suicide was the second leading cause of injury death (23%), followed by falls (9%), hit by a falling object (5%), homicide (5%), non-road transport crashes (5%), and unintentional poisoning (5%).

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

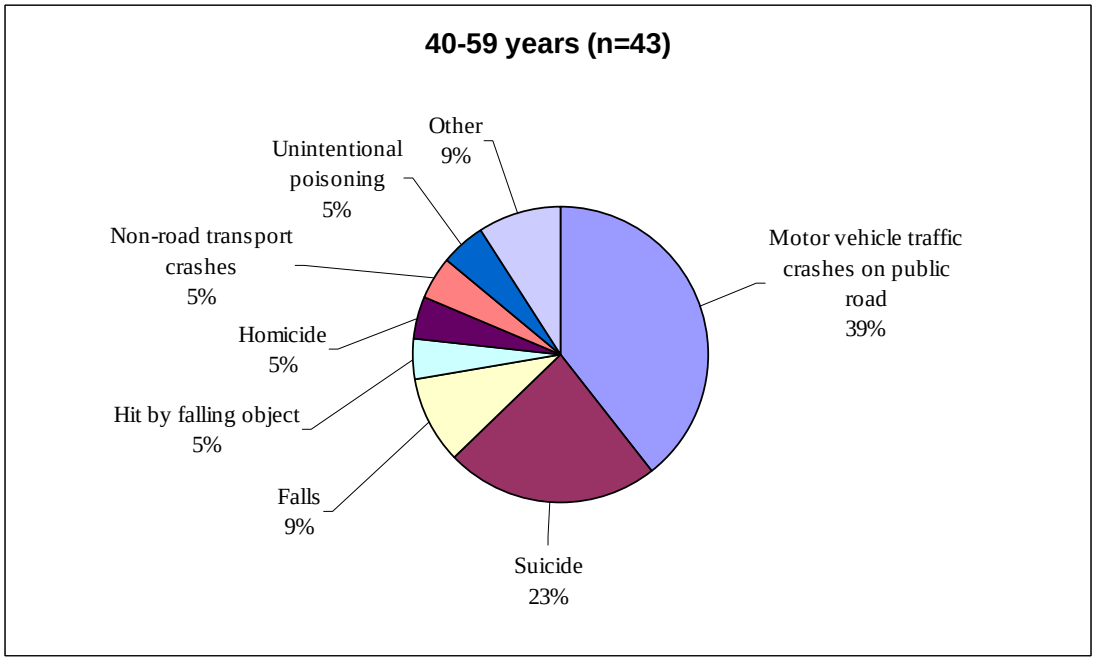
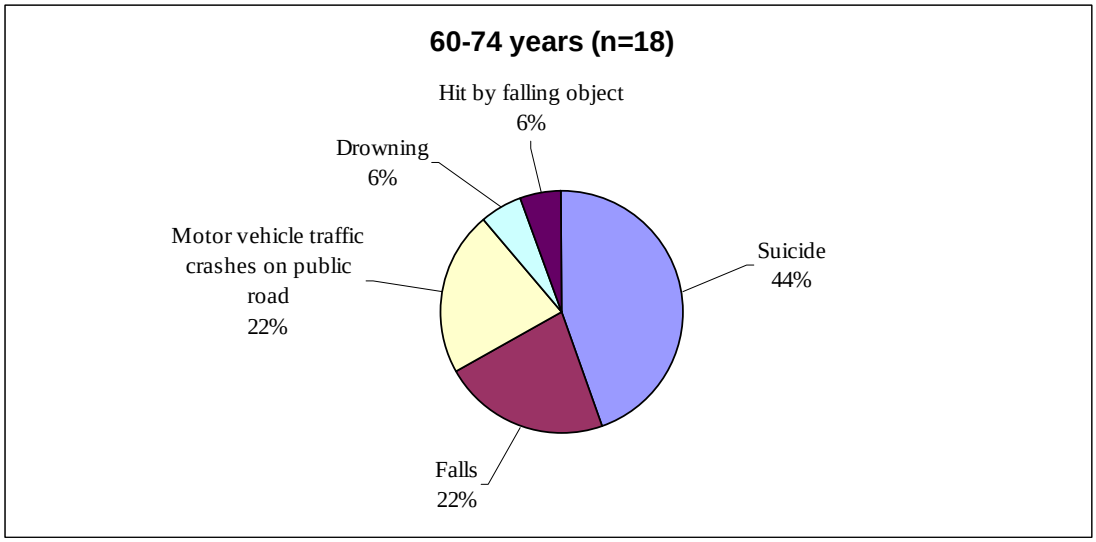


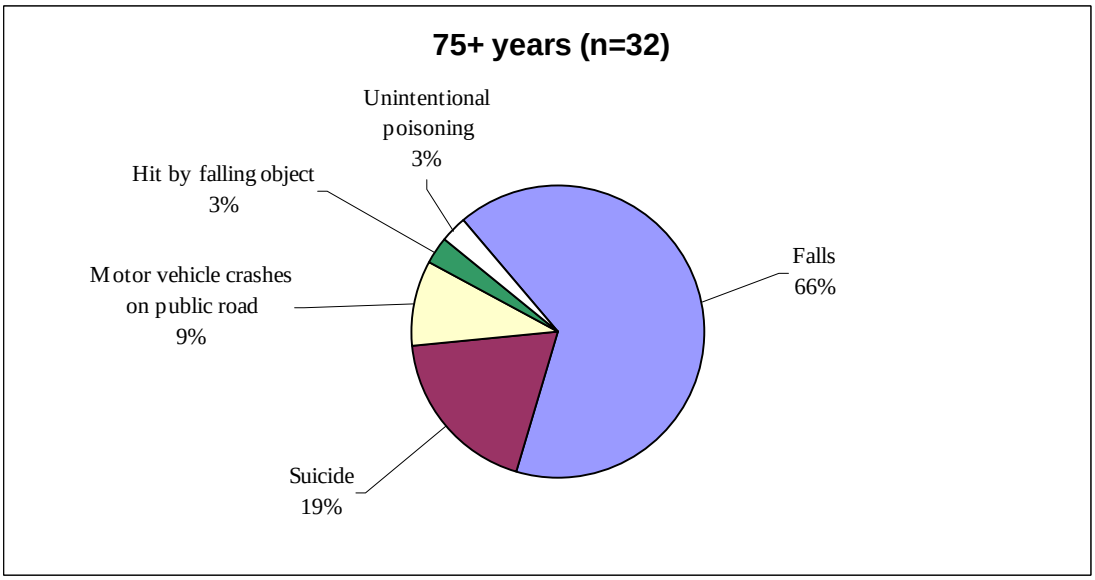
Figure nine shows that for people aged between 60-74 years of age, 44% of deaths were the result of suicide. Falls (22%) and motor vehicle crashes on a public road (22%) were the second leading causes of injury deaths, followed by drowning (6%) and hit by a falling object (6%).

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



For older people aged 75+, approximately two-thirds (66%) of the deaths were the result of falls (figure 10). The other leading causes of injury death were suicide (19%); motor vehicle crashes on a public road (9%); hit by a falling object (3%); and unintentional poisoning (3%).

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



3.2.1.2 Ethnic comparison

For the period 1996-1999, Maori had the highest age-standardised rate (37 deaths per 100,000 person years) of injury deaths, followed by Pacific peoples (21 deaths per 100,000 person years), and New Zealand European/Other (four deaths per 100,000 person years). Of the 112 people who died from injury, New Zealand European/Other accounted for the majority (91%); Maori accounted for 8%; and Pacific peoples accounted for 1%.

Figure 11 gives a breakdown of injury death rates by ethnicity and age group. New Zealand European/Other ethnic groups had the highest injury death rates (149 deaths per 100,000 person years) in the older age groups (75+). Maori had the highest rate (249 deaths per 100,000 person years) of injury death for age group 15-24 years. There was only one death for Pacific peoples during the period of 1996-1999.

Figure 11: Injury mortality rates by ethnicity and age group for Rodney District, 1996-1999

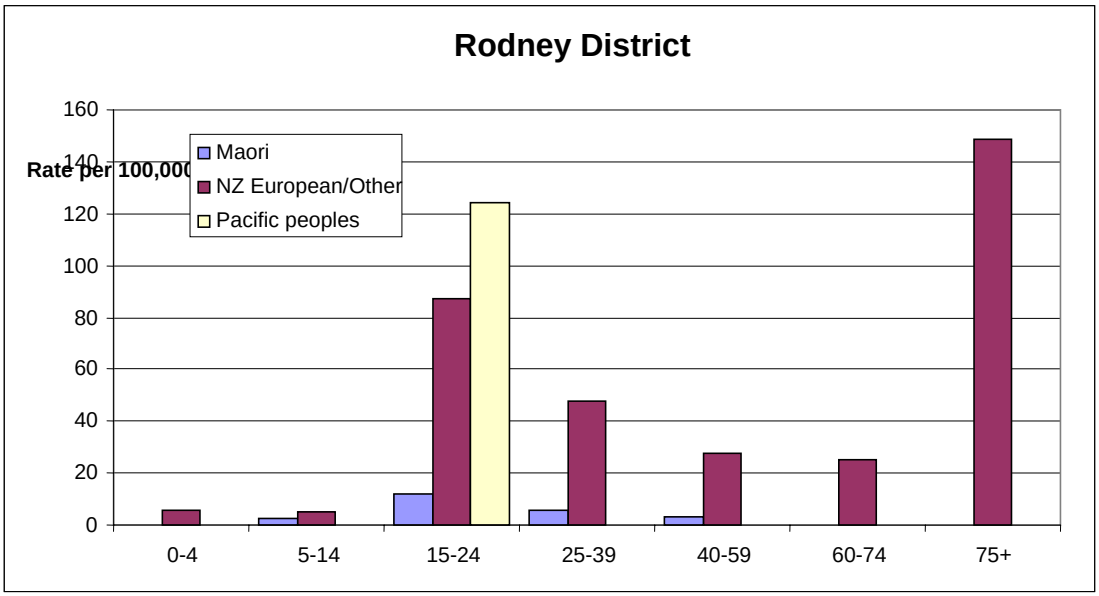


Table four shows that the leading cause of injury death for New Zealand European/Other was suicide (36%); for Maori 44% motor vehicle crashes on a public road; and the only death for Pacific peoples was a motor vehicle crash on a public road.

Table 4: Ethnic comparison of leading causes of injury mortality, 1996-1999

Maori (n=9)		**NZ European/Other (n=102)**		**Pacific peoples (n=1)**	
Cause	**%**	**Cause**	**%**	**Cause**	**%**
Motor vehicle crashes on public road	44	Suicide	36	Motor vehicle crashes on public road	100
Suicide	33	Motor vehicle crashes on public road	33		
Falls	11	Falls	16		
Vehicle crashes off public road	11	Homicide	3		

3.2.1.3 Comparison by Ward

The Ward comparison in figure 12 shows that Western Ward had the highest rate of injury death, while Eastern Ward had the lowest rate.

Figure 12: Age-standardised injury mortality rates by Ward for Rodney District, 1993-1999

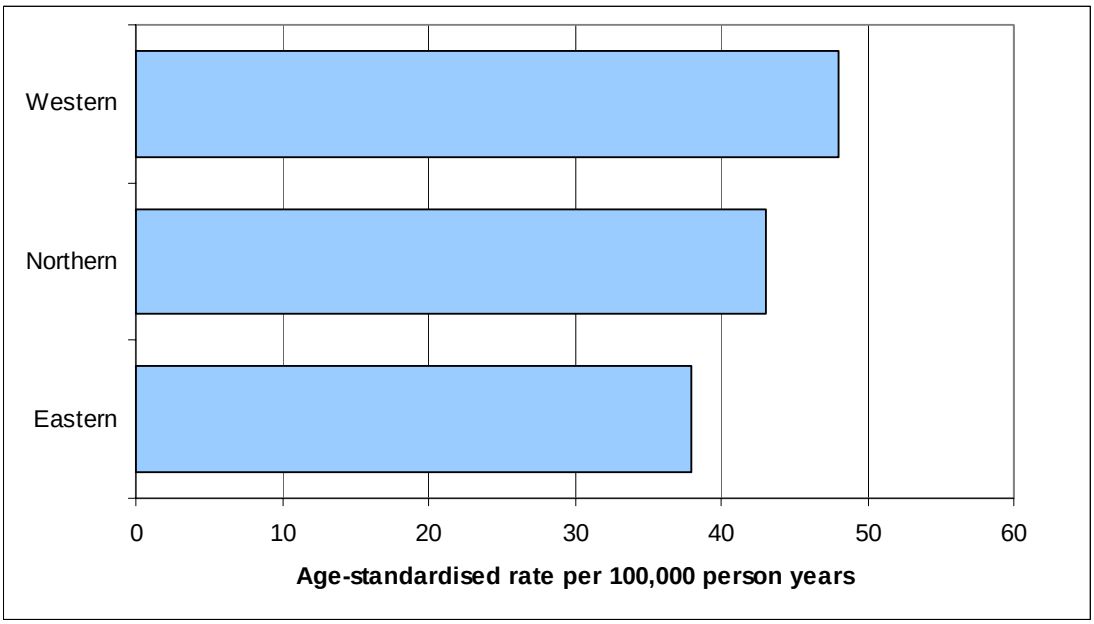
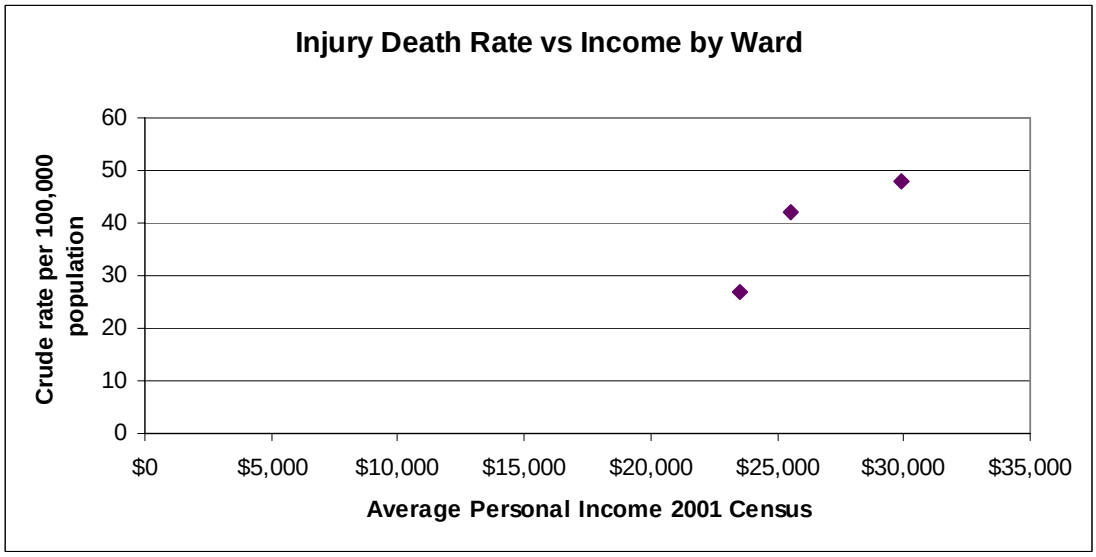


Figure 13 shows a plot of the crude injury deaths rate for each Ward, graphed against the average personal income for each Ward. The graph shows that the crude injury death rate increased as the average personal income increased. However the plot should be interpreted with caution, as there are only three points in the graph.

Figure 13: Relationship between injury mortality rate and income on a Ward basis

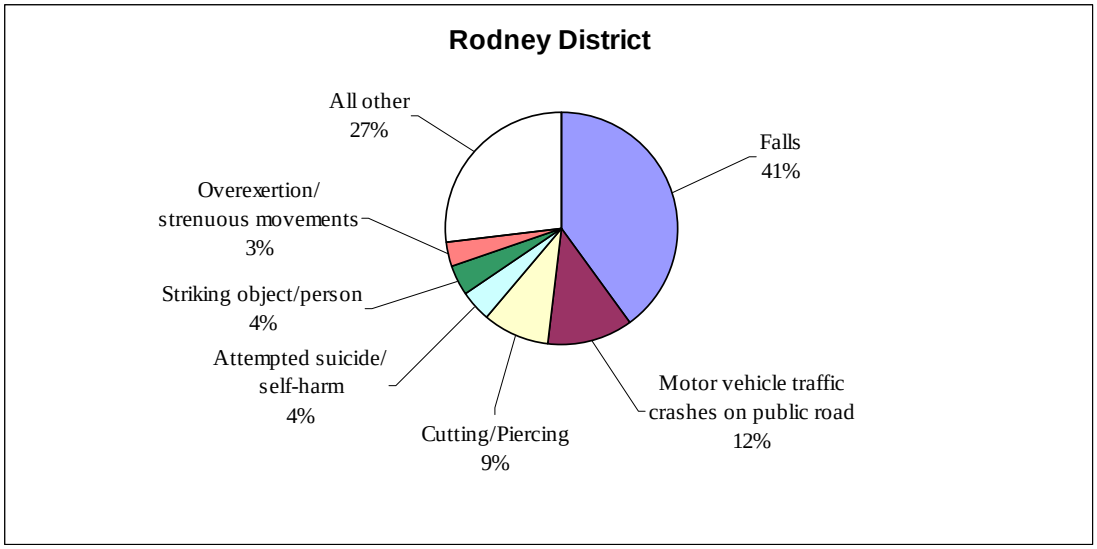


3.2.2 NZHIS injury morbidity 1993-2003

Between 1993 and 2003, 8,321 residents of Rodney District were hospitalised for injury. The crude injury morbidity rate during this period was 1,083 injury hospitalisations per 100,000 person years. Males accounted for over half (59%) of the injury hospitalisations.

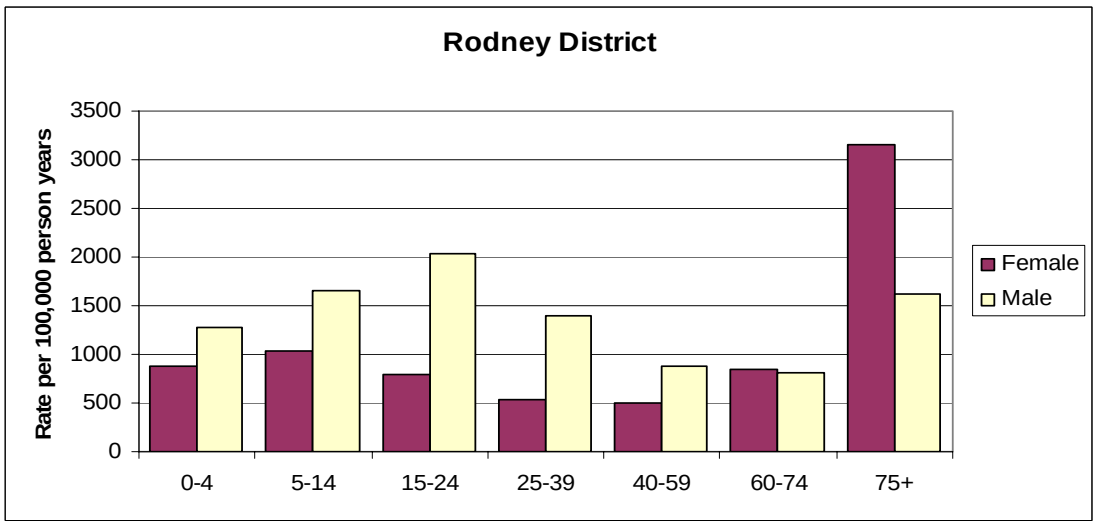
Figure 14 shows that the leading cause of injury hospitalisation was falls (41%). The other leading causes of injury were motor vehicle traffic crashes on a public road (12%); cutting and piercing (9%); attempted suicide/deliberate self-harm (4%); striking an object or person (4%); and overexertion or strenuous movements (3%).

Figure 14: Rodney District - Leading causes of injury hospitalisations 1993-2003



As shown by figure 15, for females, the 75+ age group had the highest rates (3,158 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 5-14 years (1,038 hospitalisations per 100,000 person years). For males, the 15-24 age group had the highest rates (2,037 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 5-14 years (1,659 hospitalisations per 100,000 person years). Males had higher rates of injury across all age groups below the age of 60.

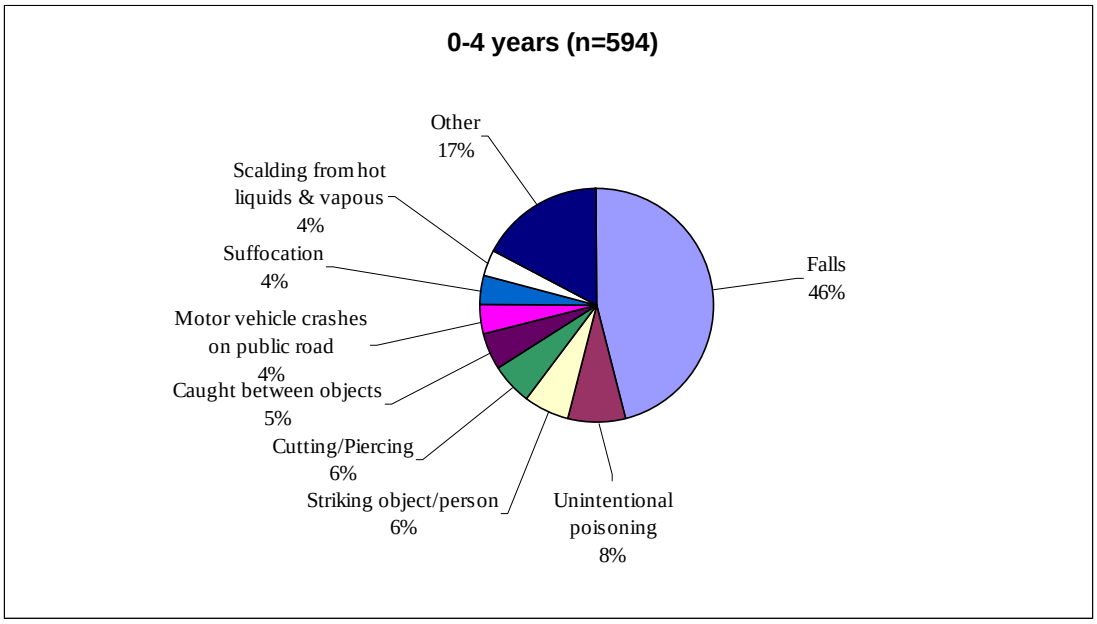
Figure 15: Rates of injury hospitalisation by age and gender, 1993-2003



3.2.2.1 Leading causes of injury morbidity by age group

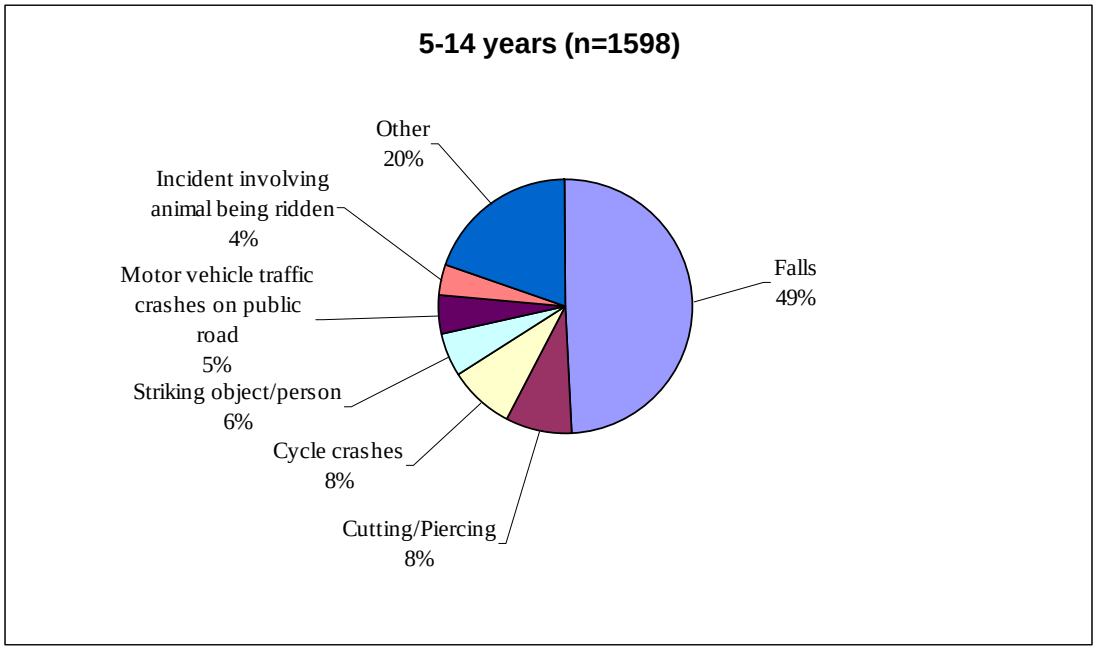
Figure 16 shows that for 0-4 year olds, falls (46%) were the leading cause of injury hospitalisation. The other leading causes of injury hospitalisations were unintentional poisoning (8%); striking an object or person (6%); cutting and piercing (6%); caught between objects (5%); motor vehicle crashes on a public road (4%); suffocation (4%); and scalding from hot liquids and vapours (4%).

Figure 16: Leading causes of injury morbidity for 0-4 year olds, 1993-2003



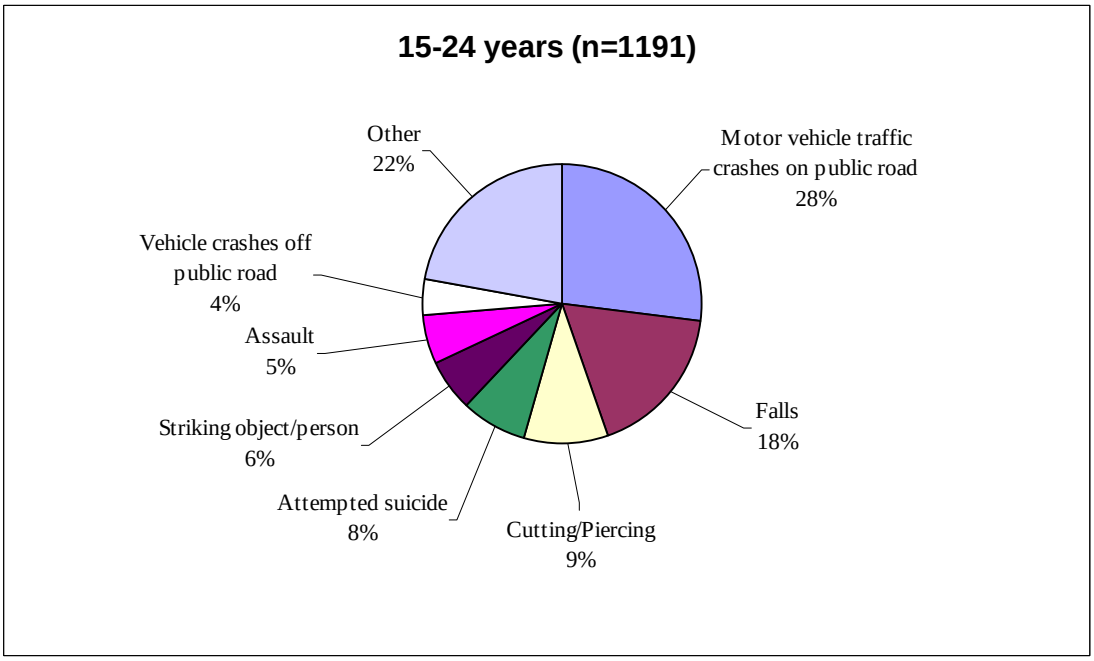
For 5-14 year olds, falls accounted for approximately half (49%) of the injury hospitalisations (figure 17). The other leading causes were cutting and piercing (8%); cycle crashes (8%); striking an object or person (6%); motor vehicle crashes on a public road (5%); and an incident involving an animal being ridden (4%).

Figure 17: Leading causes of injury hospitalisation for 5-14 year olds, 1993-2003



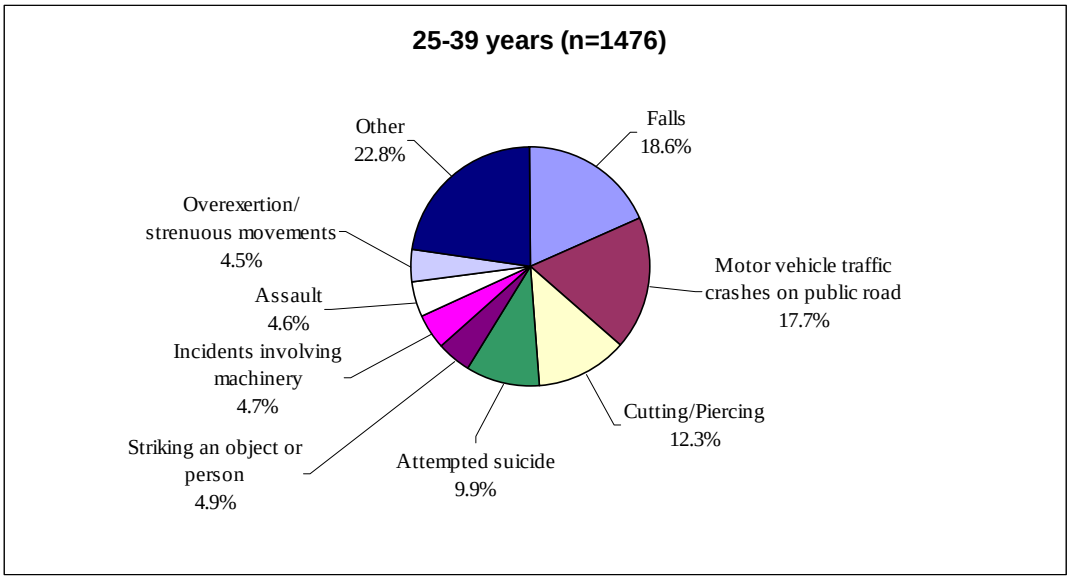
For 15-24 year olds, motor vehicle crashes on a public road were the leading cause of injury hospitalisation (28%), followed by falls (18%) (see figure 18). The other leading causes were attempted cutting and piercing (9%); suicide (8%); striking a person or object (6%); assault (5%); and vehicle crashes off public roads (4%).

Figure 18: Leading causes of injury hospitalisation for 15-24 year olds, 1993-2003



For 25-39 year olds, falls (19%) were the leading cause of injury hospitalisation (figure 19). The other leading causes were motor vehicle crashes on a public road (18%); cutting and piercing (12%); attempted suicide (10%); striking a person or object (5%); incidents involving machinery (5%); assault (5%); and overexertion or strenuous movements (5%).

Figure 19: Leading causes of injury hospitalisation for 25-39 year olds, 1993-2003



For 40-59 year olds, falls (26%) were the leading cause of injury hospitalisation (Figure 20). The other leading causes were cutting and piercing (13%); motor vehicle crashes on a public road (13%); attempted suicide (7%); incidents involving machinery (6%); and overexertion and strenuous movements (6%).

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

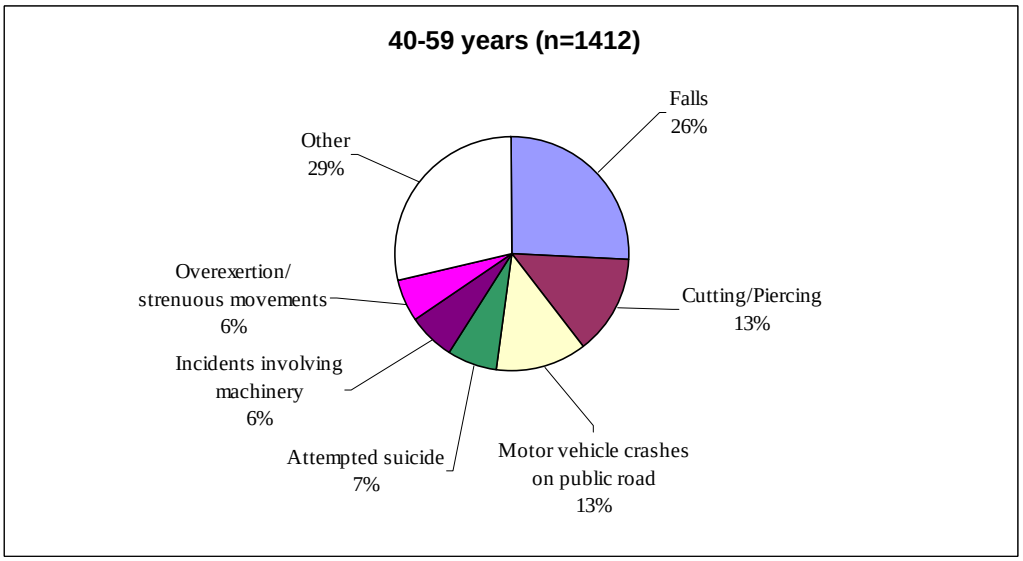
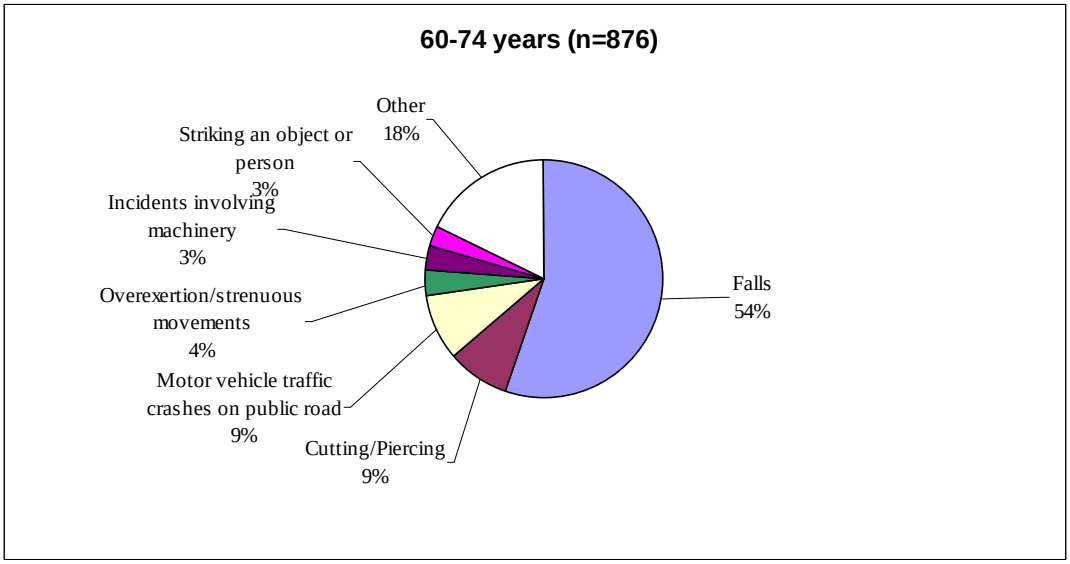


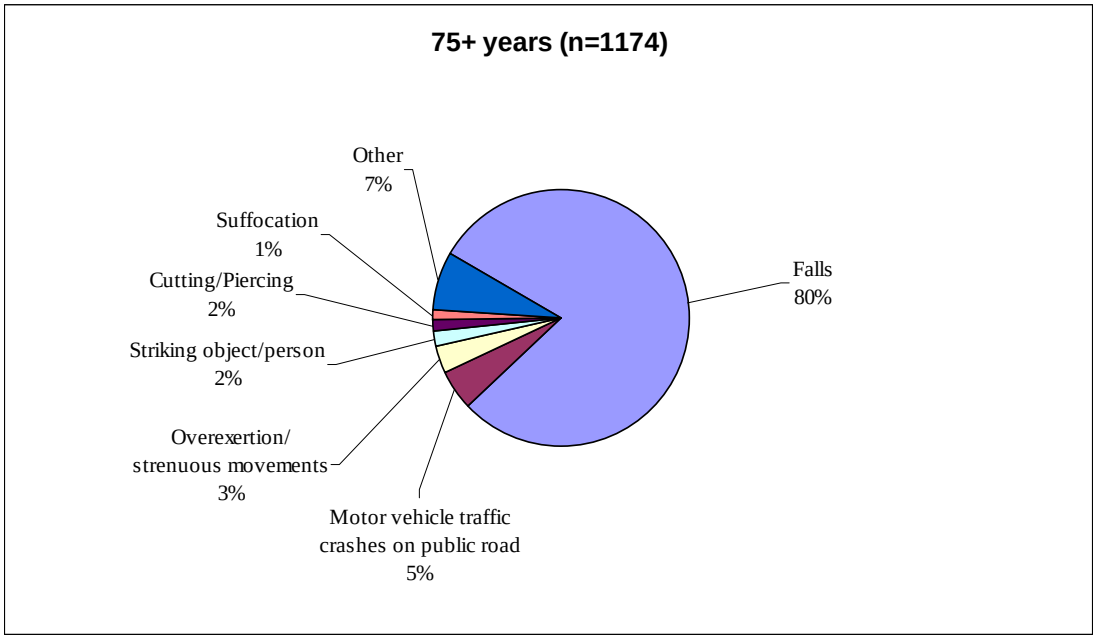
Figure 21 shows that for 60-74 year olds, falls were the leading cause of injury hospitalisation, accounted for 54% of the injuries. The other leading causes were cutting and piercing (9%); motor vehicle crashes on a public road (9%); overexertion and strenuous movements (4%); incidents involving machinery (3%); and striking an object or person (3%).

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



For 75+ year olds, falls (80%) were the leading cause of injury hospitalisation (figure 22). The other leading causes were motor vehicle crashes on a public road (5%); overexertion and strenuous movement (3%); striking an object or person (2%); cutting and piercing (2%); and suffocation (1%).

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



3.2.2.2 Ethnic comparison

For the period 2001-2003, Maori had the highest age-standardised rate of hospitalised injuries (1,231 per 100,000 person years), followed by New Zealand European/Other (1,156 per 100,000 person years), and Pacific peoples (560 per 100,000 person years). New Zealand European/Other accounted for the majority (91%) of the injury hospitalisations, Maori accounted for 9%, and Pacific peoples accounted for 1%.

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 (2,866 hospitalisations per 100,000 person years) in the older age group (75+). For Maori, those aged 15-24 years tended to have the highest rate (1,768 hospitalisations per 100,000 person years) of injury. Pacific peoples aged 25-39 years also had the highest rate (801 hospitalisations per 100,000 person years) of injury hospitalisation.

Figure 23: Injury hospitalisation rates by ethnicity and age group for Rodney District, 2001-2003

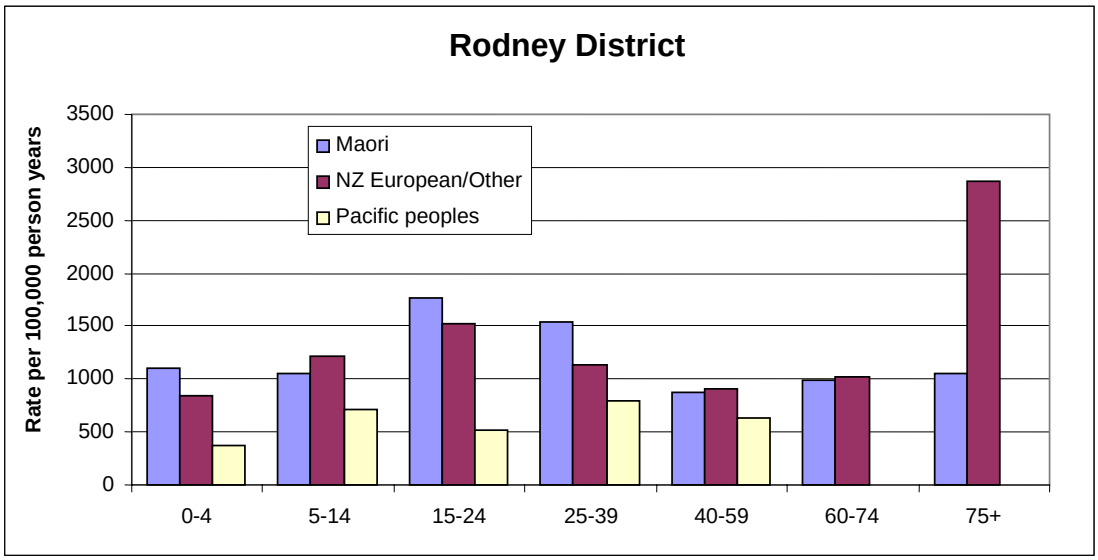


Table five shows that the leading causes of injury hospitalisation during the period 2001-2003 was similar across all ethnic groups. However, a higher percentage of New Zealand European/Other were injured by falls (38%), compared to other ethnic groups, and Maori had a higher proportion of injuries caused by motor vehicle crashes on a public road (13%). Injuries caused by being caught between objects only featured as a leading cause of injury hospitalisation for Pacific peoples (9%).

Table 5: Ethnic comparison of leading causes of injury morbidity, 2001-2003

Maori (n=241)		**NZ European/Other (n=2560)**		**Pacific peoples (n=23)**	
Cause	**%**	**Cause**	**%**	**Cause**	**%**
Falls	26	Falls	38	Falls	26
Motor vehicle crashes on public road	13	Motor vehicle crashes on public road	10	Cutting/Piercing	13
Cutting/Piercing	12	Cutting/Piercing	8	Others/unspecified	13
Overexertion/ strenuous movements	7	Attempted suicide/ self-harm	6	Caught between objects	9
Assault	7	Overexertion/ strenuous movements	5	Cycle crashes	9

3.2.2.3 Comparison by Ward

The comparison of Ward rates in figure 24 shows that Northern Ward had the highest rate of injury hospitalisation, while Eastern Ward had the lowest.

Figure 24: Age-standardised injury hospitalisation rates by Ward for Rodney District, 1993-2003

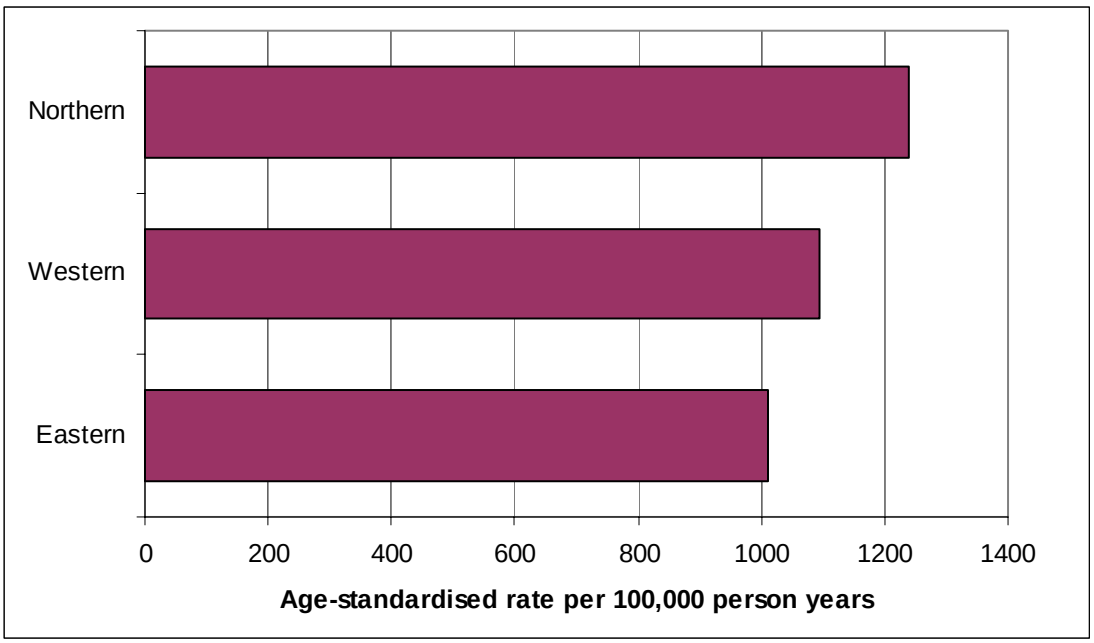
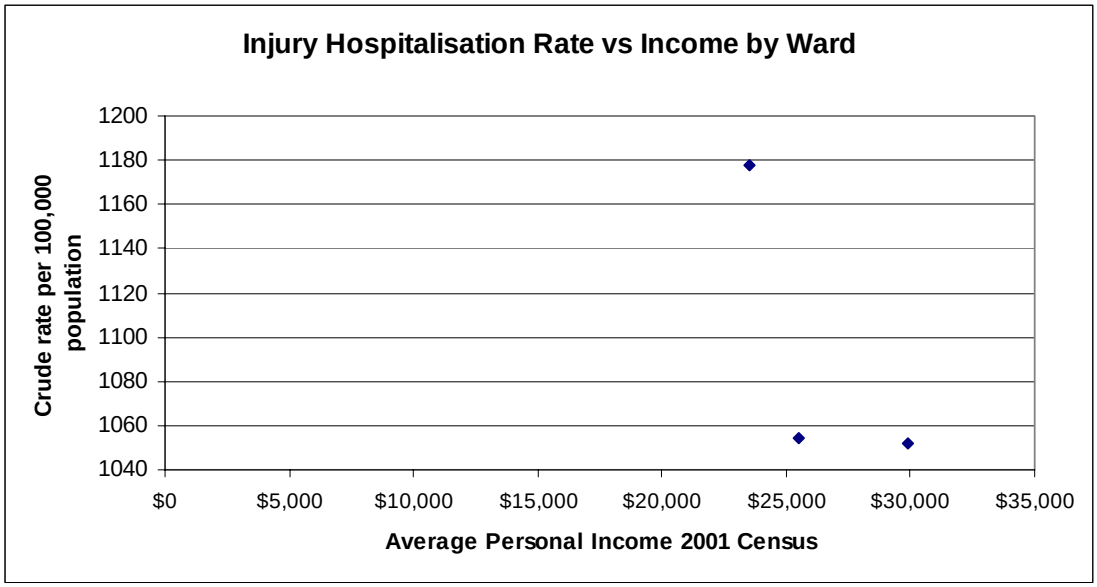


Figure 25 shows a plot of the crude injury hospitalisation rate for each Ward, graphed against the average personal income for each Ward. The graph shows that there was no obvious trend in the relationship between the crude injury hospitalisation rate and the average personal income. Note that the plot should be interpreted with caution, as there are only three points in the graph.

Figure 25: Relationship between injury hospitalisation rate and income on a Ward Basis



4.0 Eastern Ward

4.1 Demographics

This section provides information relating to population, age, ethnicity and income for the Eastern Ward.

Table 6: Eastern Ward- Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	2154	7	1878	7	900	4
NZ European/Other	30447	93	26328	95	21210	97
Pacific peoples	477	1	414	1	171	1
Total Persons≈	32646	101	27846	103	21945	102

* 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.

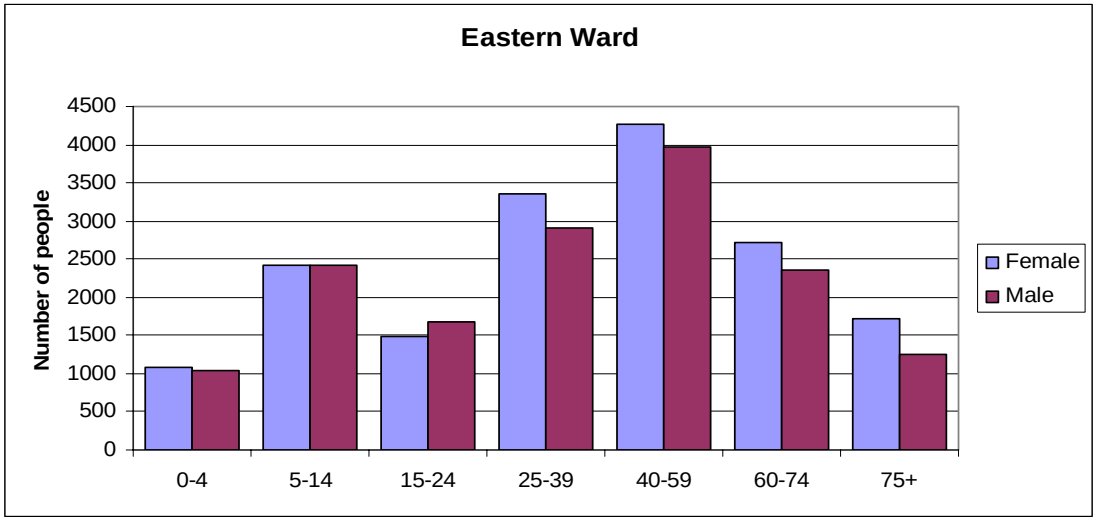
Table 7: Eastern Ward - Age composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	6	7	7
5-14	15	14	12
15-24	10	10	12
25-39	19	21	21
40-59	25	23	21
60-74	16	17	19
75+	9	8	7

Table 8: Eastern Ward- Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning> $30,000	5196	58
Personal incomes > $30,000	7062	28
Average per capita personal income	$25,501	

Figure 26: Eastern Ward- Age distribution by gender in 2001 Census



4.2 Injury statistics

4.2.1 NZHIS injury mortality 1993-1999

Between 1993 and 1999, 82 residents of the Eastern Ward died as the result of receiving an injury. This is equivalent to a crude injury rate of 42 injury deaths per 100,000 person years. Males accounted for 70% of the fatalities.

As can be seen in Figure 27, suicide was the leading cause of injury death (33%). The other leading causes of injury death were falls (29%); motor vehicle crashes on a public road (28%); and suffocation (2%).

Figure 27: Eastern Ward- Leading causes of injury mortality 1993-1999

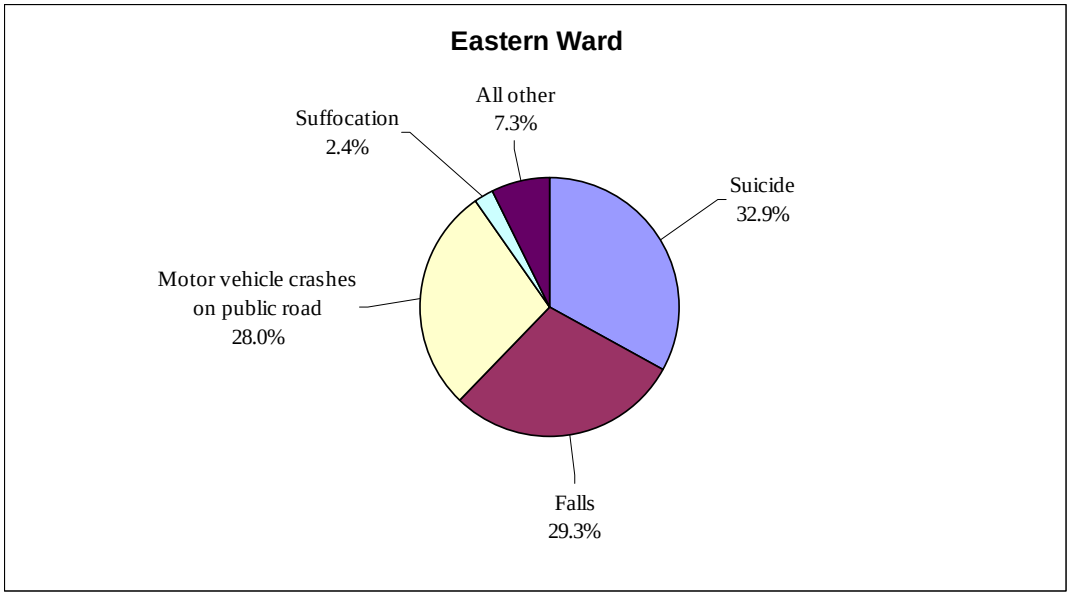
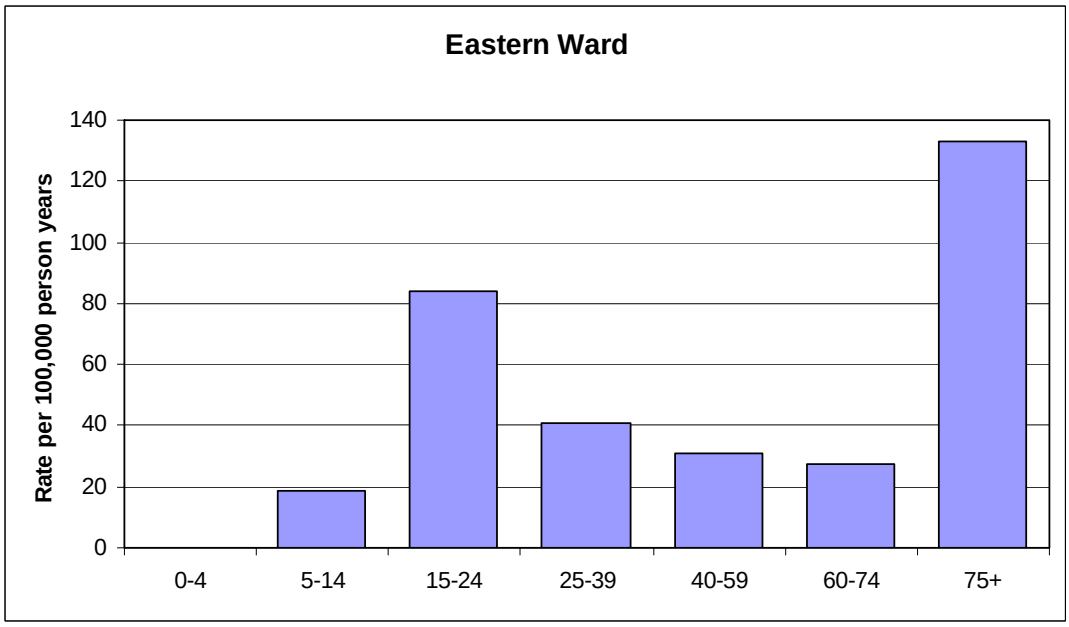


Figure 28 shows that the 75+ age group had the highest rate (133 deaths per 100,000 person years) of injury death, followed by young people aged 15-24 years (84 deaths per 100,000 person years).

Figure 28: Rates of injury mortality by age group, 1993-1999



Of the 43 people who died from injury between 1996 and 1999, 40 (93%) were New Zealand European/Other, two (5%) were Maori, and one (2%) was Pacific.

4.2.2 NZHIS injury hospitalisations 1993-2003

Between 1993 and 2003, 3417 residents of the Eastern Ward were hospitalised after receiving an injury. The crude injury hospitalisation rate during this period was 1054 injury hospitalisations per 100,000 person years. Males accounted for 55% of the hospitalisations.

Figure 29 shows that falls accounted for the greatest number of injury hospitalisations (48%). The other leading causes of injury were motor vehicle traffic crashes on a public road (10%); cutting and piercing (8%); attempted suicide/deliberate self-harm (5%); striking an object or person (4%); and overexertion or strenuous movements (3%).

Figure 29: Eastern Ward- Leading causes of injury hospitalisations 1993-2003

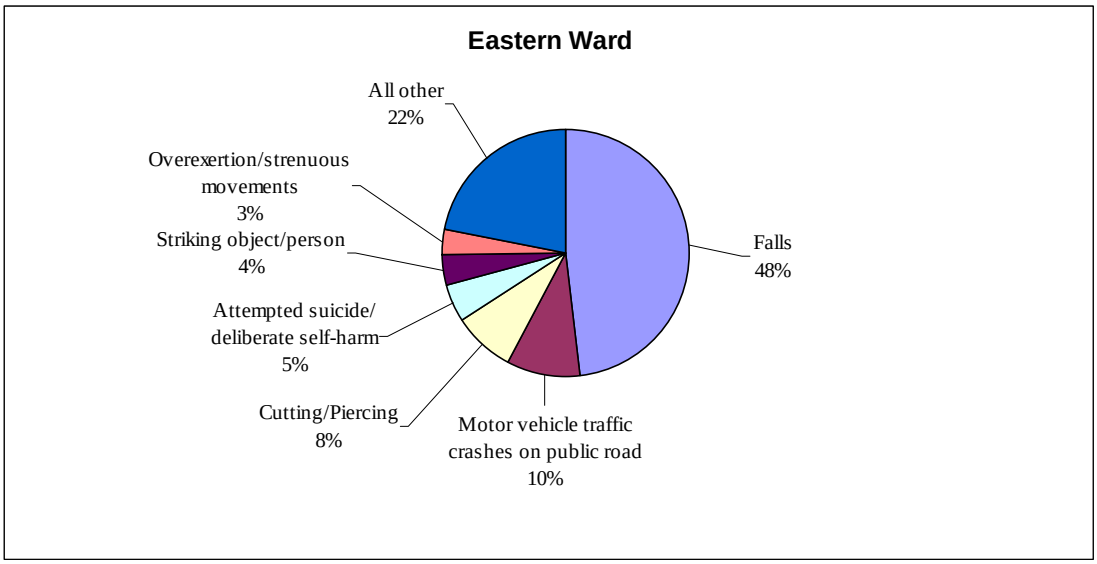


Figure 30 shows females aged 75+ had the highest rate (3,174 hospitalisations per 100,000 person years) of injury hospitalisation, followed by school children aged 5-14 years (970 hospitalisations per 100,000 person years). For males, the 15-24 age group had the highest rate (1,909 hospitalisations per 100,000 person years) of injury hospitalisation, followed by adults aged 75+ years (1,641 hospitalisations per 100,000 person years). Males had higher rates of injury hospitalisation than females across all age groups under 60.

Figure 30: Rates of injury hospitalisation by age and gender, 1993-2003

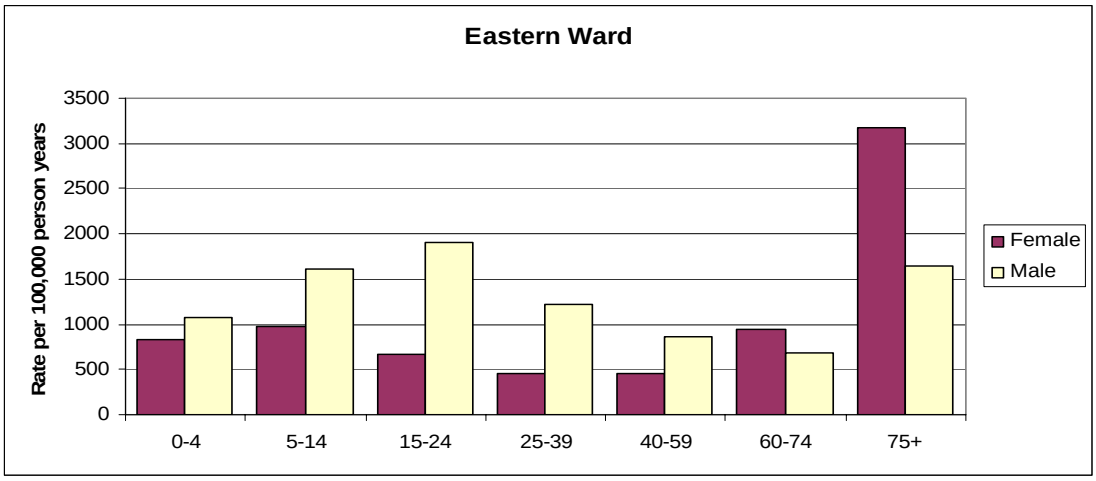


Figure 31 shows that for the period 2001-2003, Maori had the highest rate of hospitalised injury (1,174 injury hospitalisations per 100,000 person years), followed by New Zealand European/Other (1,070 injury hospitalisations per 100,000 person years) and Pacific peoples (596 injury hospitalisations per 100,000 person years). New Zealand European/Other accounted for the majority (93%) of the injuries.

Figure 31: Injury hospitalisation rates by ethnicity for Eastern Ward, 2001-2003

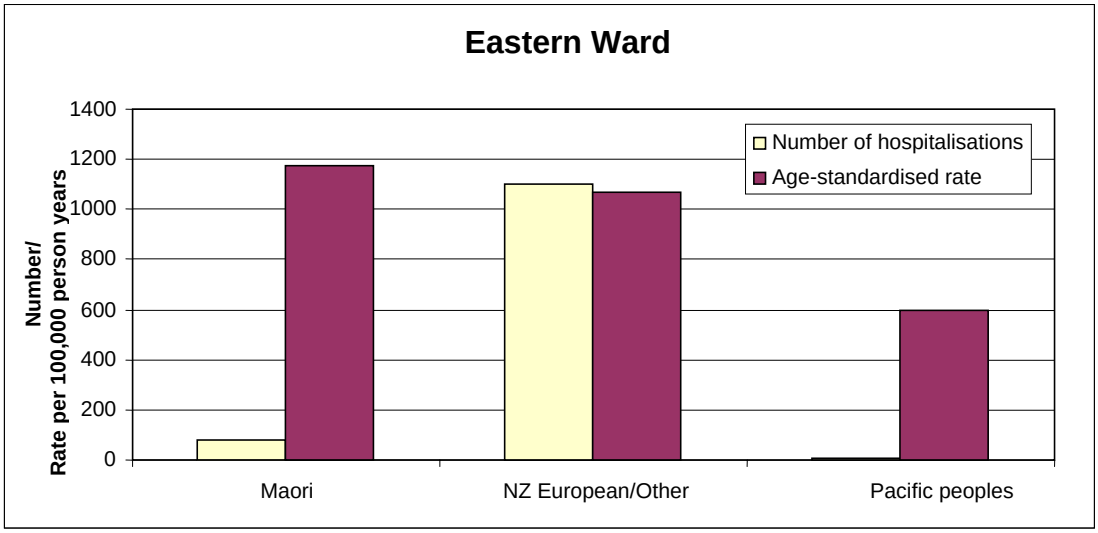


Table 9 shows that for the period of 2001-2003, falls were the leading causes of injury hospitalisation for all ethnic groups, however New Zealand European/Other had the highest percentage (46%) of hospitalised falls. A higher proportion of Pacific peoples were hospitalised as a result of cutting and piercing (11%). Maori had a higher percentage of injuries caused by assault (11%).

Table 9: Ethnic comparison of leading causes of injury hospitalisation, 2001-2003

Maori (n=79)		**NZ European/Other (n=1100)**		**Pacific peoples (n=9)**	
Cause	**%**	**Cause**	**%**	**Cause**	**%**
Falls	28	Falls	46	Falls	22
Assault	11	Attempted suicide	8	Cutting/Piercing	22
Motor vehicle crashes on public road	10	Motor vehicle crashes on public road	8	Cycle crashes	11
Overexertion/ strenuous movements	9	Cutting/Piercing	7	Incidents involving machinery	11
Attempted suicide	9	Overexertion/ strenuous movements	5	Motor vehicle crashes on public road	11
Cutting/Piercing	8	Striking an object or person	3	Overexertion/ strenuous movements	11
Striking an object or person	5	Assault	3	Striking an object or person	11

5.0 Northern Ward

5.1 Demographics

This section provides information relating to population, age, ethnicity and income for Rodney District.

Table 10: Northern Ward - Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	1833	10	1659	10	1251	9
NZ European/Other	16113	90	14661	91	13290	93
Pacific peoples	255	1	258	2	132	1
Total Persons≈	17991	101	16023	103	14238	103

* 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.

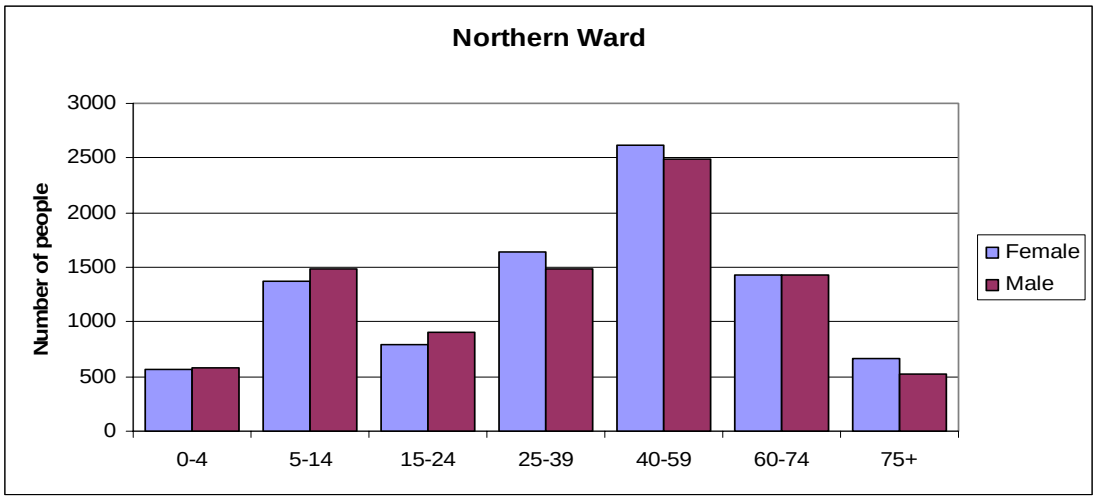
Table 11: Northern Ward - Age composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	6	7	8
5-14	16	15	16
15-24	9	10	12
25-39	17	19	20
40-59	28	27	24
60-74	16	16	16
75+	7	6	5

Table 12: Northern Ward - Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning> $30,000	2664	53
Personal incomes > $30,000	3249	23
Average per capita personal income	$25,351	

Figure 32: Northern Ward - Age distribution by gender in 2001 Census



5.2 Injury statistics

5.2.1 NZHIS injury mortality 1993-1999

Between 1993 and 1999, 49 residents of the Northern ward died as the result of receiving an injury. This is equivalent to a crude injury rate of 27 injury deaths per 100,000 person years. Males accounted for 80% of the fatalities.

As can be seen in Figure 33, motor vehicle crashes on a public road were the leading cause of injury death (41%). The other leading causes of injury death were suicide (33%), falls (8%), and unintentional poisoning (6%).

Figure 33: Northern Ward - Leading causes of injury mortality 1993-1999

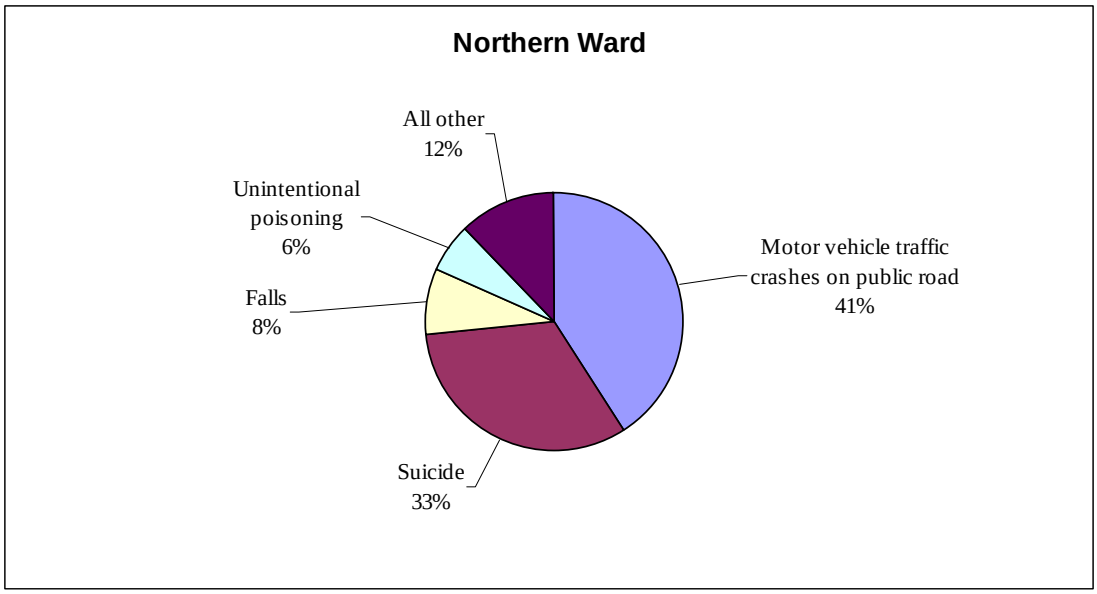
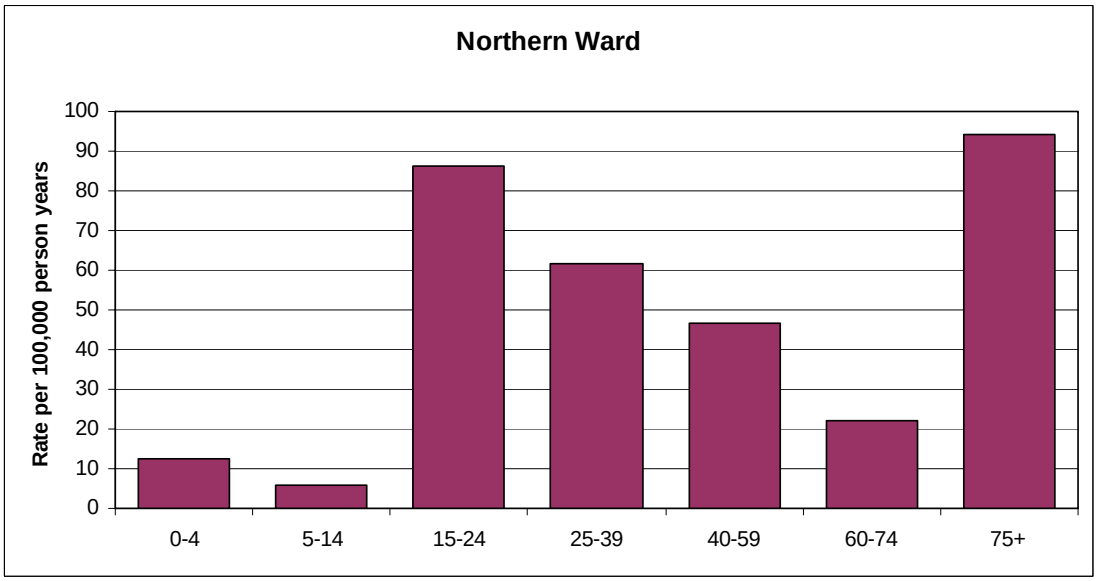


Figure 34 shows that the 75+ age group had the highest rate (94 deaths per 100,000 person years) of injury death, followed by age group of 15-24 years (86 deaths per 100,000 person years).

Figure 34: Rates of injury death by age group, 1993-1999



Of the 26 people who died from injury between 1996 and 1999, 22 (85%) were of New Zealand European/Other, and four were Maori (15%).

5.2.2 NZHIS injury hospitalisations 1993-2003

Between 1993 and 2003, 2173 residents of the Northern Ward were hospitalised after receiving an injury. The crude injury hospitalisation rate during this period was 1178 injury hospitalisations per 100,000 person years. Males accounted for 61% of the hospitalisations.

Figure 35 shows that falls accounted for the greatest number of injury hospitalisations (38%). The other leading causes of injury were motor vehicle traffic crashes on a public road (14%); cutting and piercing (9%); striking an object or person (5%); attempted suicide/deliberate self-harm (4%); and overexertion or strenuous movements (3%).

Figure 35: Northern Ward - Leading causes of injury hospitalisations 1993-2003

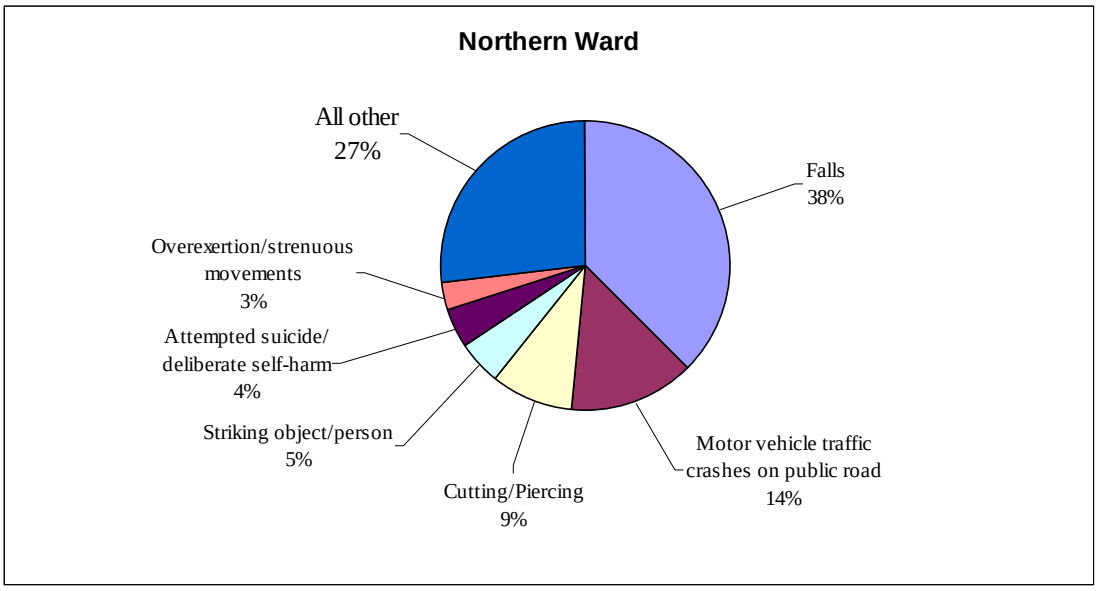


Figure 36 shows that for females, those aged 75+ had the highest rate (3,027 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 5-14 years (1,169 hospitalisations per 100,000 person years). For males, the 15-24 age group had the highest rate (2,672 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 5-14 years (1,801 hospitalisations per 100,000 person years). Males had higher rates of injury hospitalisation than females across all age groups under 75.

Figure 36: Rates of injury hospitalisation by age and gender, 1993-2003

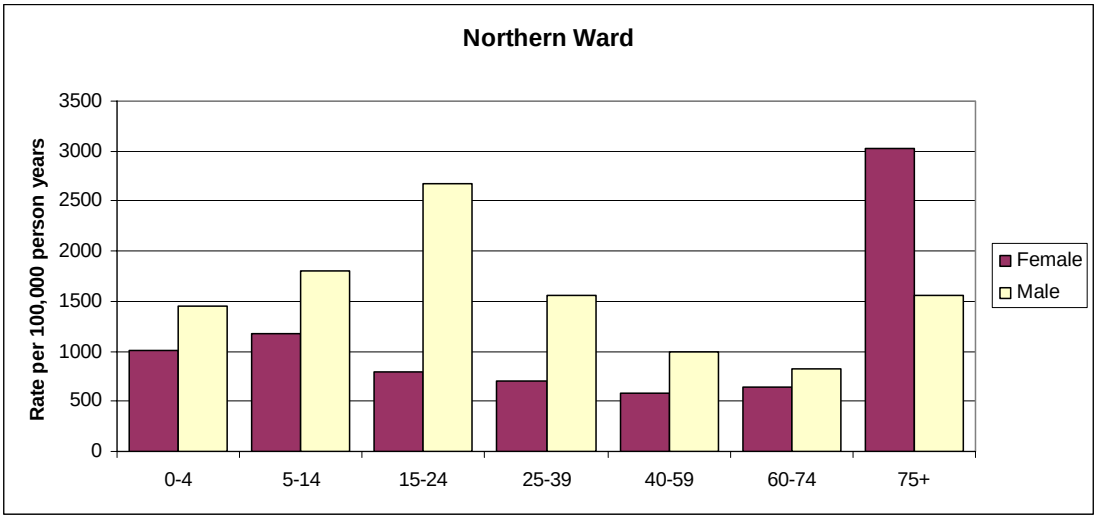


Figure 37 shows that for the period 2001-2003, Maori had the highest rate of hospitalised injury (1,537 injury hospitalisations per 100,000 person years), followed by New Zealand European/Other (1,267 injury hospitalisations per 100,000 person years) and Pacific peoples (537 injury hospitalisations per 100,000 person years). New Zealand European/Other accounted for the majority (87%) of the injuries.

Figure 37: Injury hospitalisation rates by ethnicity for Northern Ward, 2001-2003

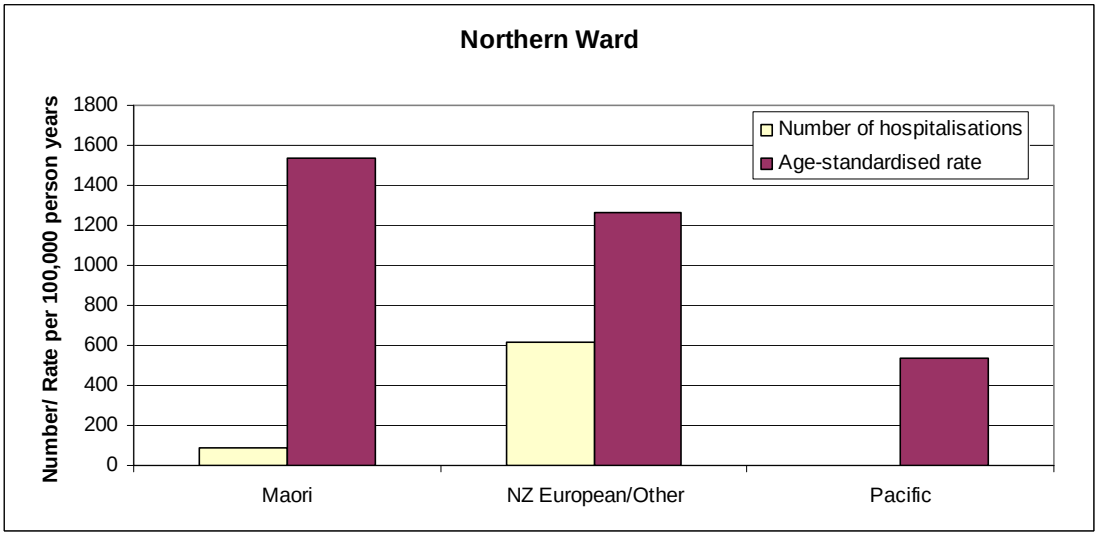


Table 13 shows that for the period of 2001-2003, falls were the leading cause of injury hospitalisations for New Zealand European/Other (37%), and Maori (30%). A higher proportion of Maori were injured as a result of motor vehicle crashes on a public road (17%). Four Pacific peoples were hospitalised as a result of injuries caused by a fall; caught between objects; cutting and piercing; and an unspecified injury.

Table 13: Ethnic comparison of leading causes of injury hospitalisations, 2001-2003

Maori (n=87)		**NZ European/Other (n=618)**		**Pacific people (n=4)**	
Cause	**%**	**Cause**	**%**	**Cause**	**%**
Falls	30	Falls	37	Falls	25
Motor vehicle crashes on public road	17	Motor vehicle crashes on public road	11	Caught between objects	25
Cutting/Piercing	10	Cutting/Piercing	9	Cutting/Piercing	25
Incidents involving machinery	7	Attempted suicide	6	Others/unspecified	25
Caught between objects	6	Overexertion/ strenuous movements	4		

6.0 Western Ward

6.1 Demographics

This section provides information relating to population, age, ethnicity and income for the Western Ward.

Table 14: Western Ward - Usually resident population

Population*	2001 Census	%	1996 Census	%	1991 Census	%
Maori	2337	9	2160	10	1431	8
NZ European/Other	23211	91	20877	92	17445	94
Pacific people	543	2	462	2	363	2
Total Persons≈	25542	102	22614	104	18630	104

* 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.

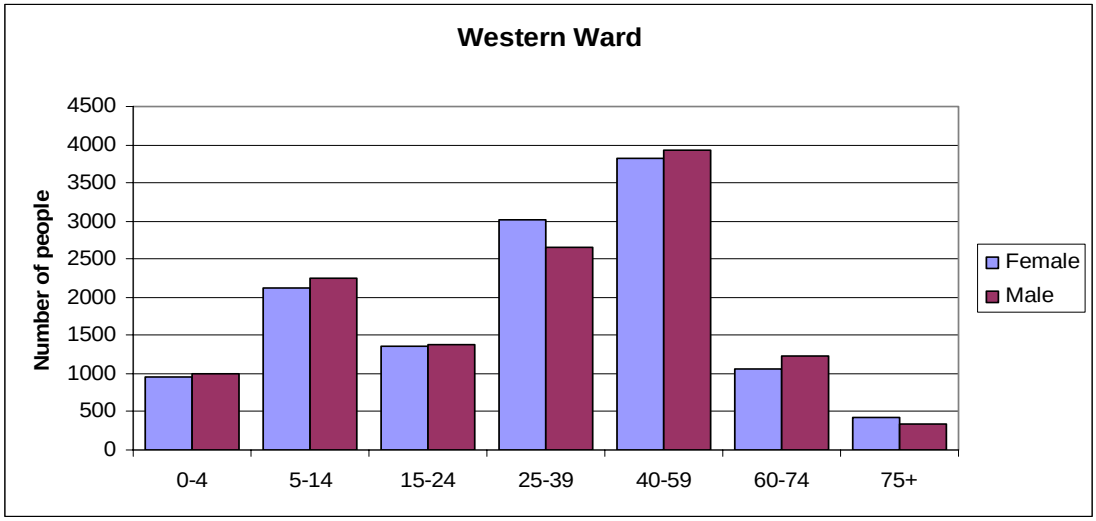
Table 15: Western Ward - age composition

Age Composition	2001 Census (%)	1996 Census (%)	1991 Census (%)
0-4	8	8	9
5-14	17	17	16
15-24	11	12	15
25-39	22	24	24
40-59	30	28	25
60-74	9	8	8
75+	3	3	2

Table 16: Western Ward - Household and personal income

Income	2001 Census – number	2001 Census (%)
Households earning> $30,000	4731	65
Personal incomes > $30,000	6864	34
Average per capita personal income	$29,901	

Figure 38: Western Ward - Age distribution by gender in 2001 Census



6.2 Injury statistics

6.2.1 NZHIS injury mortality 1993-1999

Between 1993 and 1999, 75 residents of the Western Ward died as the result of receiving an injury. This is equivalent to a crude injury rate of 48 injury deaths per 100,000 person years. Males accounted for 76% of the fatalities.

As can be seen in figure 39, motor vehicle crashes on a public road were the leading cause of injury death (48%). The other leading causes of injury death were suicide (24%); falls (5%); and homicide (4%).

Figure 39: Western Ward - Leading causes of injury mortality 1993-1999

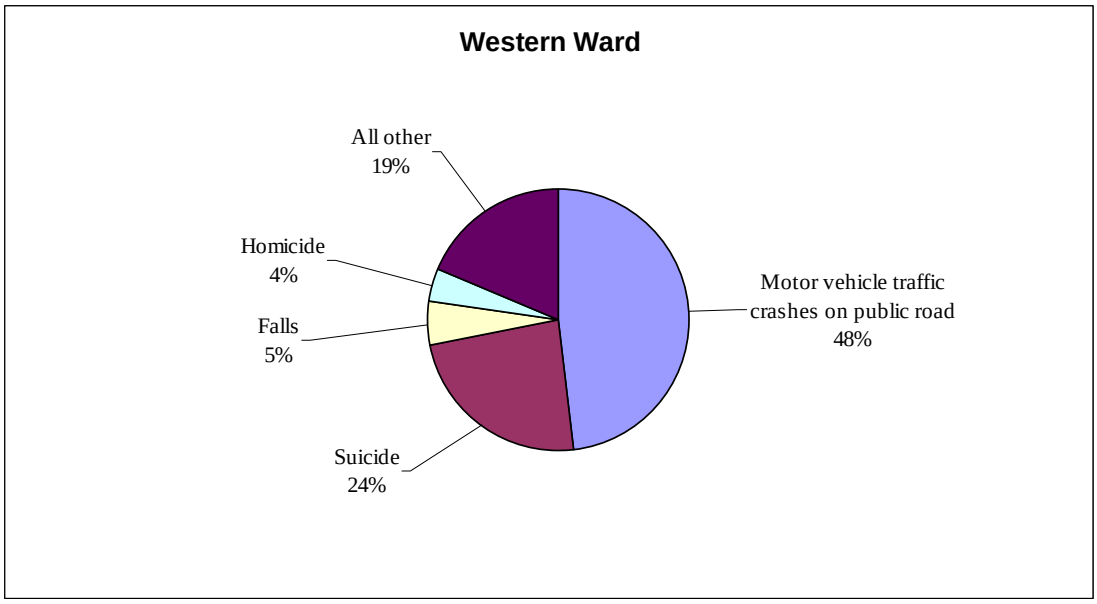
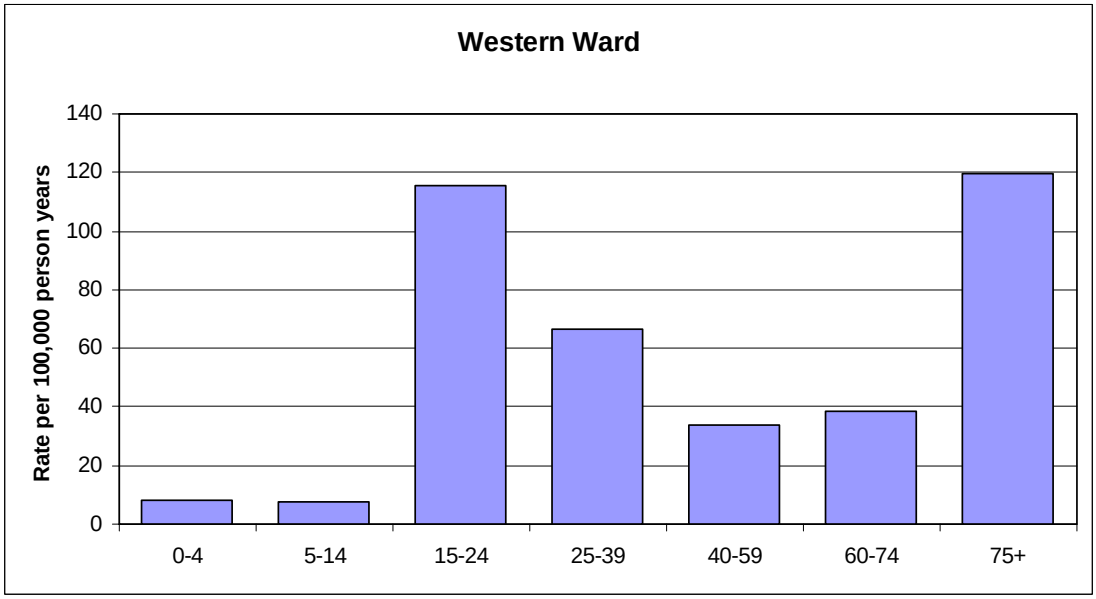


Figure 40 shows that the 75+ age group had the highest rate (119 deaths per 100,000 person years) of injury death, followed by young adults aged 15-24 years (115 deaths per 100,000 person years).

Figure 40: Rates of injury death by age group, 1993-1999



Of the 43 people who died from injury between 1996 and 1999, 40 (93%) were of New Zealand European/Other, and three (7%) were Maori.

6.2.2 NZHIS injury hospitalisations 1993-2003

Between 1993 and 2003, 2,731 residents of the Western Ward were hospitalised after receiving an injury. The crude injury hospitalisation rate during this period was 1052 injury hospitalisations per 100,000 person years. Males accounted for 63% of the hospitalisations.

Figure 41 shows that falls accounted for approximately one-third of injury hospitalisations (31%). The other leading causes of injury were motor vehicle traffic crashes on a public road (14%); cutting and piercing (10%); striking an object or person (5%); vehicle crashes off a public road (4%); incident involving animal being ridden (4%); and attempted suicide/deliberate self-harm (9%).

Figure 41: Western Ward - Leading causes of injury hospitalisations 1993-2003

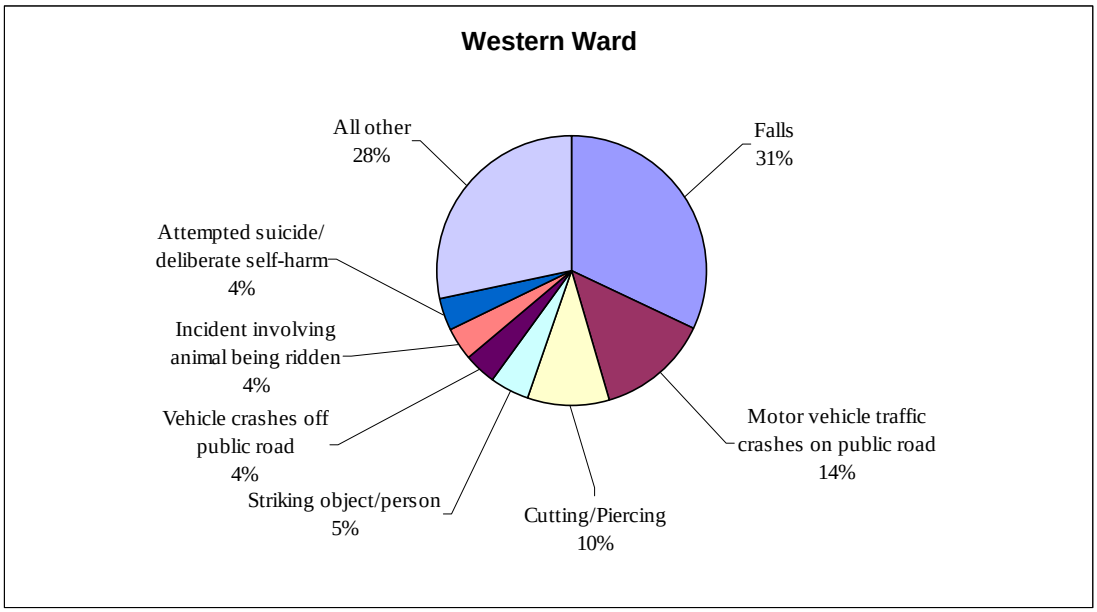


Figure 42 shows that for females, those aged 75+ had the highest rate (3,344 hospitalisations per 100,000 person years) of injury hospitalisation, followed by children aged 5-14 years (1,024 hospitalisations per 100,000 person years). For males, the age group of 15-24 years had the highest rate of injury hospitalisation (1,766 hospitalisations per 100,000 person years), followed by young people aged 5-14 years (1,613 hospitalisations per 100,000 person years). Males had higher rates of injury hospitalisation than females across all age groups under 75.

Figure 42: Rates of injury hospitalisation by age and gender, 1993-2001

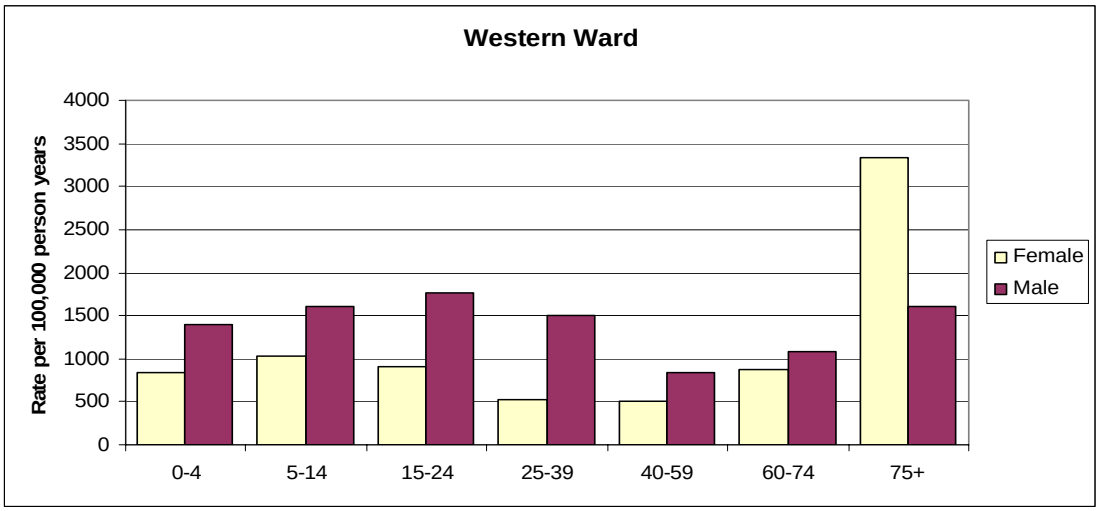


Figure 43 shows that for the period 2001-2003, New Zealand European/Other had the highest rate of hospitalised injury (1,209 injury hospitalisations per 100,000 person years), followed by Maori (1,013 injury hospitalisations per 100,000 person years) and Pacific people (545 injury hospitalisations per 100,000 person years). New Zealand European/Other accounted for the majority (91%) of the injuries.

Figure 43: Injury hospitalisation rates by ethnicity for Western Ward, 2001-2003

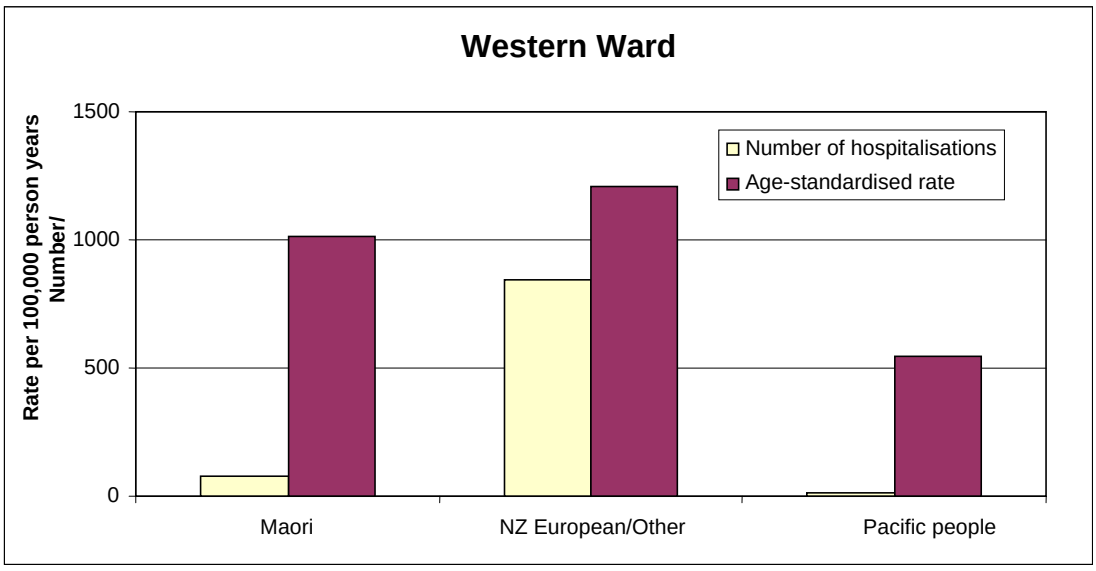


Table 17 shows that falls were the leading cause of injury hospitalisation for all ethnic groups during the period 2001-2003. Maori had a much higher proportion of cutting and piercing (17%) compared to other ethnic groups.

Table 17: Ethnic comparison of leading causes of injury hospitalisation, 2001-2003

Maori (n=75)		**NZ European/Other (n=842)**		**Pacific people (n=10)**	
Cause	**%**	**Cause**	**%**	**Cause**	**%**
Falls	20	Falls	29	Falls	30
Cutting/Piercing	17	Motor vehicle crashes on public road	12	Others/unspecified	20
Motor vehicle crashes on public road	12	Cutting/Piercing	10	Caught between objects	10
Others/unspecified	8	Vehicle crashes off public road	5	Cycle crashes	10
Overexertion/ strenuous movements	7	Incident involving animal being ridden	4	Non-road transport crashes	10
Non-road transport crashes	5	Overexertion/ strenuous movements	4	Striking an object or person	10
Incidents involving machinery	4	Attempted suicide	4	Attempted suicide	10

7.0 Key Findings

The data detailed in this report thus far indicates that injury is a significant cause of death and hospitalisation for people in Rodney District. The injury hospitalisation data discussed in sections three to six clearly indicates that falls; motor vehicle crashes on a public road; cutting and piercing injuries; suicidal behaviours; striking an object or person; and overexertion or strenuous movements are leading injury concerns for Rodney District. Motor vehicle traffic crashes; suicide or deliberate self-harm; and falls were the leading causes of injury deaths for Rodney District. Analysis of injury data by Ward shows that Northern Ward had the highest injury hospitalisation rate, whereas Western Ward had the highest injury death rate. Eastern Ward had consistently the lowest injury death and injury hospitalisation rates.

In addition to those aged 75+ years, who had the highest rates of injury hospitalisations, other age groups at high risk of injury hospitalisations were children and adults aged under 40 years (particularly males). During 2001-2003 period, New Zealand European/Other and Maori of all ages were more likely to be hospitalised following an injury than Pacific peoples. Falls were the leading cause of injury hospitalisation for all ethnic groups. Overall, New Zealand European/Other accounted for the majority (91%) of injury hospitalisations; Maori accounted for 9%; and Pacific people accounted for 1%.

For injury deaths, other than those aged 75+ years who had the highest rates of injury deaths, young people 15-24 years had the second highest injury death rates, followed by adults aged between 25-39 years. In general, New Zealand European/Other were more likely to have higher injury death rates compared to Maori for all age groups. Only one Pacific person died as a result of injury during the period of 1996-1999. It is of concern that Maori and New Zealand European/Other had a high proportion of injury deaths as a result of suicide and motor vehicle crashes on a public road. Overall, New Zealand European/Other accounted for the majority of injury deaths (91%), Maori accounted for one-quarter (8%), and Pacific people accounted for 1%.

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