Our mission – to reduce the incidence and severity of preventable injuries to New Zealand's children aged 0 – 14 years.

Children in the Fast Lane

Julie Chambers

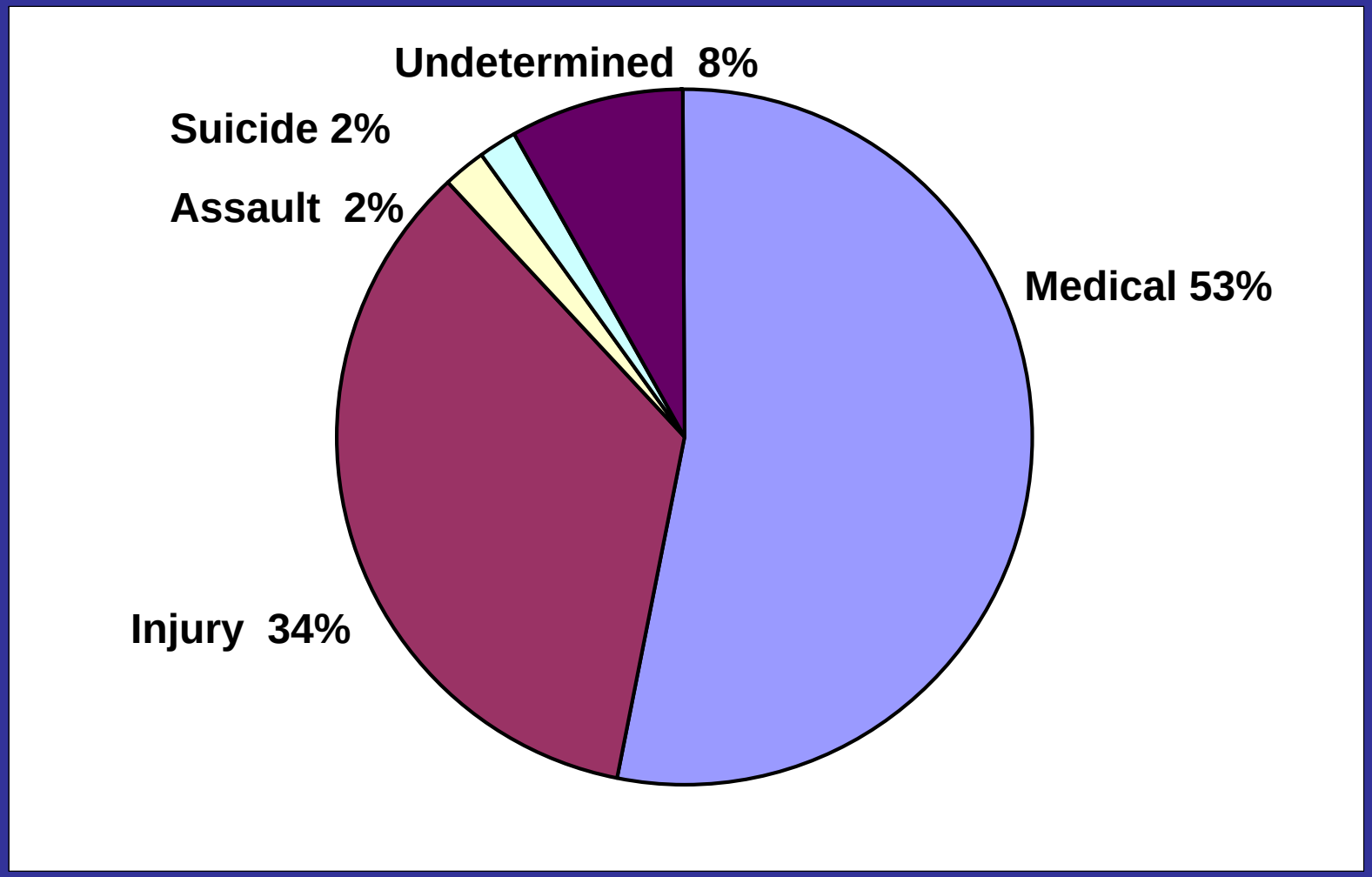
Senior Policy Analyst

Safekids New Zealand

- Aim to prevent **unintentional injuries** to children (0 to 14 years of age)
    - advocacy and
    - co-ordinating annual Safekids Campaign

- Service of Starship Children's Hospital
- Funded by contract from MOH Public Health
- Sponsorship from Government, non government and private sector organisations
- Work on all injury causes

NZ Child Mortality 1-14 (2002-3)



Source: Child Youth Mortality Committee 2005 Report: Accessed 2006

Cause of death New Zealand 1998-2002

Rank	<1	1-4	5-9	10-14	15-24
1	Perinatal 40.8%	Unintentional Injury 38.0%	Unintentional Injury 40.5%	Unintentional Injury 44.0%	Unintentional Injury 43.4%
2	Congenital 23.7%	Congenital 14.0%	Cancers 24.4%	Cancers 19.4%	Suicide 27.9%
3	Ill defined 19.3%	Cancers 11.0%	Congenital 9.1%	Congenital 8.0%	Cancers 8.1%
4	Unintentional Injury 4.9%	Infectious 10.0%	Nervous 8.7%	Suicide 7.7%	Nervous 4.2%
5	Nervous 2.7%	Nervous 8.3%	Homicide 3.7%	Nervous 6.8%	Congenital 3.1%
6	Respiratory 2.6%	Respiratory 4.4%	Endocrine 2.9%	Heart 3.1%	Heart 3.0%
7	Infectious 2.2%	Homicide 4.2%	Infectious 2.5%	Respiratory 2.5%	Homicide 2.6%
8	Heart 1.1%	Heart 3.2%	Respiratory 2.1%	Homicide 2.2%	Endocrine 2.0%

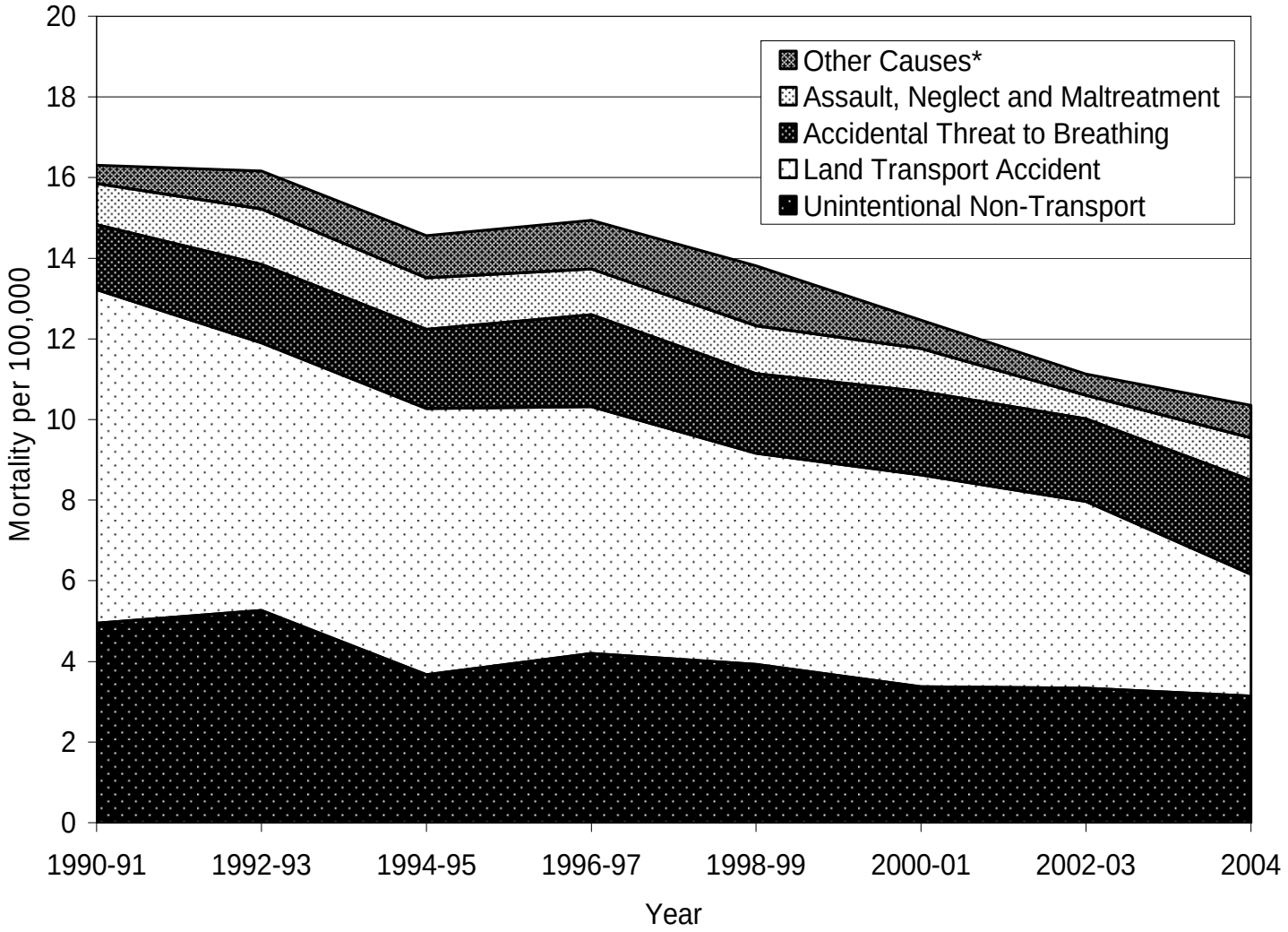
Source; Otago University Injury Prevention Research Unit (IPRU) Fact Sheet 38 2007

Injury fatalities of NZ children aged 0 to 14 (1998 -2002)

Cause of Death	Age Group (years)			Total	% of total
	00-04	05-09	10-14		
MTV Occupant	**35**	**21**	**41**	97	17.7
Suffocation	73	1	11	85	15.5
Drowning	51	10	17	78	14.3
MTV Pedestrian	22	19	11	52	9.5
Assault	30	10	7	47	8.6
Fire/Flame	19	12	4	35	6.4
MTV Pedal Cyclist	1	13	15	29	5.3
Self-inflicted	0	0	25	25	4.6
Pedestrian, other	14	6	3	23	4.2
Other Land Transport	3	6	11	20	3.7
Fall	2	1	9	12	2.2
Other Transport	0	5	5	10	1.8
Other Specified	4	1	3	8	1.5
Struck by or against	5	1	2	8	1.5
Poisoning	0	1	4	5	0.9
Hot Object/substance	4	0	0	4	0.7
Natural/Environmental	0	0	3	3	0.6
Firearm	0	0	2	2	0.4
Pedal Cyclist, other	0	0	2	2	0.4
Machinery	1	0	0	1	0.2
Unspecified	1	0	0	1	0.2
Total	265	107	175	547	100.0

Otago University Injury Prevention Research Unit – NHISNZ Data supplied to Safekids 2006

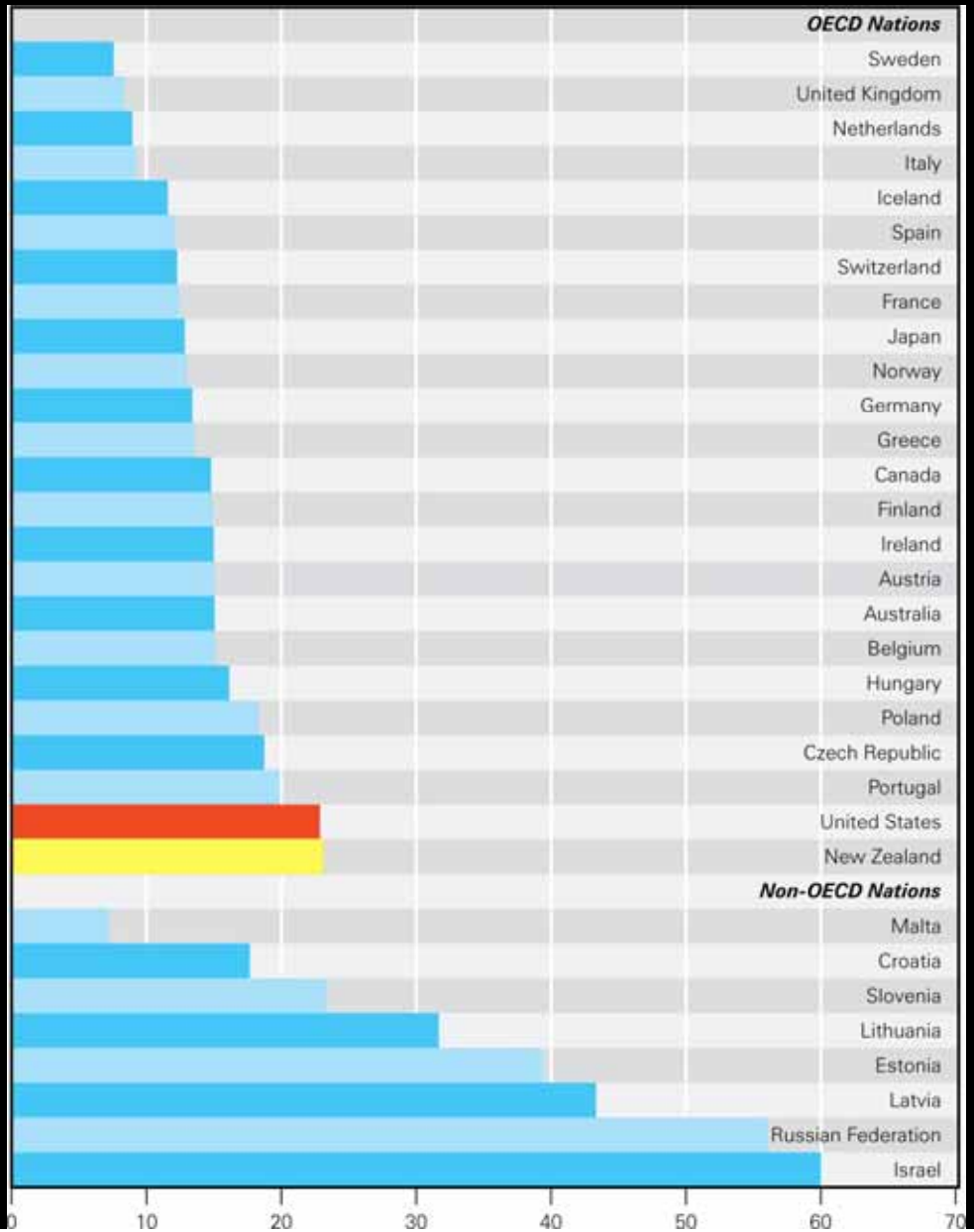
Trends in Injury Mortality for Children 0-14 Yrs, New Zealand 1990-2004



Source: NZ Health Information Service via NZ Child and Youth Epidemiology Service 2007

Deaths from accidents and injuries per 100,000 under 19 years

(average of latest three years available)



Innocenti Report on

Organisation for Economic Cooperation and Development (OECD) Counties 2007


© Victor Lucas 2006

Cycle Safety

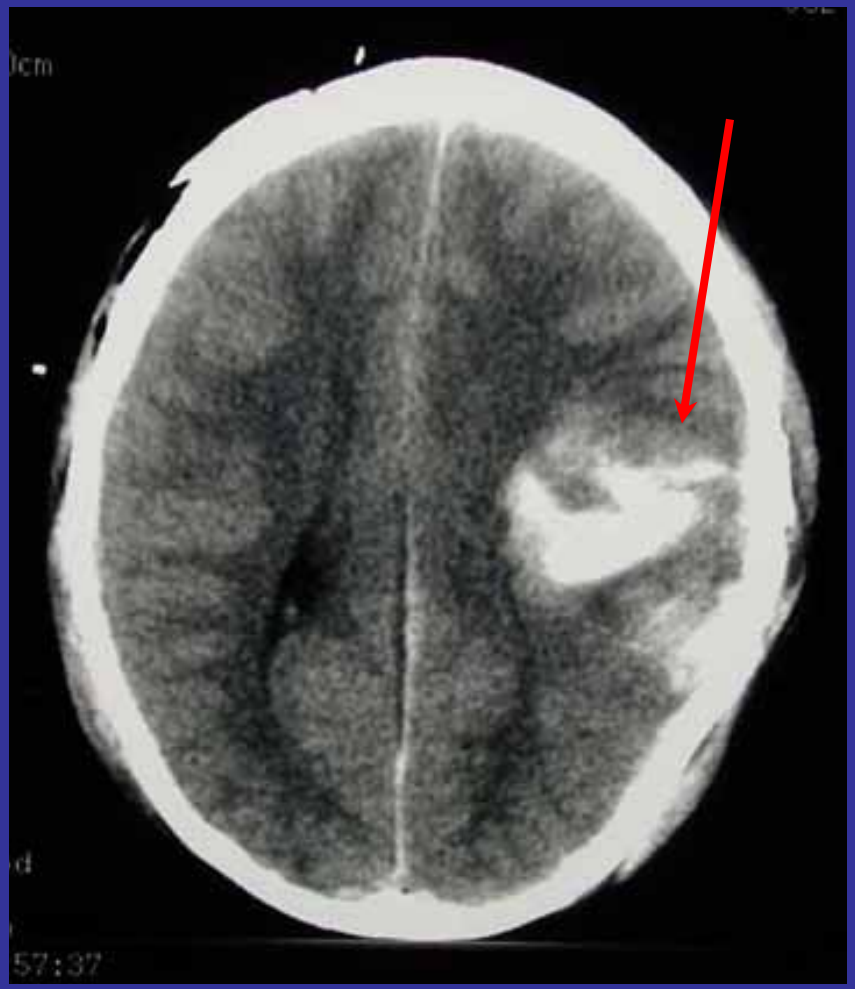
Safety gear

Safety skills

Safe environments

Left Parietal Hemorrhage

CT Scan

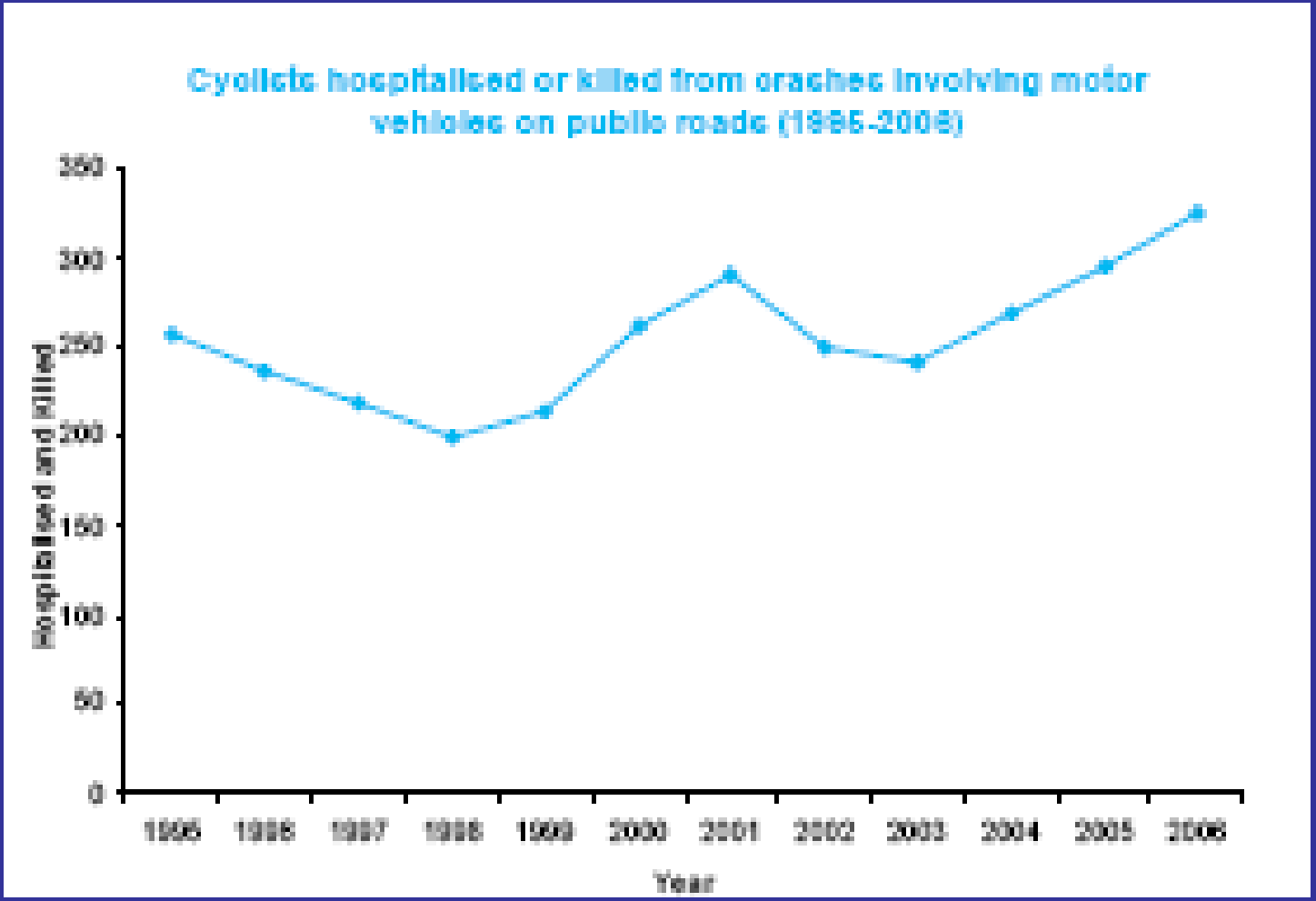


MRI

NZ Cycling Policy

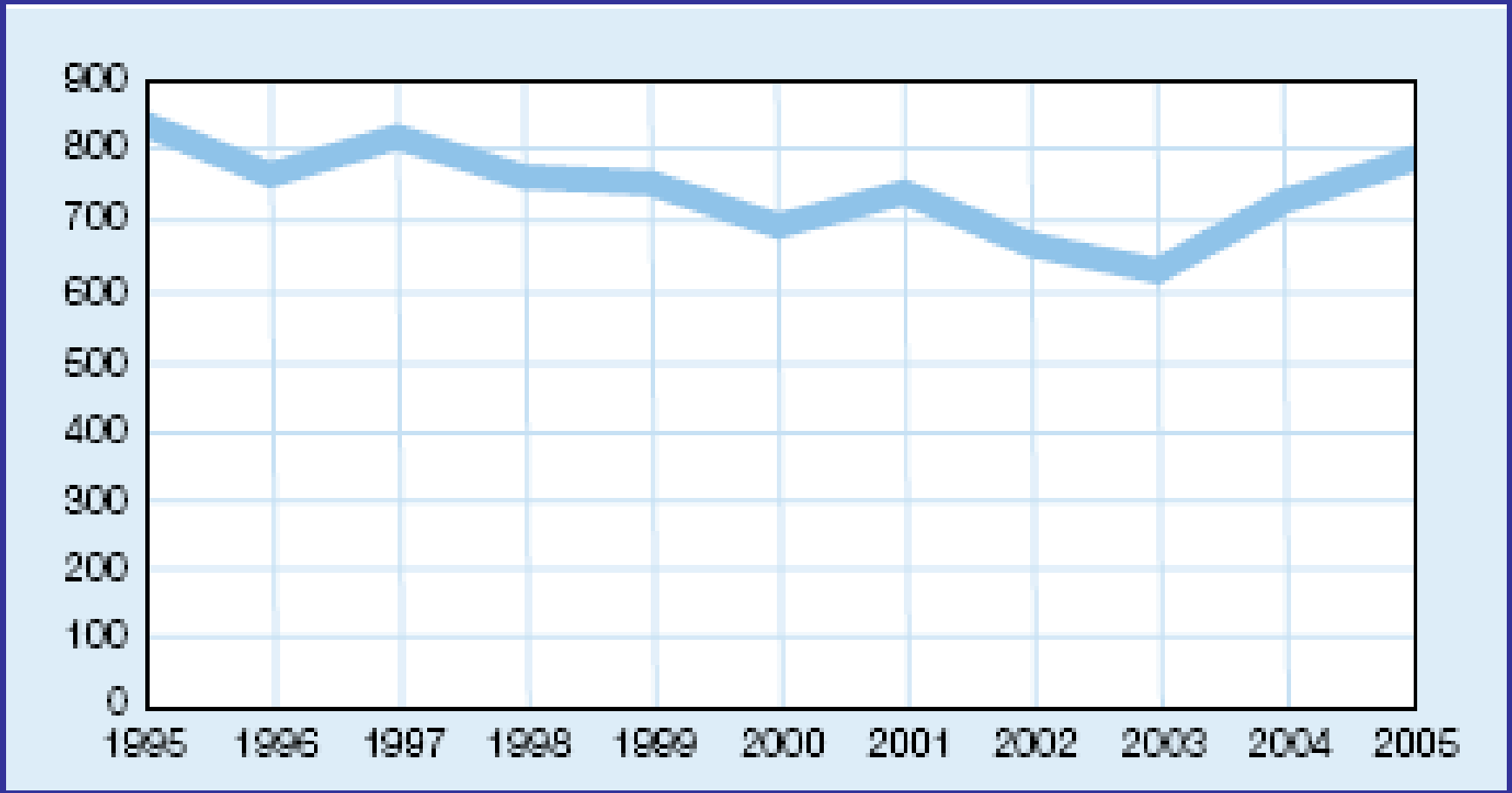
- Cyclists are ‘vulnerable road users’
- No Riding on the footpath in NZ (unless specific circumstances apply)
- NZ Police advise *“Children under the age of eleven supervised while cycling on a road”*
- Children are also ‘traffic naïve’
- Widespread *a*ssumption that children twelve years and over are traffic competent

NZ Cyclist fatalities & hospitalisations 1995 - 2006



Cyclists Crash Statistics for the year ended 31 Dec 2006 Ministry of Transport NZ

Total USA Cyclist fatalities 1995 - 2005



National Highway Traffic Safety Authority; http://www-nrd.nhtsa.dot.gov/Pubs/810617.PDFAccessed 2007

NZ Child cyclists verses cars

Five years 1999 to 2003 – Aged 0 to 14

Crashes NOT involving motor vehicles resulted in 2,528 injuries and one death

Crashes involving motor vehicles resulted in 250 injuries and 22 deaths

Safekids NZ Fact Sheet 2007 NZHIS data – supplied by Injury Prevention research Unit – Otago University

Captain Reality

Children on bikes in traffic

Google Image Search

“Children cycling in traffic” 103,000 images

These were the most ‘car intensive’ pictures.

Are we fooling ourselves?

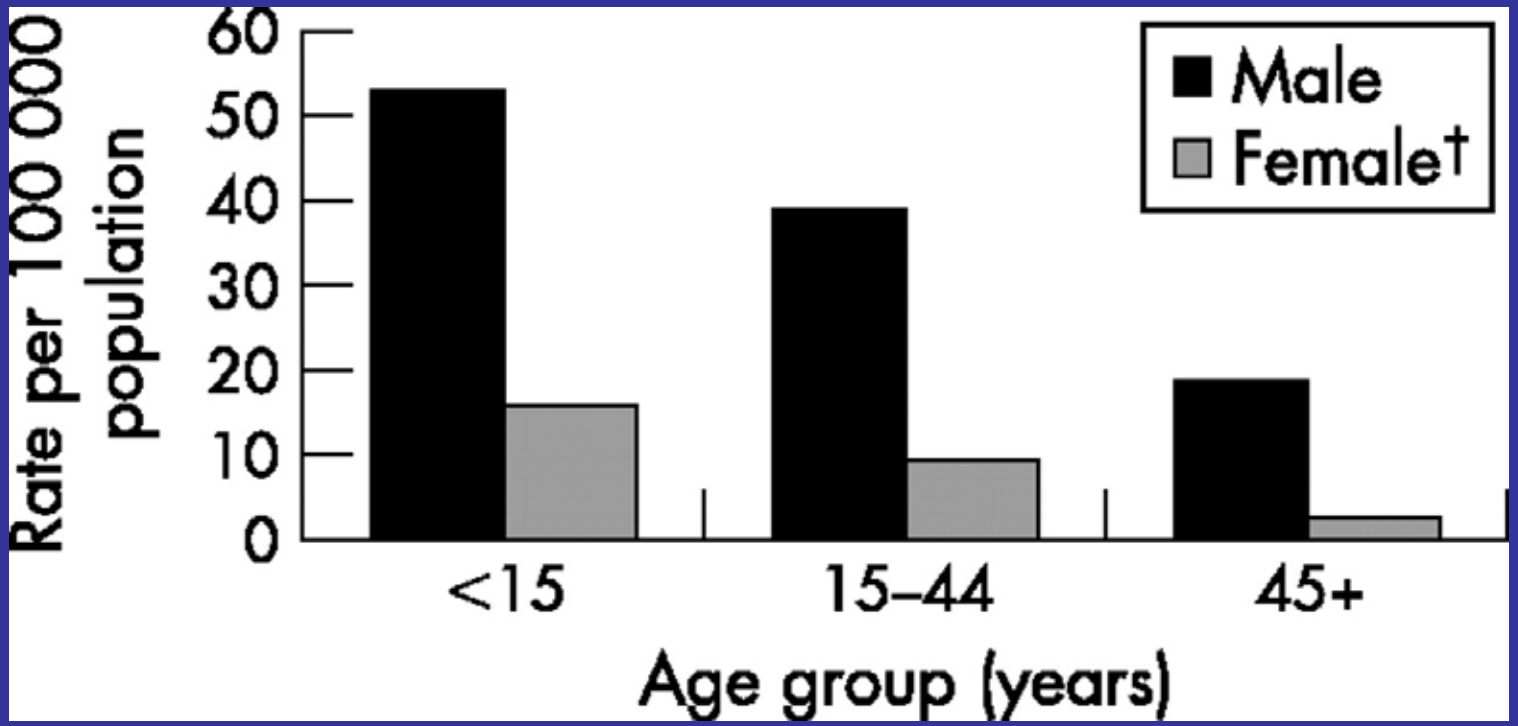
Factors Associated with the Crash Risk of Adult Bicyclists. Rodgers, G.,

Journal of Safety Research, 1997. **28**(4): p. 233-241.

This U.S Study of 3000 riders (self-report questionnaire), found that bicycle risk was systematically related to

- **rider's age,**
- **riding distances,**
- **riding surface,**
- **bicycle type, and**
- **geographical region of residence**

Non-fatal cyclist injury rates by age and sex, in the US, 2001-4.
Rates for persons with non-fatal pedal cyclists injuries sustained from an encounter with a motor vehicle while on the road who were treated in US hospital emergency department.

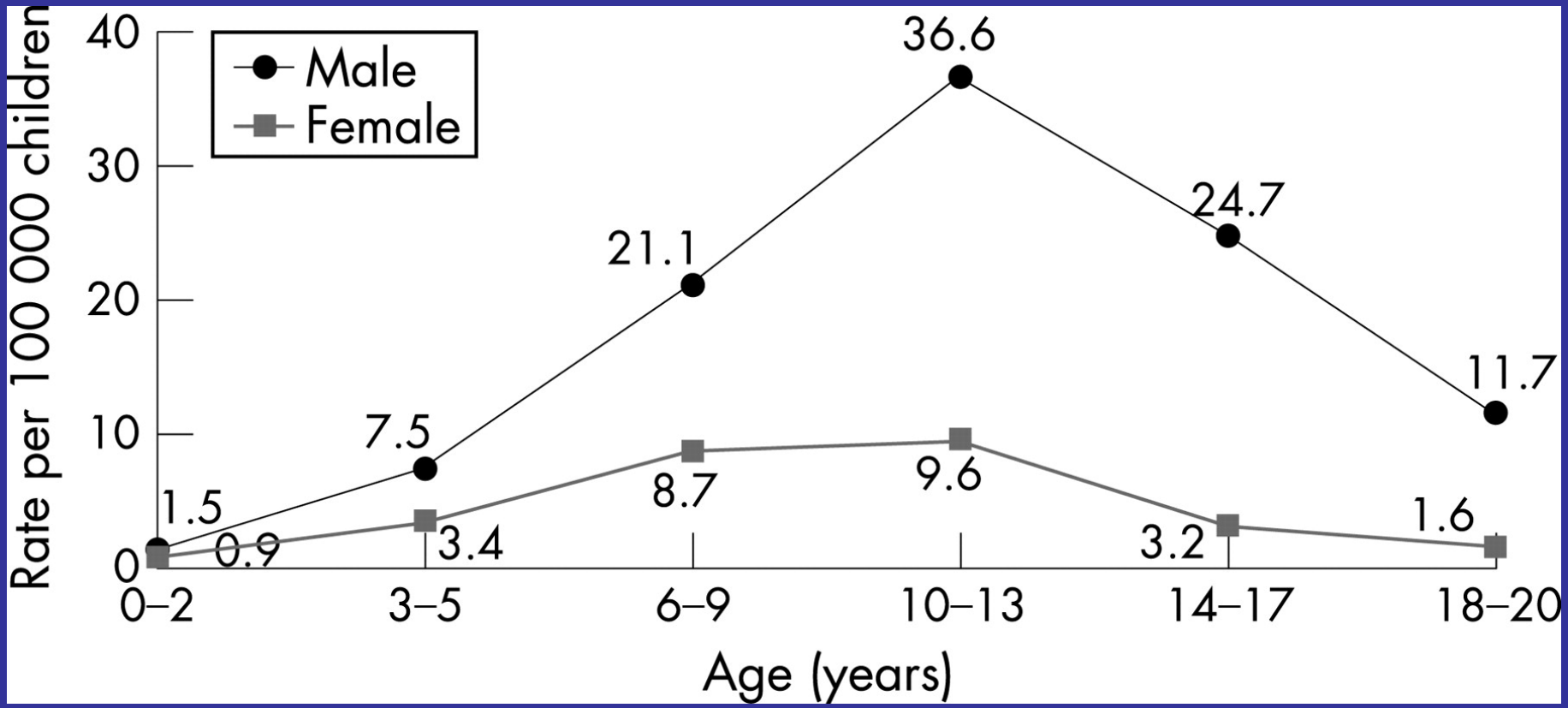


Haileyesus, T. et al. Inj Prev 2007;13:202-206

*** Estimate may be unstable for females aged 15-44 years because coefficient of variation was 31%.**

USA rates of pediatric bicycle-related hospitalization by age and gender, 2003

Data source: Kids' Inpatient Database, 2003.



Shah, S. et al. Inj Prev 2007;13:316-321

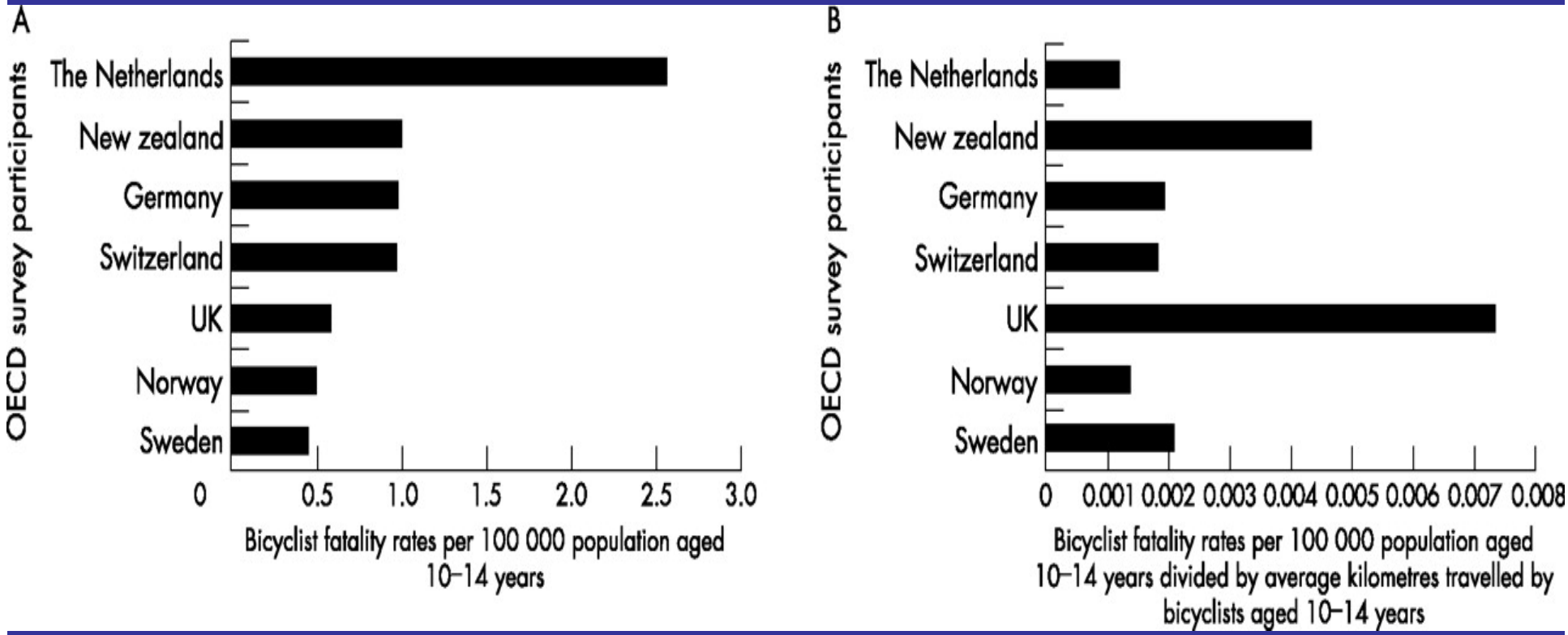
Risk of Child Cycling Injury in NZ

Risk of People killed or injured in reported injury crashes per 100 million km travelled by travel mode			
Age Group	Cycling Risk per 100 million km travelled	Light 4 wheeled Passenger risk per 100 million km travelled	**Risk Ratio Cycling / Passenger**
0-14	291	11	**26.5:1**
15-29	187	45	**4.2:1**
30-44	270	17	**15.9:1**
45-59	283	13	**21.8:1**
60+	116	19	**6.1:1**

Table Prepared by John Wren, Senior Analyst, Safekids, August 2002.
Source of raw data: LTSA, New Zealand Travel Survey 1997/98, Tables TR6 & 7 pg. 45.

(A) Cyclists aged 10-14 years: population-based fatality rates for a sample of OECD countries.

(B) Cyclists aged 10-14 years: population-based fatality rates expressed per unit of exposure for a sample of OECD countries.



Christie, N. et al. Inj Prev 2007;13:125-129


SEA-DOO
SEA-DOO

Children on bikes in traffic

Cycling experiences and knowledge of the road code of nine year olds John Langley, Phil Silva, Shelia Williams

Accid. Anal & Prev. Vol 19 1987

1982 – 397 cases

"The results show a relatively high level of ignorance…"

"…the difference in injury rates between males and females cannot be explained by differences in knowledge of appropriate safety behaviours.

Children on bikes in traffic

Integrating selective attention into developmental pedestrian safety research; Barton B.

Canadian Psychology 2006 Vol. 47 No 3, 203-210

"Although there is much evidence of age as a risk factor during middle childhood, little is known of *why* age functions as a risk factor for pedestrian injuries."

Selective attention to traffic requires orienting, filtering, searching and preparing.

Children on bikes in traffic

Psychological determinants of risk taking by children: an integrative model and implications for interventions

Morrongiello B Lasenby-Lessard J Inj Prev 2007; 13; 20-25

"There are surprisingly few studies on the developmental aspects of risk taking in children between 6 and 12 years of age.."

Model of individual, family factors and social/situational factors contributing to risk taking behaviours.

Children on bikes in traffic

Bicyclist and environmental factors associated with fatal bicycle-related trauma in Ontario, B Rowe, A Rowe, G Bota; Canadian Medial Association Journal 1993

Sample – 202 fatalities between 1986 and 1991

'Age specific strategies appear warranted…

..very young children (those less than ten years) were hit by motor vehicles in midblock ride outs...

Bicyclists 10 to 19 years of age were killed most frequently as they swerved or turned in front of a vehicle…"

The footpath – is it safe?

" …footpath cycling is a safe alternative. The report recommends footpath cycling as a safer option than cycling on local streets and arterial roads…"

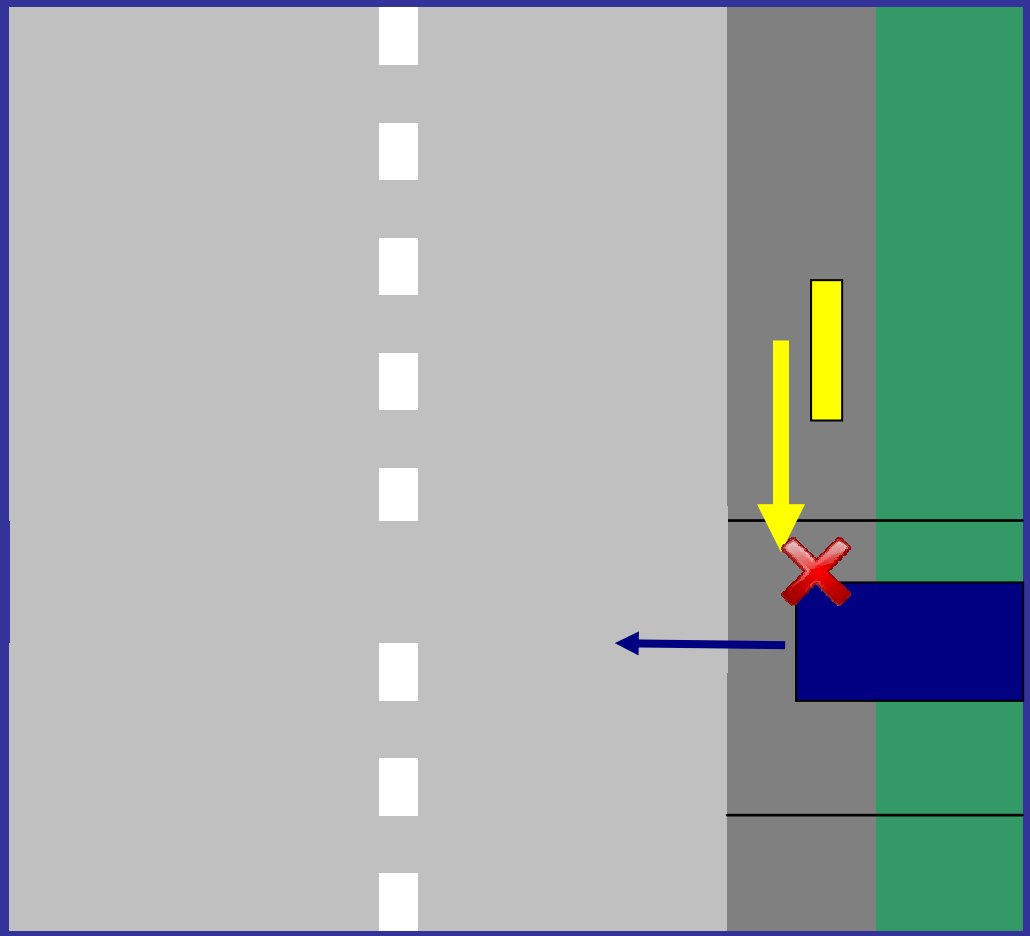
Hazard (edition No. 6) December 1990

Victorian Injury Surveillance System

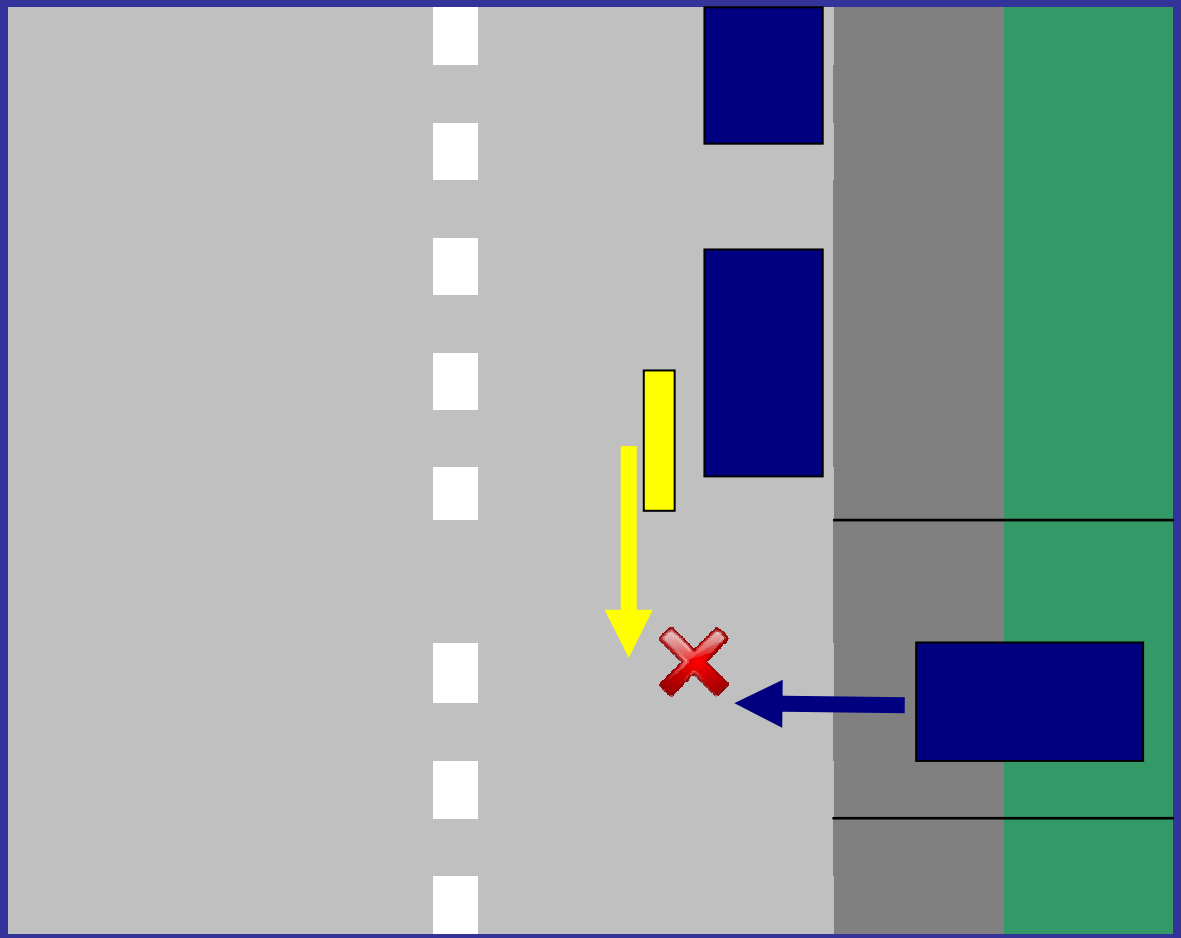
Should NZ consider changing the law about riding on footpaths?

Information Check ...

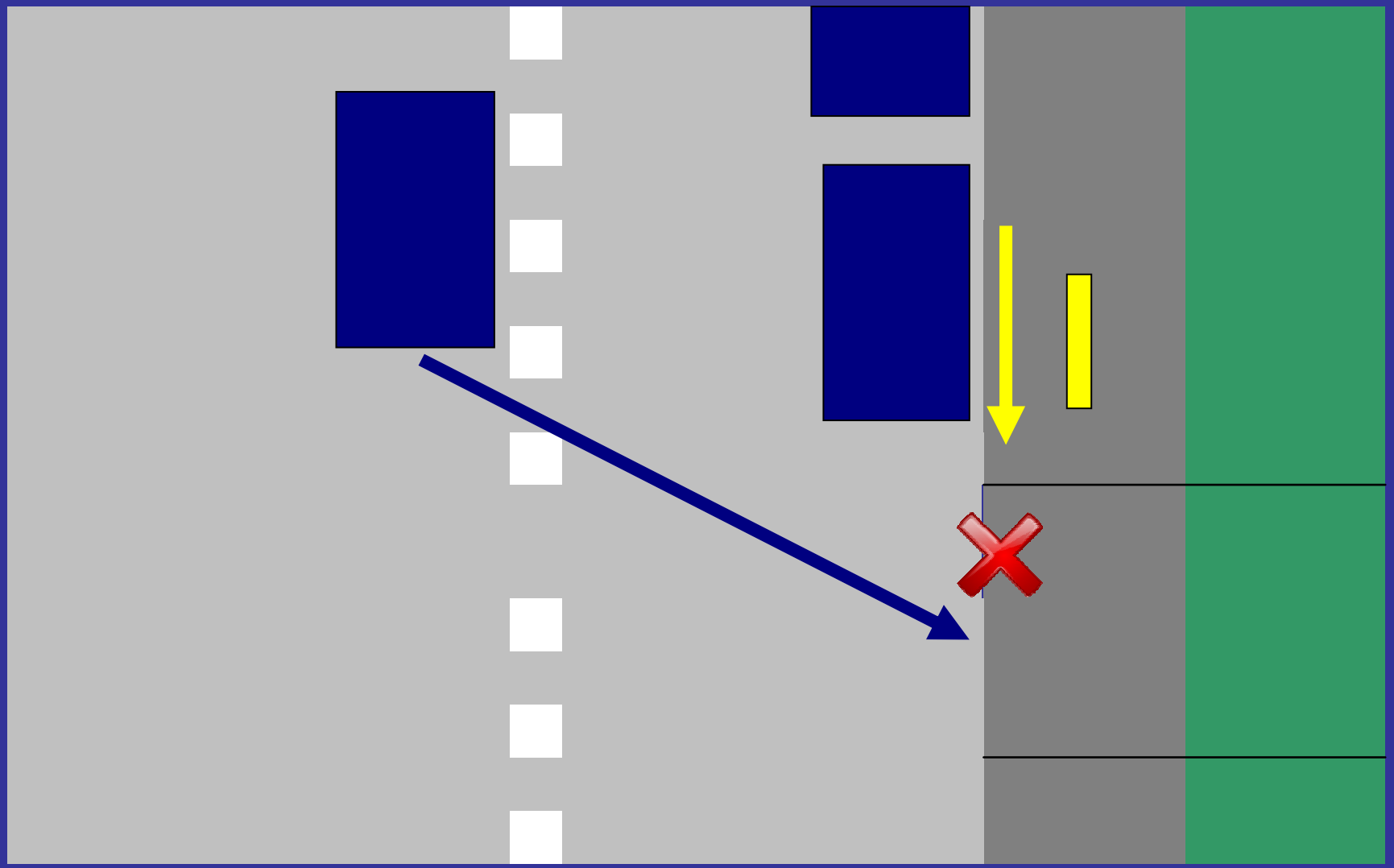
Footpath Riding
Child Cyclist vs car



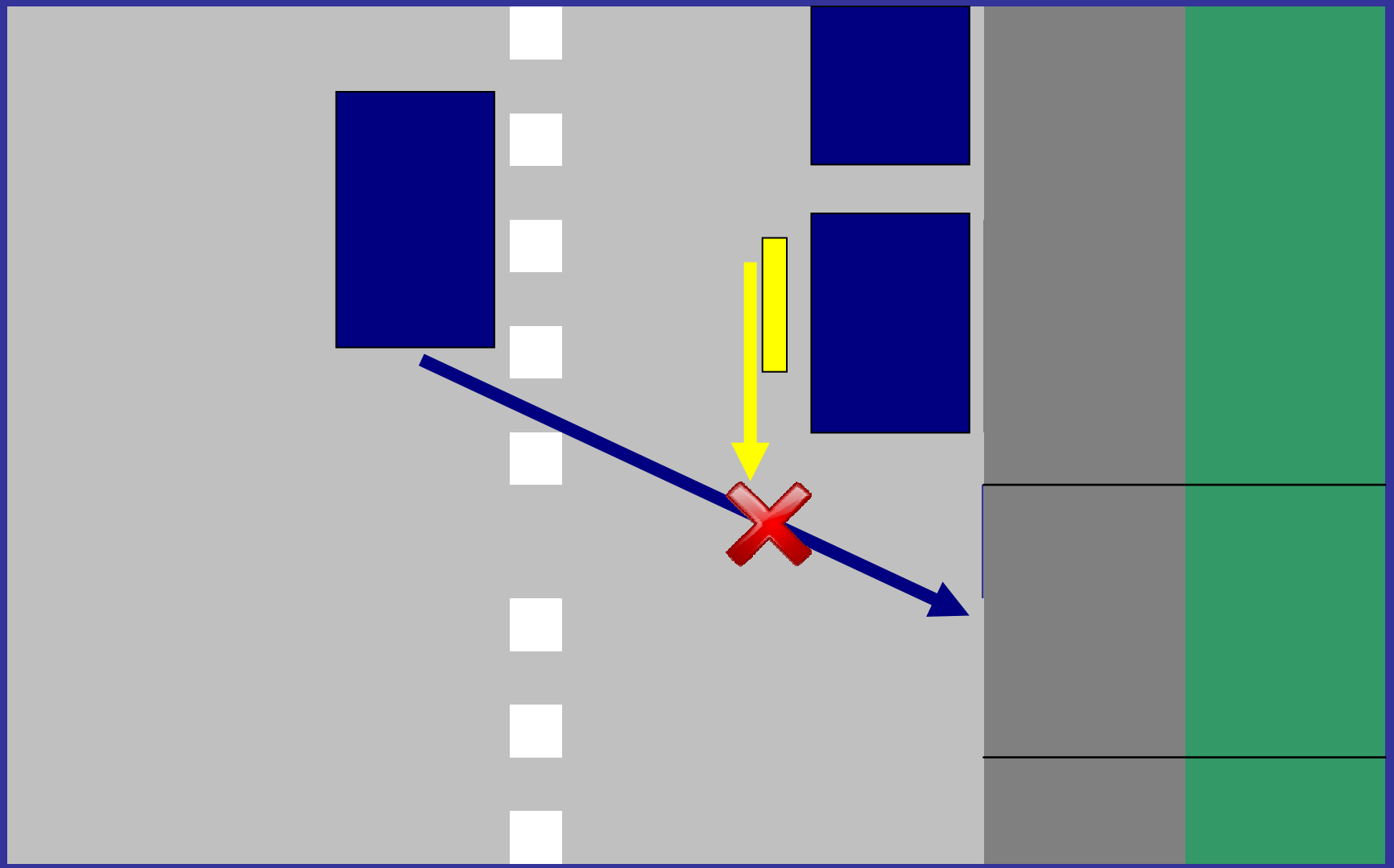
Footpath Riding
Child cyclist vs car



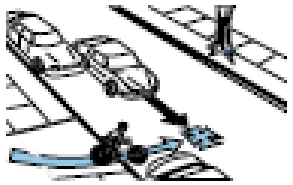
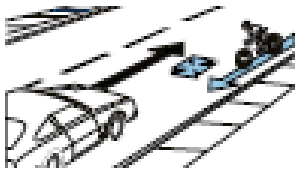
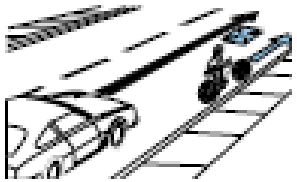
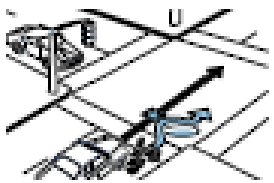
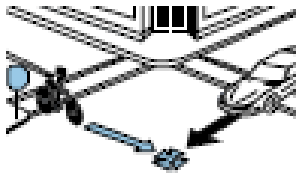
Foot Path Riding
Child cyclist vs car



Footpath Riding
Child cyclist vs car



Common Types Of Collisions
Between Bicyclists & Motorists

What Happens	What It Looks Like	What Bicyclists Should Do
Bicyclist Comes From Alley or Driveway Often called a "midblock ridout," this is the most frequent crash type for young riders and occurs soon after the bicyclist enters the roadway from a driveway, alley or curb without slowing, stopping, or looking for traffic. The bicyclist's sudden entry leaves the motorist too little time to avoid a collision.		**Always stop and look.** Look left-right-left for traffic before entering a roadway.
Bicyclist is Riding the Wrong Way Motorists do not expect traffic to be approaching from the wrong direction. This creates a situation for a crash, which is the main reason why it is unlawful to ride facing traffic.		**Go with the flow.** Always ride on the right side of the road, with traffic, just like cars do. It's the law.
Motorist Overtaking (Passing a Bicyclist) This type of crash occurs because the motorist fails to see and react to the bicyclist until it is too late. This type is more frequent at night, on narrow rural roads and often involves driver inattention and/or impaired driving.		**Avoid riding at night.** Avoid dark conditions, narrow roads, and roads with highway speeds over 35 mph. Use white front lights, red rear reflectors or lights, and special retro-reflective clothing if you must ride at night.
Bicyclist Makes Left Turn or Suddenly Swerves The bicyclist swerves to the left without checking traffic or without signaling and moves into the path of an overtaking vehicle. The motorist does not have time to avoid a collision.		**Be predictable.** Always ride in a straight line. When preparing to change your lane position, look behind you and yield to overtaking traffic. When making a turn, use the proper hand signal.
Failure to Obey Stop Signs Also called "stop sign ridout," this crash occurs when the bicyclist enters an intersection that is controlled by a traffic signal and collides with a motor vehicle approaching from an uncontrolled lane. The bicyclist fails to stop or slow before entering the intersection. This dangerous action does not give the motorist enough time to avoid a collision		**Obey all traffic signals and signs.** Watch for traffic signals. Walk your bicycle across busy intersections.

For more information on bicycle safety, visit the National Highway Traffic Safety Administration (NHTSA) Web site at: www.nhtsa.dot.gov

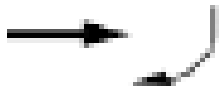
DOT HS 810 009
April 2007

Bicycle crashes involving children; *North Carolina Highway Safety Research Center (2006)* C Tan

- North Carolina data showed under 16s tend to be overrepresented in crashes where the cyclist was at fault.
- Crash types where this group are overrepresented include;
  - riding out or through intersections with stop signs,
  - riding out at non-intersection locations such as driveways, turning or merging in front of traffic, and
  - non-roadway crashes, including those in parking lots and driveways

Source: http://www.pedbikeinfo.org/pbcat/pdf/summary_bike_types5yrs.pdf

Crash movements for cyclists verses cars NZ

 RIGHT ANGLE (70° TO 110°)	Crossing (No Turns)	15.7%	This crash type involves a collision at a right angle, typically when both parties involved are moving straight through an intersection.
 MAKING TURN	Right Turn Against	14.5%	Approximately 75 percent of this crash type involves another vehicle turning in front of the cyclist. In 25 percent of cases it is the cyclist that is turning at the time of the crash.
 RIGHT TURN RIGHT SIDE	Crossing (Vehicle Turning)	11.7%	Approximately 85 percent of this crash type involves another vehicle turning in front of the cyclist while crossing an intersection. In the remaining 15 percent of cases it is the cyclist that is turning across the intersection at the time of the crash.

Cyclists Crash Statistics for the year ended 31 Dec 2006

Ministry of Transport New Zealand Government

NZ Crash Results
One Small CAS sample

- All NZ
- Age 0-14
- 2002 - 2006
- Riding on footpath (code 204)
- Total 202 entries
- Sample of ten – every twentieth

‘Cycling on Footpath Sample’

Ten cases

Serious injury = 2 Minor injury = 8

Range age = 8 to 14

Average age = eleven years

Median age = eleven years

Three rode into car on footpath at right angles

- One of these visibility was obstructed

Seven rode from footpath & hit car on road

- Two of these – cyclist was crossing on a pedestrian crossing

Proposal

- More …
  - Age related research / policy
    - Developmental factors of traffic competence
  - More use of *safe* footpaths
    - Grade separation
    - Speed controls
    - Bells on bikes
    - And more….

Children cycling safely

Thank you