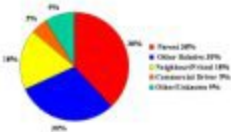


## Vehicle Driver

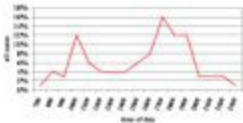


## Vehicles involved

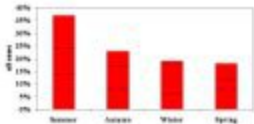
	n	N	LTSA
cars	55	71%	94%
van/light trucks	18	20%	2%
4x4	6	8%	4%
unknown vehicle	1	1%	

## Time of Accident

Percentage of Accidents



## Season



## Patient Ethnicity

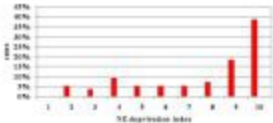
Census data 1996

NZ European	16	21%	49%
NZ Maori	24	31%	19%
Samoan	12	16%	8%
Cook Islander	10	13%	3%
Tongan	5	6%	4%
Asian	2	3%	7%
Others	8	10%	10%

## Mean Number of Children per Family by Ethnicity

NZ European	2.2	
NZ Maori	2.7	
Samoans	3.13	children per family
Cook Islanders	3.08	
Tongans	3.5	
mean in study group	3.4	
mean for Auckland	2.45	

## Socioeconomic Status



## Home Ownership amongst affected families

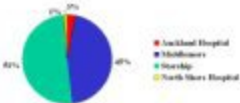
	Cases	Auckland
Owned	16%	60%
Rented	84%	38%
Of Rented Homes:		
Private Landlord	48%	30%
Housing NZ	36%	8%



## Type of Trauma

	Major Trauma		Minor Trauma	
Overall	57%		43%	
Head/Neck	17	28%	37	36%
Thorax	23	38%	17	17%
Abdomen	9	15%	20	20%
Limb	12	18%	27	27%

## Patient Presentation



**Paediatric Driveway Injuries in Auckland  
1998 - 2001  
A Preventable Tragedy**

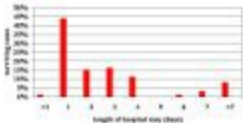


**Sarah White, Felicia Murphy, Philip Murreau  
Starship Children's Hospital**

## Results

- **Presentation of Patients**
  - 29% via GP
  - 48% use Ambulance
- **PICU admissions 22%**
- **Patient management**
  - 16% Operative
  - 84% Non-operative

## Length of Stay



## Results of Study

- Long-term complication rate: 11%

- Place of discharge:

Home	92%
Rehab	3%
Died	6%

## Conclusions

- Incidence unchanged at 8/100,000/year
- Predictable patterns of injury
- Severe injuries common 57%
  - Head
  - Chest
  - Lower Limb

## Conclusions

- Risk Factors

- Children 1-4 years

- Low SES

- Ethnic group

- Large families

- Vans



## Recommendations

- Education is critical ?
- fencing
  - cost-benefit analysis
  - legislation
- NB: success of Swimming Pools Act
- "difficult driveways" - better design needed
- mirrors, reversal alarms & proximity alarms inconsequential
- provision adequate play areas in community

## Final Conclusion

- Education targeted to those at highest risk
  - Physical barriers to driveway access
  - Better driveway design
- will reduce paediatric pedestrian trauma in New Zealand

## Acknowledgements

Alex Woodley and Simon Whitlock, Safekids

Paul Heta, Starship

Rangi Deneey, Auckland Hospital Trauma Service

Nicola Dow, Otago Injury Prevention Unit

Barry Gribben, Auckland Medical School

Wayne Gough, Statistics New Zealand

Kheang Chuan, Land Transport Safety Authority

Alan Muir, Water Safety New Zealand



## Boy dies after being run over by father

**By [Name]**  
A young boy died after being run over by his father in a parking lot. The father, [Name], was driving a white pickup truck. The boy, [Name], was sitting on the ground next to the truck. The father was driving the truck when it ran over the boy. The father was charged with [Charge]. The boy was taken to the hospital and died. The father was arrested and charged with [Charge]. The boy was [Age] years old. The father was [Age] years old. The father was driving the truck when it ran over the boy. The father was charged with [Charge]. The boy was taken to the hospital and died. The father was arrested and charged with [Charge].

The father was driving the truck when it ran over the boy. The father was charged with [Charge]. The boy was taken to the hospital and died. The father was arrested and charged with [Charge]. The boy was [Age] years old. The father was [Age] years old. The father was driving the truck when it ran over the boy. The father was charged with [Charge]. The boy was taken to the hospital and died. The father was arrested and charged with [Charge].

## Background

- Child deaths in transport accidents - NZ 3rd highest of OECD
- Pedestrian fatalities
  - 2X > Britain/USA
  - 3X > Australia
- 25% of pedestrian injuries in Auckland occur in residential driveways

- Typical scenario is a 2 year old child reversed over in their home driveway by a family member
- Severe injuries, PICU
- 2 patients per month at Starship
- Incidence unchanged over 15 years

## Aims

- Incidence
- Injuries
- Demographics
  - at-risk families
  - targeted public campaign

## Method

- Retrospective review of all children under 15 years injured on Auckland driveways from January 1998 to October 2001

Chart review

Parent interviews

Driveway inspection

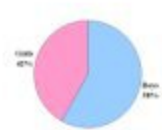
Coroner's files



## Results

- 77 cases from 76 accidents
- 5 fatalities
- incidence  
8 cases/100,000 children/year
- Age median 23 months  
range 1-12 years

## Gender Bias



## Location

