

Injury Prevention Panacea or Crock?

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847,740 New Zealand Children

Unintentional External Injury Codes

ICD 10 – NZHIS data

- Crash (Motor vehicle crashes)
- Drop (Falls)
- Drown
- Pierce / Cut
- Burn
- Catch in between / Crush



Injury Prevention Risk Management

Injuries are not Accidents



Injury Prevention Theory

Dr William Haddon USA National Highway Traffic Safety Administration, Insurance Institute for Highway safety

- Unintentional Injuries are all not 'accidents' or the result of random events
- Injuries have distinct patterns and circumstances that characterise their occurrence
- It is possible to predict the occurrence of injuries



Motor Vehicle Traffic Crashes as a Leading Cause of Death in the United States for 2000, by Age Group



National Center for Statistics & Analysis

R A N K	Deaths Due to Causes by Age Groups**											Years of Life Lost ¹
	Infants Under 1	Toddlers 1-3	Young Children 4-7	Children 8-15	Youth 16-20	Young Adults 21-24	Other Adults			Elderly 65+	All Ages	
							25-34	35-44	45-64			
1	Perinatal Period 13,918	Congenital Anomalies 447	MV Traffic Crashes 967	MV Traffic Crashes 1,661	MV Traffic Crashes 5,873	MV Traffic Crashes 3,982	MV Traffic Crashes 6,756	Malignant Neoplasms 16,520	Malignant Neoplasms 137,039	Heart Disease 593,707	Heart Disease 710,760	Malignant Neoplasms 23% (8,468,700)
2	Congenital Anomalies 5,743	MV Traffic Crashes 430	Malignant Neoplasms 426	Malignant Neoplasms 827	Homicide 2,476	Homicide 2,365	Suicide 4,792	Heart Disease 13,181	Heart Disease 96,879	Malignant Neoplasms 392,366	Malignant Neoplasms 553,091	Heart Disease 22% (8,091,669)
3	Other 3,639	Accidental Drowning 427	Smoke Exposure 202	Suicide 489	Suicide 1,911	Suicide 1,900	Homicide 4,274	MV Traffic Crashes 6,797	Stroke 15,967	Stroke 146,045	Stroke 167,661	Stroke 5% (1,708,005)
4	Oth./Unsp. Nontransport 572	Homicide 323	Accidental Drowning 200	Homicide 431	Malignant Neoplasms 794	Malignant Neoplasms 758	Malignant Neoplasms 3,916	Suicide 6,562	Diabetes 14,140	Obstructive Pulm. Disease 106,375	Obstructive Pulm. Disease 122,009	MV Traffic Crashes 8% (1,674,868)
5	Heart Disease 493	Malignant Neoplasms 312	Nervous Disease 183	Nervous Disease 374	Accidental Poisoning 468	Accidental Poisoning 669	Heart Disease 2,958	HIV 5,919	Obstructive Pulm. Disease 13,990	Pneumonia 57,011	Diabetes 69,301	Obstructive Pulm. Disease 4% (1,414,309)
6	Homicide 349	Other 228	Congenital Anomalies 173	Congenital Anomalies 330	Heart Disease 443	Heart Disease 519	HIV 2,437	Accidental Poisoning 4,663	Liver Disease 12,428	Diabetes 52,414	Pneumonia 63,548	Perinatal Period 3% (1,080,590)
7	Nervous Disease 293	Oth./Unsp. Nontransport 222	Homicide 127	Accidental Drowning 300	Other 380	Other 444	Accidental Poisoning 2,380	Liver Disease 3,371	MV Traffic Crashes 6,693	Alzheimer's 48,993	Alzheimer's 49,556	Suicide 3% (1,032,765)
8	Pneumonia 280	Smoke Exposure 221	Oth./Unsp. Nontransport 112	Heart Disease 269	Accidental Drowning 366	Oth./Unsp. Nontransport 296	Other 1,554	Homicide 3,320	Suicide 8,362	Mental Retardation 36,656	MV Traffic Crashes 41,995	Diabetes 3% (970,832)
9	Septicemia 274	Nervous Disease 209	Heart Disease 89	Oth./Unsp. Nontransport 239	Nervous Disease 330	Nervous Disease 249	Oth./Unsp. Nontransport 895	Other 2,987	Other 5,395	Nephritis 31,225	Mental Retardation 38,892	Other 2% (825,216)
10	Other Resp. Disease 254	Heart Disease 163	Other 75	Metabolic Disorder 174	Oth./Unsp. Nontransport 322	Accidental Drowning 221	Injury/Intox. Unk. 679	Stroke 2,599	HIV 5,381	Septicemia 24,796	Nephritis 37,251	Homicide 2% (792,291)
ALL*	28,035	4,195	2,823	6,933	15,727	14,821	40,451	89,798	401,187	1,799,825	2,403,351	All Causes 100% (36,967,102)

¹Number of years calculated based on remaining life expectancy at time of death; percents calculated as a proportion of total years of life lost due to all causes of death.

Source: National Center for Health Statistics, CDC, Mortality Data 2000. *Not a total of top 10 causes of death.

Note: The cause of death classification is based on the National Center for Statistics and Analysis (NCSA) Revised 70 Cause of Death Listing. Accordingly, the rank of some causes of death will differ from those reported by the National Center for Health Statistics (NCHS). This difference will mostly be observed for minor causes of death in smaller age groupings.

**When ranked by specific ages, motor vehicle traffic crashes are the leading cause of death for every age 2 through 33.

Ten Leading Causes of Death in New Zealand 1994 to 1998

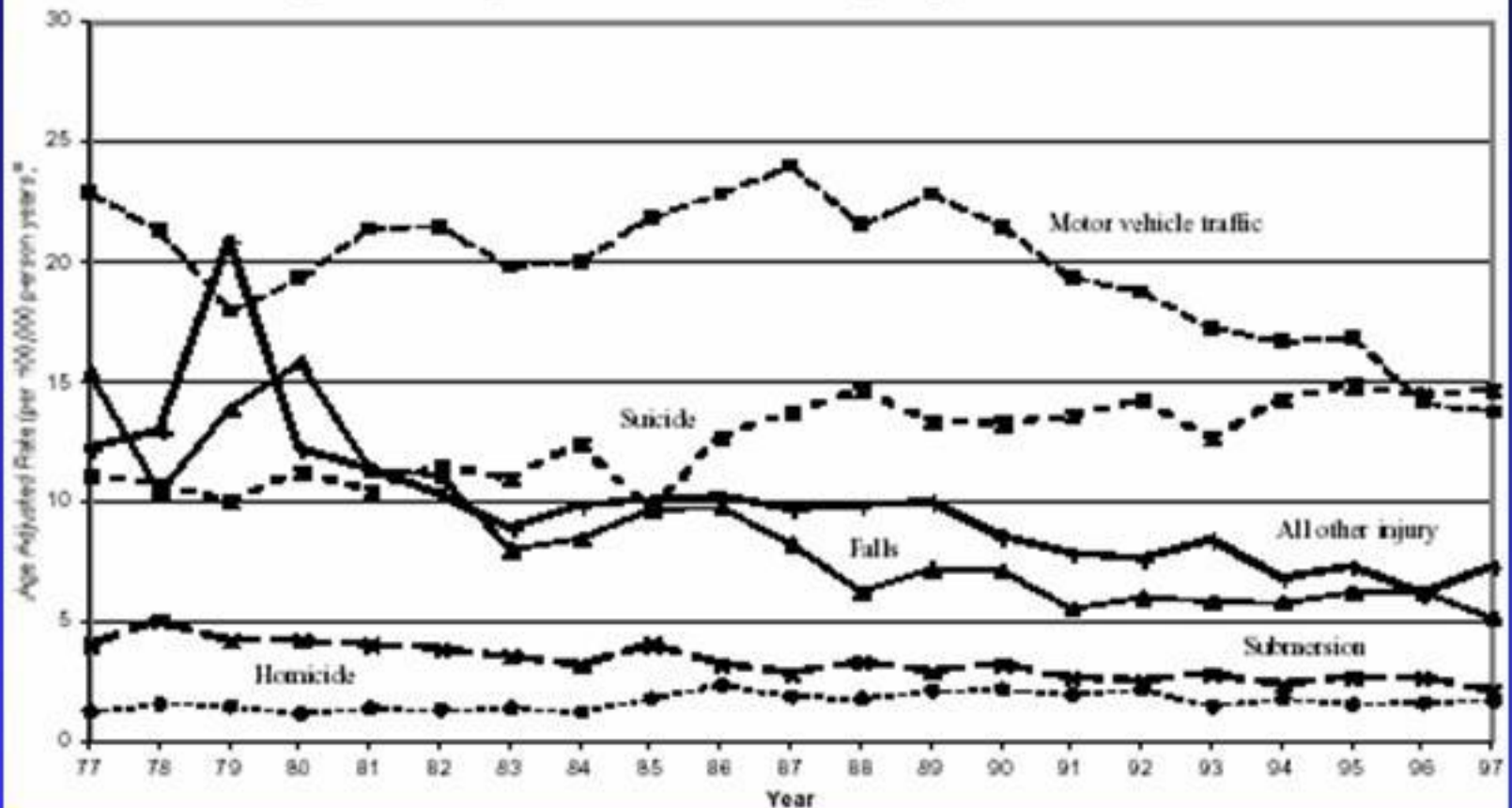
Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All ages
1	Potential 32.7%	Unintentional 41.4%	Unintentional 42.9%	Unintentional 34.9%	Unintentional 44.8%	Unintentional 31.1%	Cancers 30.8%	Cancers 43.3%	Cancers 44.0%	Heart 49.4%	Heart 41.9%
2	Congenital 25.0%	Congenital 14.1%	Cancers 24.0%	Cancers 20.8%	Suicide 25.1%	Suicide 23.0%	Heart 22.9%	Heart 30.0%	Heart 34.5%	Cancers 25.2%	Cancers 27.4%
3	Infectious 24.2%	Cancers 11.2%	Congenital 9.8%	Suicide 12.8%	Cancers 7.3%	Cancers 15.8%	Unintentional 15.6%	Unintentional 6.2%	Respiratory 5.9%	Respiratory 12.3%	Respiratory 10.2%
4	Unintentional 5.1%	Infectious 8.0%	Neonatal 9.2%	Neonatal 11.5%	Heart 3.1%	Heart 9.2%	Suicide 11.6%	Suicide 4.2%	Endocrine 4.5%	Digestive 3.0%	Unintentional 4.0%
5	Respiratory 3.5%	Neonatal 1.4%	Non-fatal 3.8%	Congenital 6.4%	Heart 3.0%	Neonatal 3.1%	Neonatal 3.2%	Endocrine 4.1%	Unintentional 2.9%	Endocrine 2.7%	Endocrine 3.0%
6	Neonatal 3.0%	Respiratory 5.50%	Heart 3.1%	Heart 4.2%	Neonatal 2.7%	Heart 3.0%	Endocrine 3.2%	Respiratory 2.9%	Digestive 2.2%	Heart 2.4%	Digestive 2.1%
7	Infectious 2.3%	Infectious 3.8%	Endocrine 2.3%	Non-fatal 2.9%	Non-fatal 2.9%	Non-fatal 2.9%	Respiratory 2.8%	Neonatal 2.3%	Neonatal 1.5%	Cerebro-vascular 1.7%	Heart 2.1%
8	Cancers 0.9%	Non-fatal 2.9%	Infectious 1.5%	Endocrine 1.5%	Congenital 1.5%	Infectious 2.8%	Infectious 2.40%	Digestive 2.1%	Suicide 1.9%	Unintentional 1.8%	Suicide 2.0%
9	Non-fatal 0.9%	Heart 2.5%	Respiratory 1.2%	Infectious 1.8%	Respiratory 1.3%	Endocrine 2.2%	Heart 2.0%	Infectious 1.3%	Cerebro-vascular 0.8%	Neonatal 1.5%	Neonatal 1.1%
10	Heart 0.7%	Endocrine 1.1%	Cerebro-vascular 0.8%	Heart 1.0%	Endocrine 1.2%	Congenital 1.7%	Digestive 1.8%	Heart 0.8%	Infectious 0.7%	Musculoskeletal 0.8%	Cerebro-vascular 1.4%
11-20	1.5%	2.5%	0.4%	2.8%	3.1%	5.1%	3.8%	2.8%	1.8%	1.8%	3.1%
Total	1914	495	261	312	2454	2881	3819	1900	14122	108584	139302

Data Source: Mortality and Demographic Data 1994-1998, NZHIS, Ministry of Health.

*Under 10 included and other causes.

Trends in Fatal Injuries in New Zealand

Rates for Major Categories of Fatal Injury, New Zealand 1977-1997

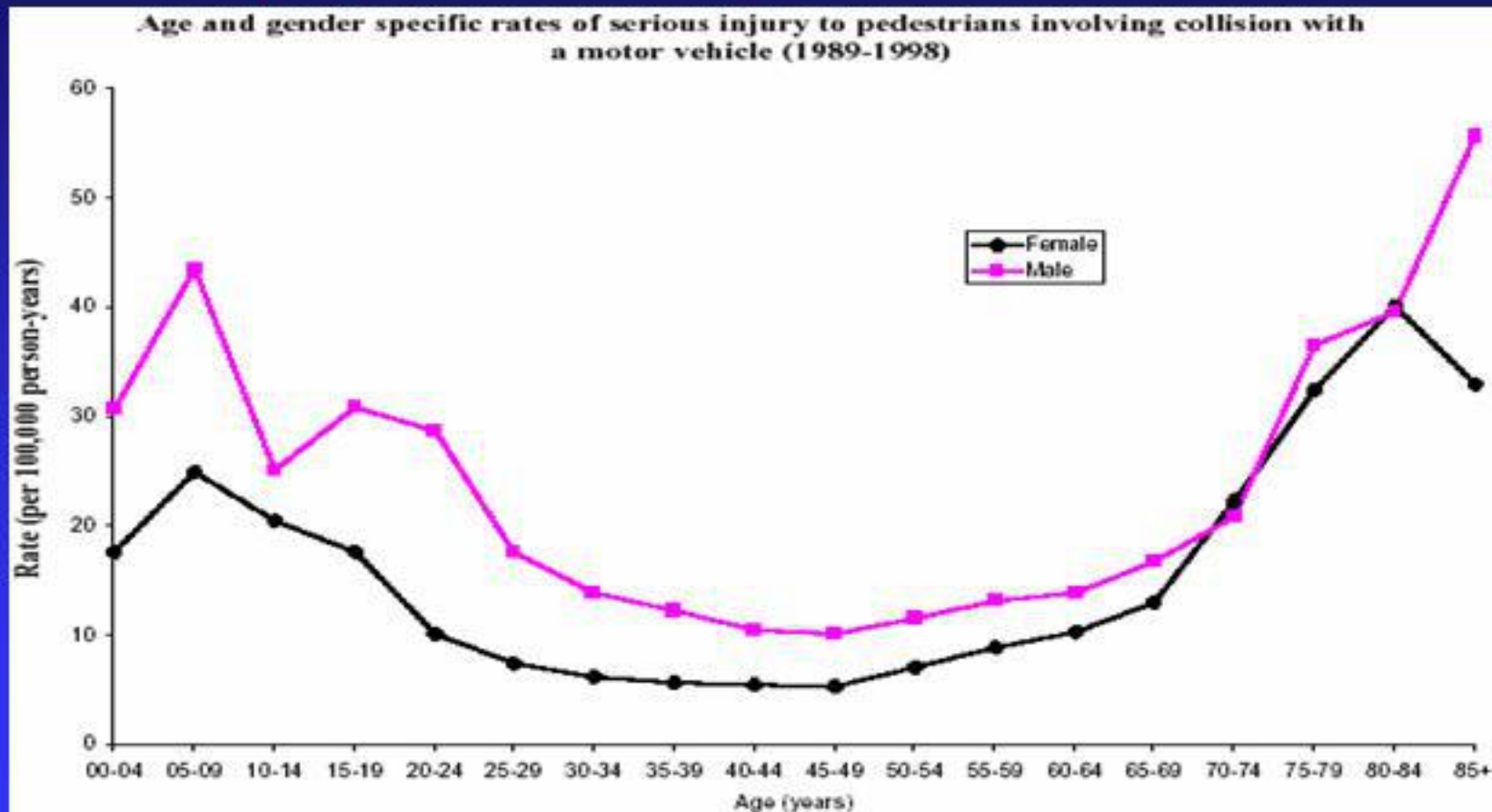


Hospitalisations in New Zealand

10 Leading Causes of Injury Resulting in Hospitalisation® - New Zealand 2000

Age Groups													
Rank	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+ years	Total
1	FALL	FALL	FALL	FALL	FALL	FALL	FALL	FALL	FALL	FALL	FALL	FALL	FALL
	34.7%	41.7%	45.3%	30.8%	27.1%	14.2%	28.2%	28.3%	41.8%	55.8%	78.2%	86.8%	41.2%
2	POISONING	STRUCK BY VEHICLE	CYCLIST	MVT OCCURANT	OUTPERCE	SELF-INFLICTED INJURY	SELF-INFLICTED INJURY	OUTPERCE	MVT OCCURANT	MVT OCCURANT	OVEREXERTION	UNSPECIFIED	OUTPERCE
	16.8%	8.8%	8.2%	13.6%	11.2%	11.8%	12.8%	16.2%	8.4%	8.8%	4.3%	2.2%	7.8%
3	CAUGHT BETWEEN	CYCLIST	STRUCK BY VEHICLE	SELF-INFLICTED INJURY	SELF-INFLICTED INJURY	OUTPERCE	OUTPERCE	SELF-INFLICTED INJURY	OVEREXERTION	OVEREXERTION	MVT OCCURANT	STRUCK BY VEHICLE	MVT OCCURANT
	9.8%	4.2%	8.7%	10.8%	10.2%	11.8%	11.8%	9.2%	7.8%	8.8%	9.2%	2.2%	8.8%
4	MVT OTHER THAN VEHICLE	OUTPERCE	OTHER TRANSPORT	OUTPERCE	MVT OCCURANT	MVT OCCURANT	MVT OCCURANT	MVT OCCURANT	OUTPERCE	OUTPERCE	STRUCK BY VEHICLE	OVEREXERTION	STRUCK BY VEHICLE
	7.7%	3.8%	7.8%	8.2%	10.8%	8.2%	8.2%	8.2%	8.4%	3.8%	2.8%	2.2%	8.2%
5	STRUCK BY VEHICLE	OTHER TRANSPORT	OUTPERCE	STRUCK BY VEHICLE	ASSAULT	STRUCK BY VEHICLE	STRUCK BY VEHICLE	OTHER TRANSPORT	OTHER TRANSPORT	STRUCK BY VEHICLE	UNSPECIFIED	MVT OCCURANT	SELF-INFLICTED INJURY
	8.7%	3.2%	7.8%	8.8%	8.2%	8.2%	8.2%	8.2%	4.4%	3.8%	1.8%	1.4%	8.7%
6	OUTPERCE	CAUGHT BETWEEN	MVT OCCURANT	ASSAULT	STRUCK BY VEHICLE	ASSAULT	OTHER TRANSPORT	STRUCK BY VEHICLE	SELF-INFLICTED INJURY	NATURAL/ ENVIRONMENTAL	OUTPERCE	POISONING	OTHER TRANSPORT
	4.2%	3.2%	3.4%	8.4%	8.8%	7.7%	8.2%	8.2%	4.2%	2.8%	1.4%	8.8%	4.8%
7	PEDESTRIAN	PEDESTRIAN	SELF-INFLICTED INJURY	OTHER TRANSPORT	OTHER TRANSPORT	OTHER TRANSPORT	ASSAULT	OVEREXERTION	STRUCK BY VEHICLE	OTHER TRANSPORT	POISONING	PEDESTRIAN	ASSAULT
	3.8%	3.8%	2.8%	8.2%	8.8%	8.4%	8.2%	8.2%	4.2%	2.7%	1.4%	8.8%	3.8%
8	NATURAL/ ENVIRONMENTAL	NATURAL/ ENVIRONMENTAL	OVEREXERTION	CYCLIST	OVEREXERTION	OVEREXERTION	OVEREXERTION	MACHINERY	NATURAL/ ENVIRONMENTAL	SELF-INFLICTED INJURY	NATURAL/ ENVIRONMENTAL	NATURAL/ ENVIRONMENTAL	OVEREXERTION
	3.4%	2.8%	2.8%	3.8%	3.8%	4.7%	8.8%	4.4%	3.8%	2.8%	1.2%	8.8%	3.7%
9	MVT OCCURANT	MVT OCCURANT	PEDESTRIAN	MVT MOTORCYCLIST	MVT MOTORCYCLIST	MVT MOTORCYCLIST	MACHINERY	NATURAL/ ENVIRONMENTAL	MACHINERY	UNSPECIFIED	PEDESTRIAN	OTHER TRANSPORT	CYCLIST
	3.8%	1.7%	2.8%	5.8%	3.7%	3.8%	3.8%	3.8%	1.8%	1.7%	8.8%	2.7%	2.7
10	FOREIGN BODY	FOREIGN BODY	POISONING	POISONING	NATURAL/ ENVIRONMENTAL	MACHINERY	NATURAL/ ENVIRONMENTAL	ASSAULT	POISONING	FOREIGN BODY	OTHER TRANSPORT	FOREIGN BODY	POISONING
	2.8%	1.1%	1.7%	2.8%	2.2%	3.8%	3.2%	3.2%	2.8%	1.8%	1.2%	8.8%	2.8%
All Other	8.7%	4.2%	8.7%	11.8%	12.7%	12.8%	14.2%	14.2%	12.2%	7.8%	2.8%	1.8%	13.8%
Unspecified	2.1%	3.8%	1.4%	1.8%	2.8%	1.4%	1.7%	1.5%	1.8%	2.8%	1.8%	2.2%	1.8%
Total	3078	3011	3288	3584	3185	3513	4881	5285	3348	2941	2541	2713	41485

Age and Gender of Serious Pedestrian Injuries Nationally (1989 – 1998)

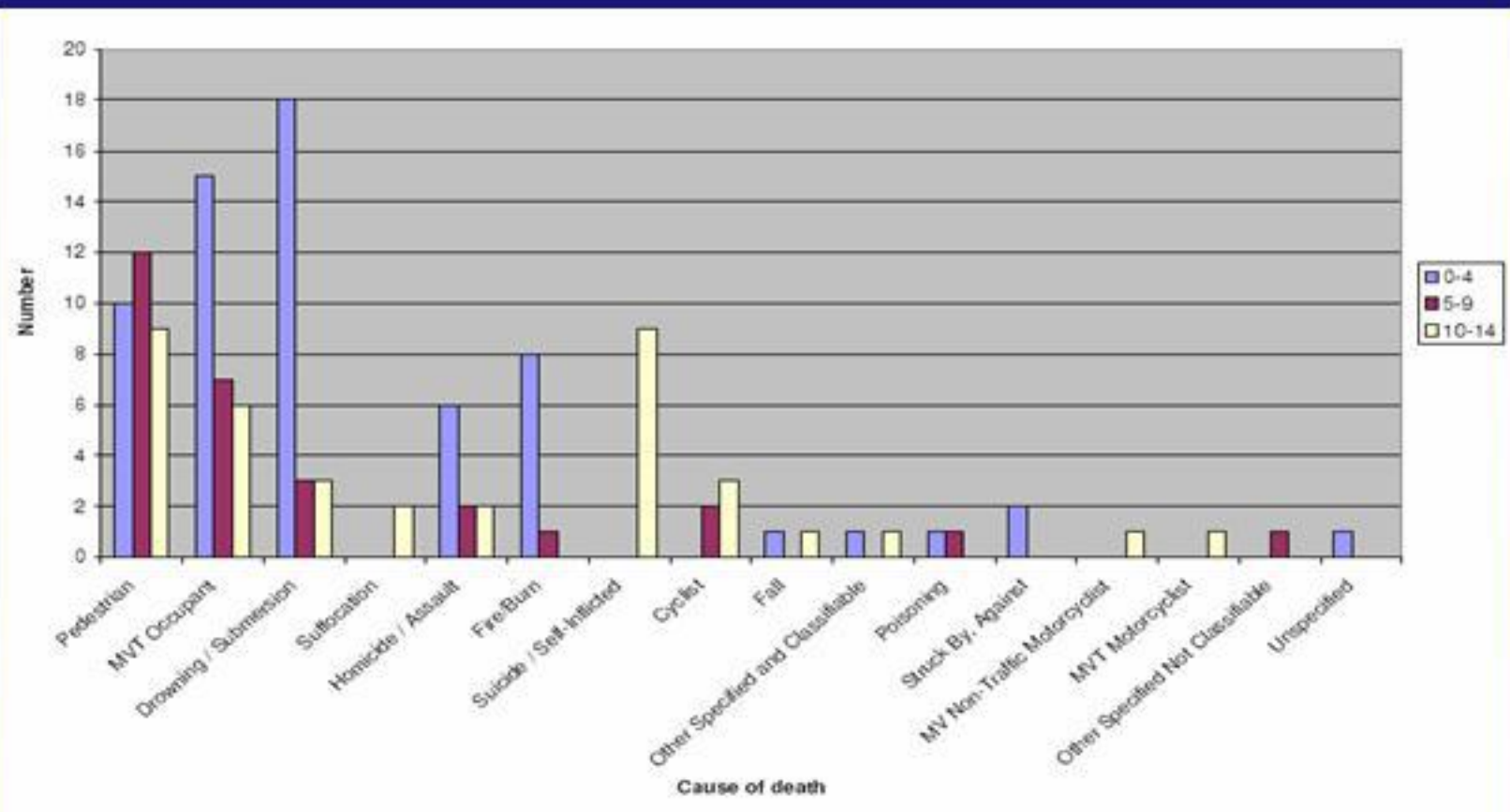


Data Source: Morbidity and Mortality Data, 1989-1998, New Zealand Health Information Service, Ministry of Health, Wellington.

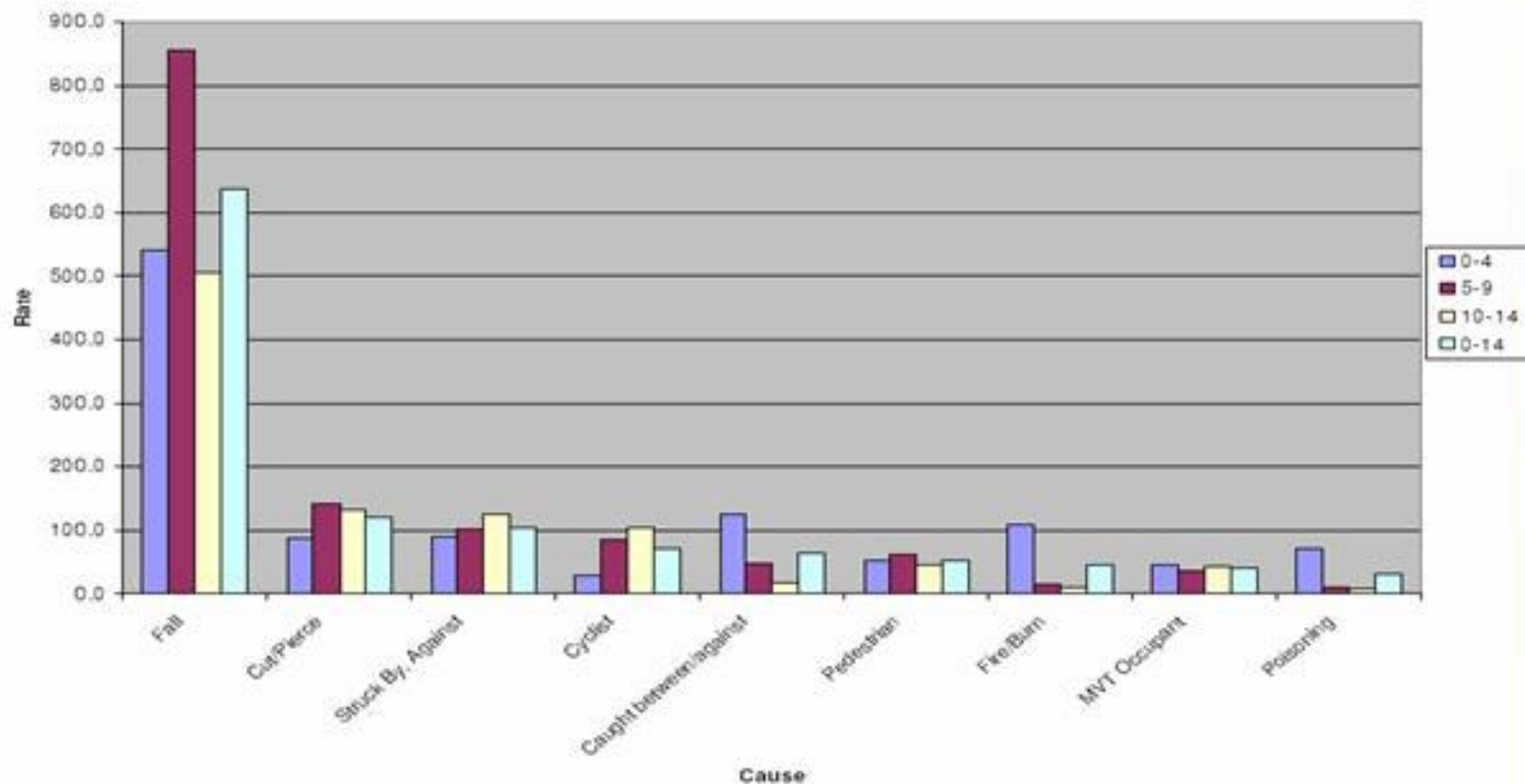
Prepared by: NA Dow, SCR Stephenson, JC Simpson, DM Casey

Source: Otago University Injury Prevention Research Unit – (Fact Sheet 17) Sourced 2004

Auckland Region Number of Child Injury fatalities by cause and age group (1994 – 1998)

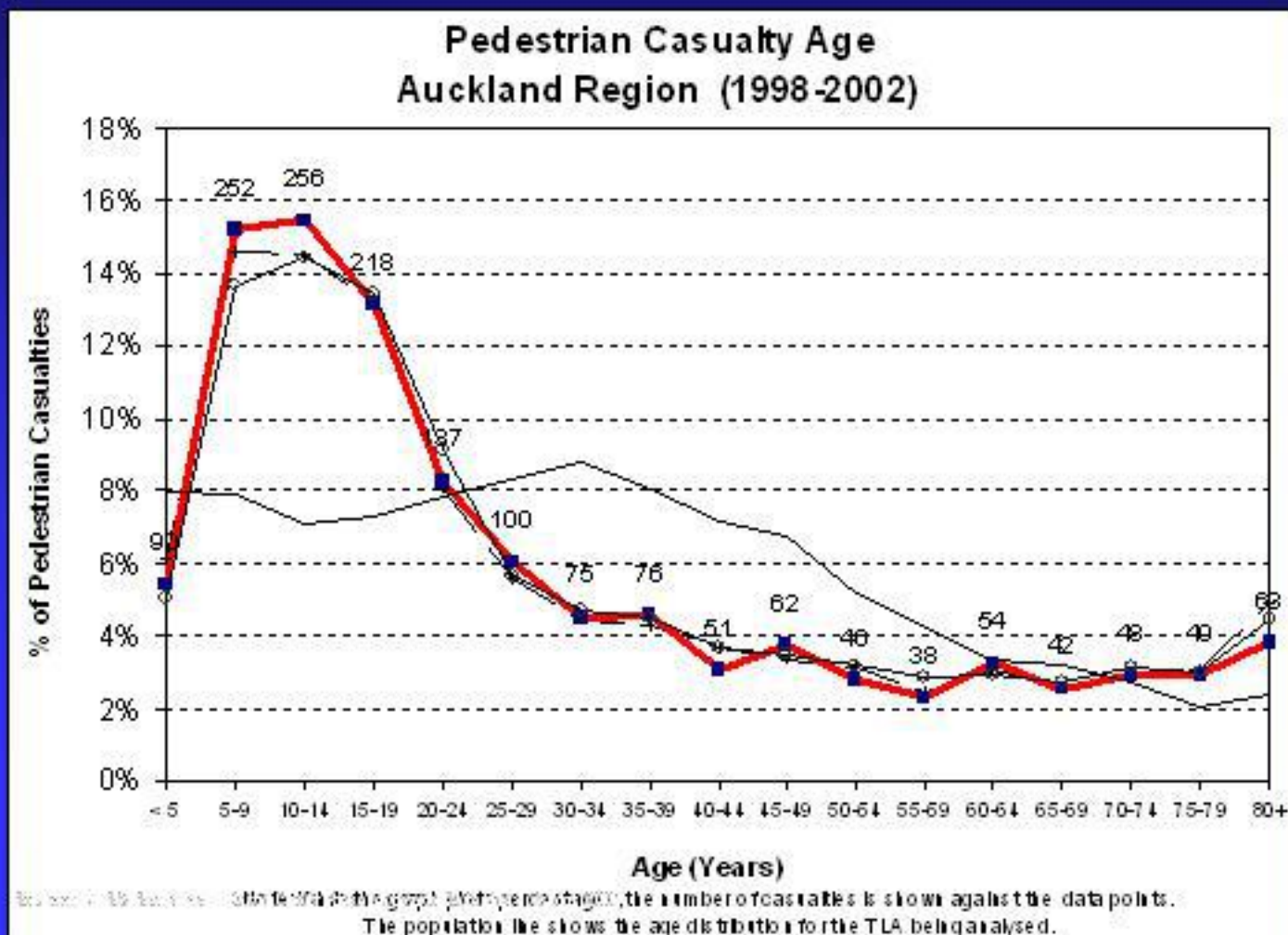


Auckland Region - Top Nine Causes of Hospitalisations by age (1996 - 2000)

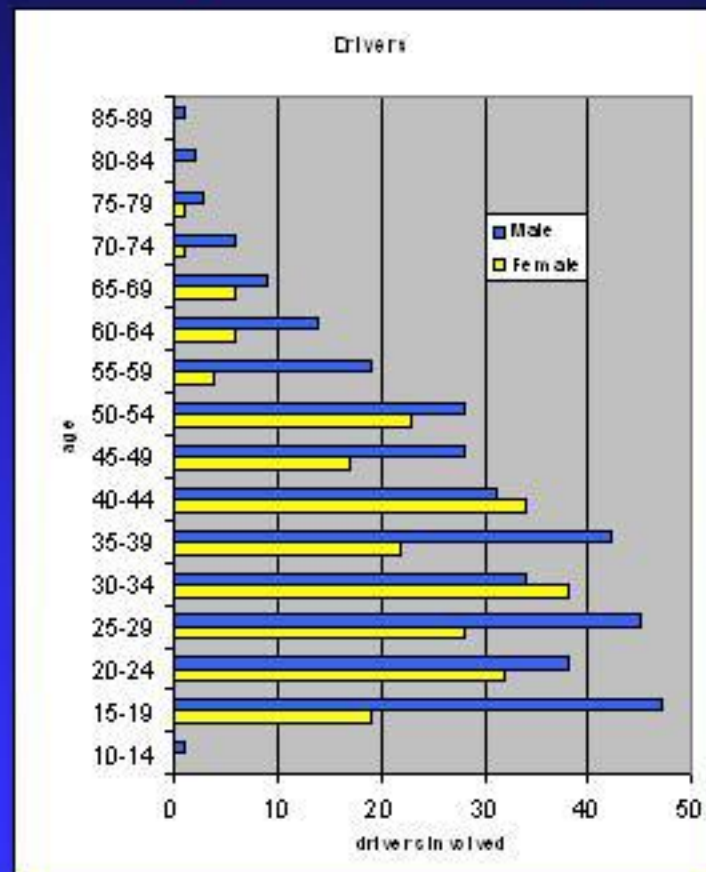
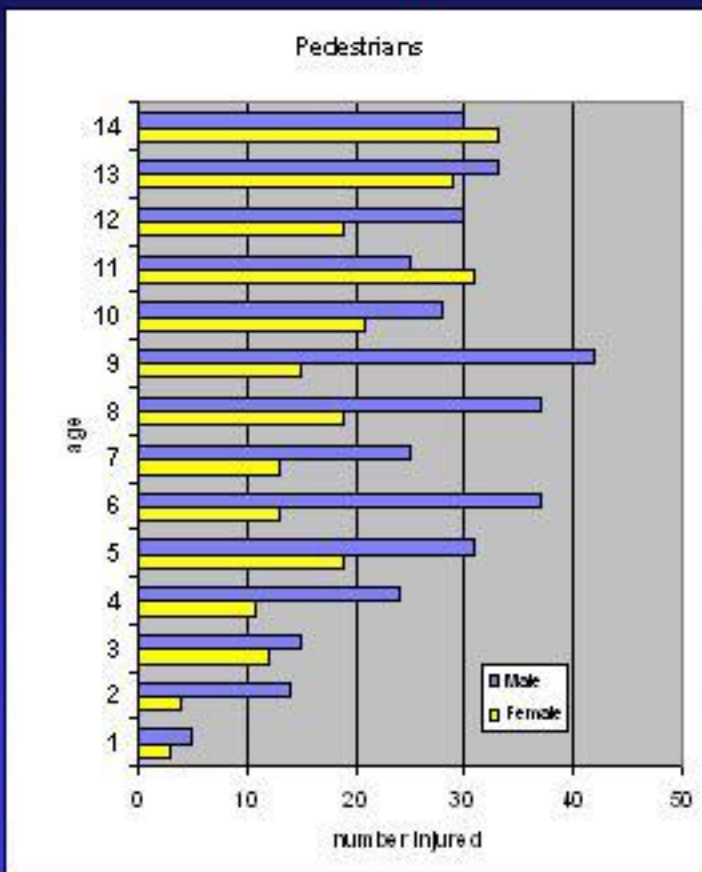


LTSA Crash Analysis System Information

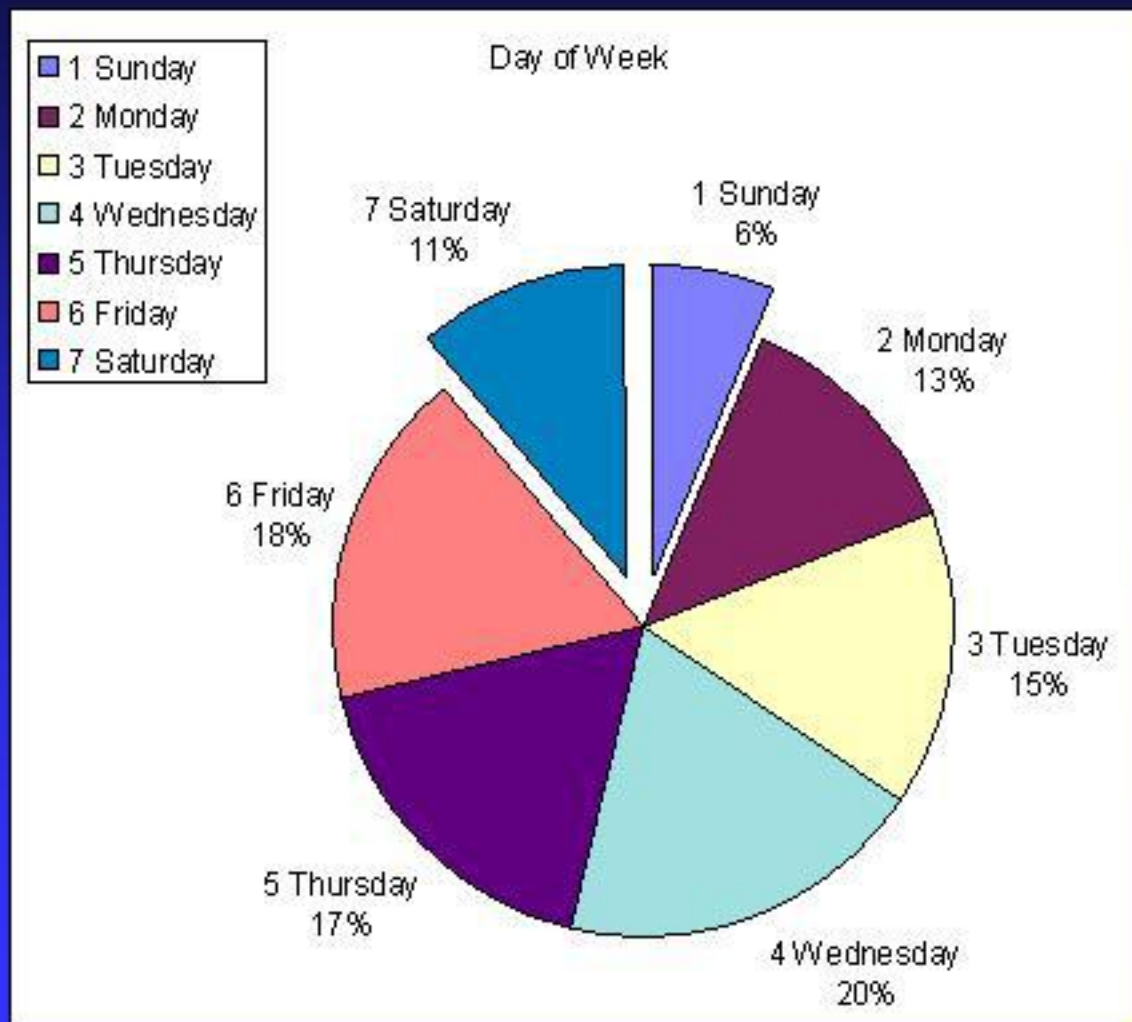
Road Side Information – collected on site



Crashes involving pedestrians 0 – 14 years old Auckland Region Data LTSA (1998 – 2002)

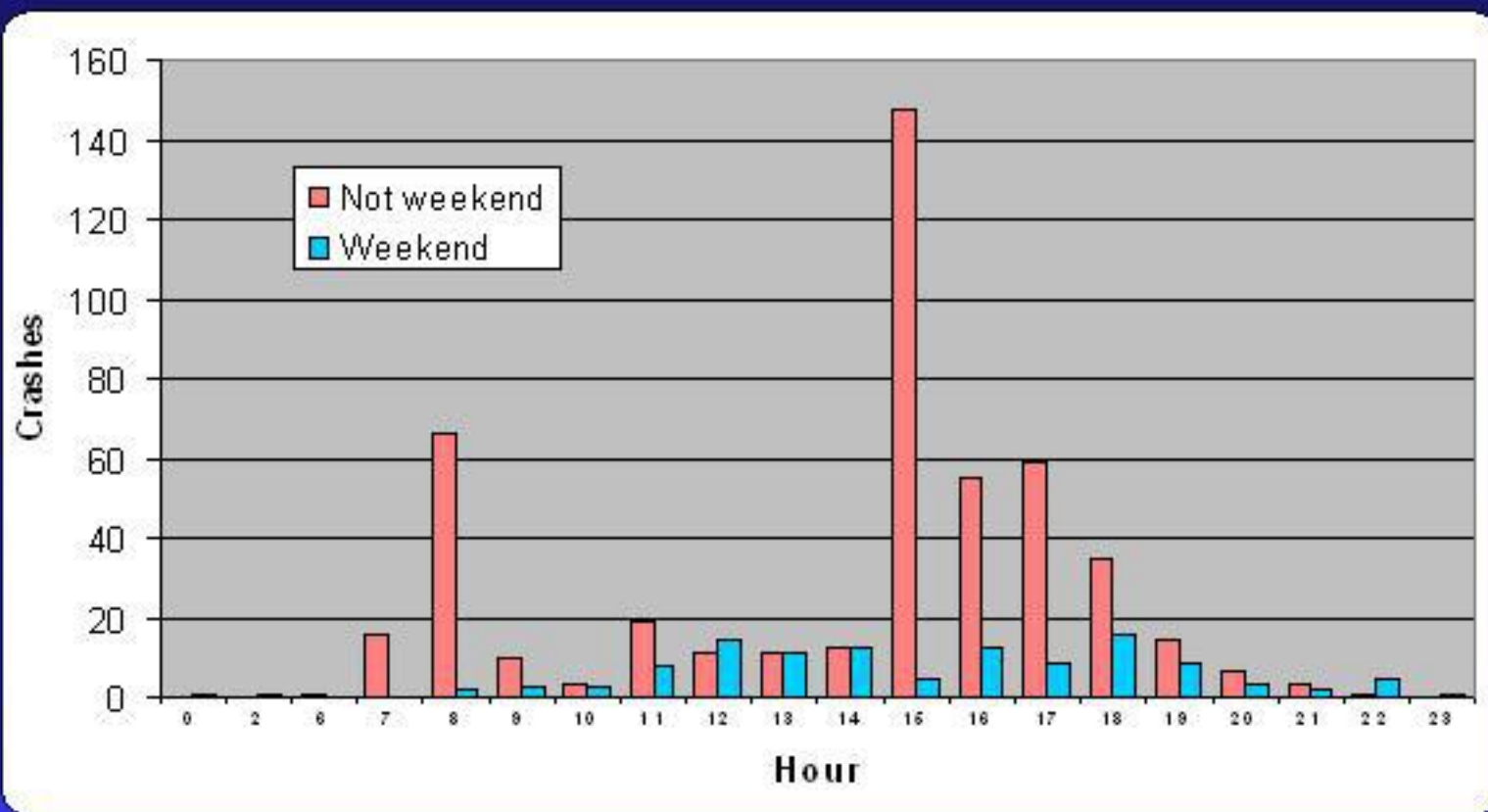


Crashes involving pedestrians 0 – 14 (1998 – 2002) WHEN:



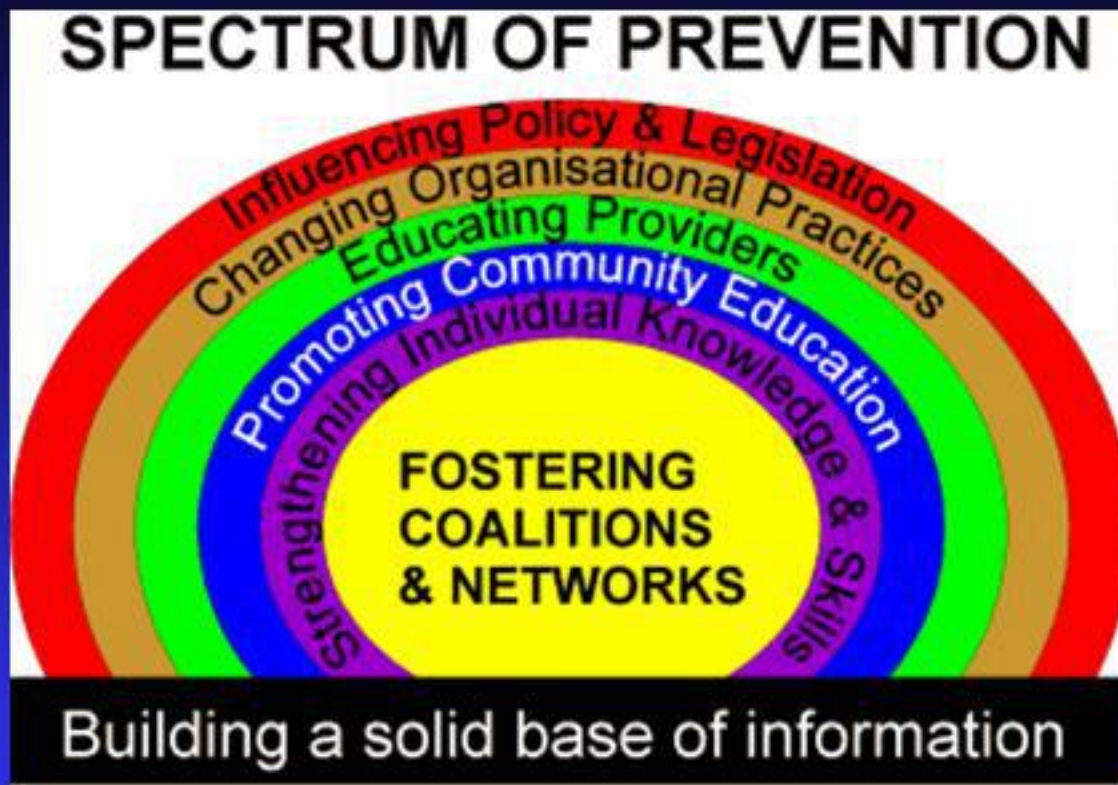
Crashes involving pedestrians What Time?

0 – 14 years old (1998 – 2002) :



Injury Prevention

- **Requires an evidence based, multidisciplinary and community approach:**
 - ◆ Engineering
 - ◆ Education
 - ◆ Enforcement



Solid Information: a key to moving forward

Collective action a key to effective prevention

Working together we can

- Promote the use of data collection systems and research activity
- Look for trends and developments in everyday practice
- Support advocacy for injury prevention
- Encourage and support injury prevention in our communities and with our friends

Injury Prevention

- Important
- Demanding
- Frustrating

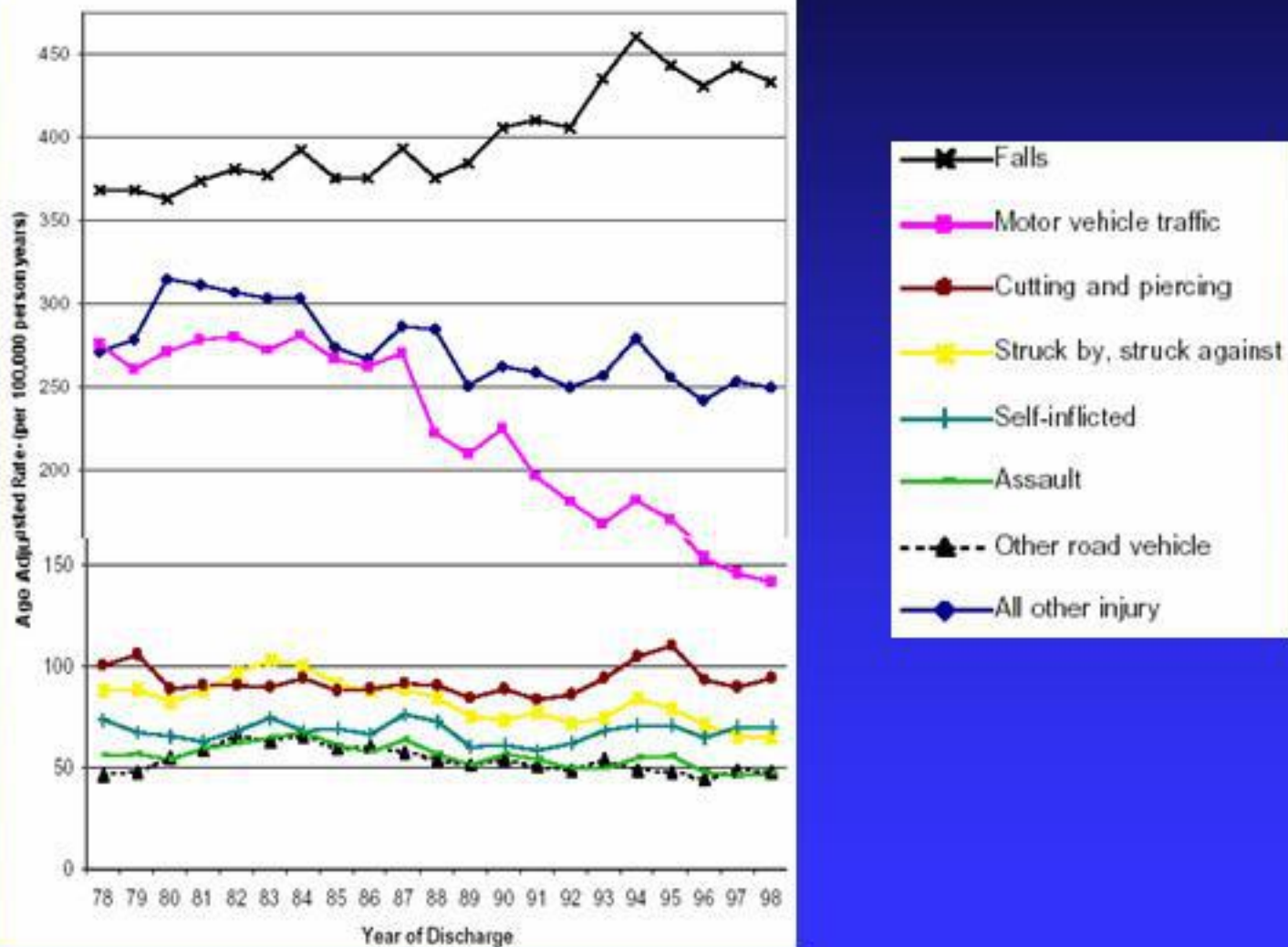
But....

More Panacea than Crock

Thank You



Rates for Major Categories of Non-fatal Injury Hospitalisation,
New Zealand 1978-1998



Pedestrian Factors and Causes

COUNT

713 - Crossing road, running heedless of traffic	362
727 - Pedestrian unsupervised child	161
711 - Crossing heedless of traffic	94
712 - Stepping out from behind parked vehicle	65
726 - Pedestrian child escaped from supervision	34
718 - Crossing road not complying with traffic signal or school patrol	18
722 - Pedestrian playing on road or unnecessarily on road	15
716 - Crossing road confused by traffic or stepped back	9
717 - Suddenly stepped onto pedestrian crossing	9
729 - Pedestrian from school bus	9
715 - Waiting on roadway for moving traffic	6
714 - Failed to use ped crossing when one within 20 m	5
719 - Crossing road misjudged speed and/or distance of vehicle	5
701 - Walking along road not keeping to footpath	4
710 - Crossing road	4
105 - Visibly intoxicated non-driver (pedestrian/cyclist/passenger)	3
720 - Miscellaneous	3
702 - Walking along road not keeping to side of rd	2
724 - Pedestrian wearing dark clothing	2
357 - Emotionally upset	1
505 - Mental illness (eg depression)	1
527 - Child playing in parked vehicle	1
703 - Walking along road not facing oncoming traffic	1
725 - Pedestrian vision obscured by umbrella or clothing	1
728 - Pedestrian sitting / lying on road	1

Driver Factors and Causes

COUNT

306 - Failed to give way to ped on a xing	38
376 - Didn't check when required to give way to ped	13
322 - Did not stop at steady red light	12
112 - Too fast on straight	7
330 - Inattentive	7
360 - Attention diverted by driver dazzled by sun/lights	7
383 - Misjudged pedestrians movement or intention	7
110 - Too fast for conditions	6
102 - Alcohol test below limit	5
111 - Too fast entering corner	5
311 - Failed to give way to ped on footpath or verge	5
370 - Did not see or look for other party until too late	5
371 - Didn't check behind when reversing	5
402 - New driver showed inexperience	5
131 - Lost control when turning	4
331 - Failed to notice car slowing	4
101 - Alcohol suspected	3
181 - Following too closely	3
350 - Attention diverted	3
103 - Alcohol test above limit or test refused	2
324 - Did not stop at steady amber light	2
352 - Attention diverted by scenery or persons outside vehicle	2
358 - Attention diverted by cigarette	2
378 - Didn't check when visibility limited by roadside features	2
400 - Inexperience	2
403 - Driving strange vehicle	2

Figure 7: Comparison Rates vrs No All Child Injury Hospitalisations Auckland TLAs, 1996-2000

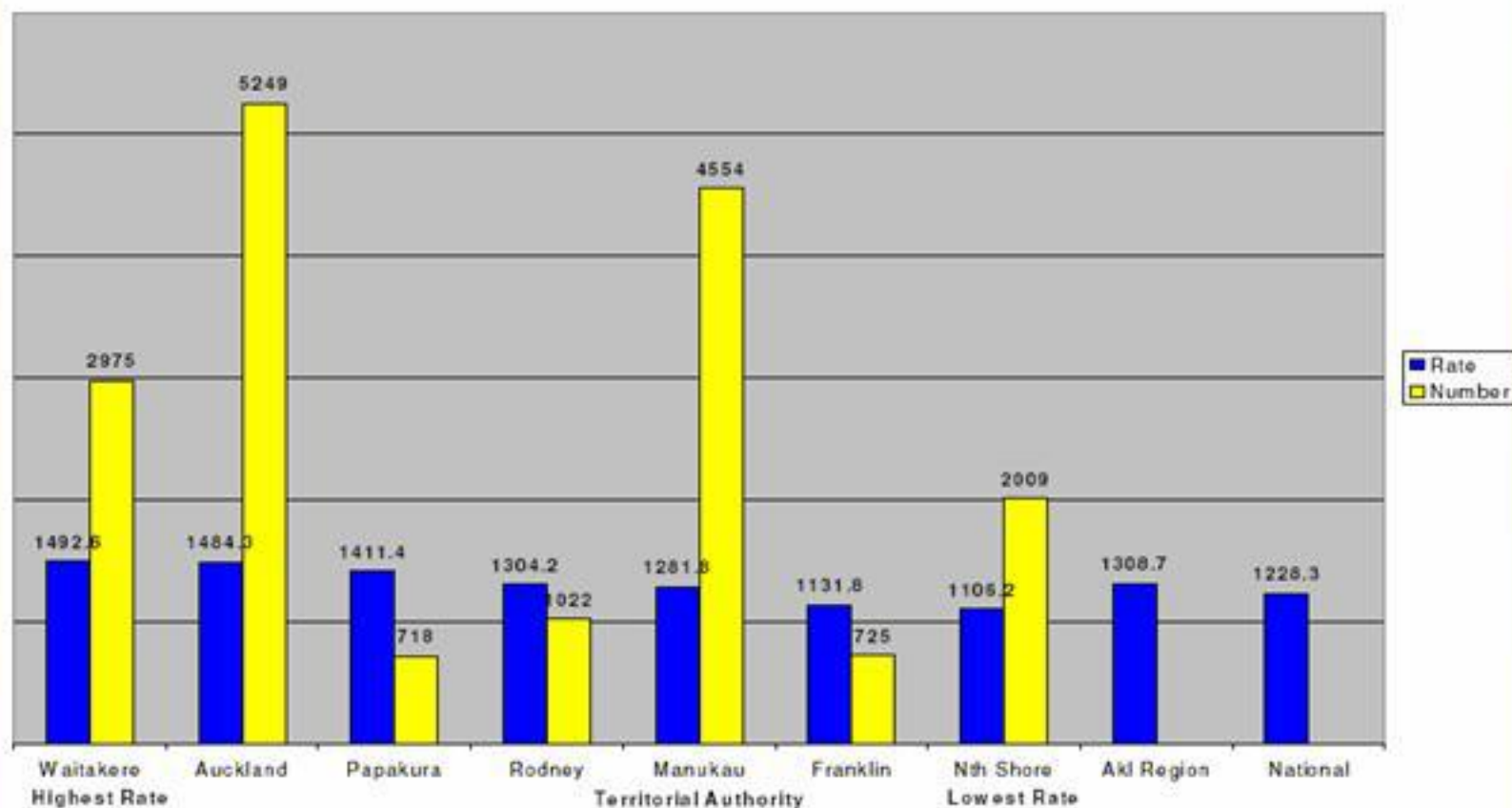


Figure 5: Graph Comparison Auckland Region Child Injury Hospitalisation Rates vrs National Rate, 1996-2000

