Childhood pedestrian Injuries:

Not everything that counts can be counted…

"Walk with your kids" project Team

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Children under 10 years of age are not able to cross roads alone

Prevalence of pedestrian injuries

- Transport accidents - *leading cause* of death in Australia among 0-14 year olds (twice as many killed in transport accidents than by drowning (ABS, 2005))
- Children are pedestrians in 20-50% of road traffic fatalities (AIHW, 2009)

Prevalence of pedestrian injuries

- In Australia 2005-2008, 334 children aged 0-14 years hospitalised with severe injuries were pedestrians (Henley & Harrison, 2011)
- In 2007-2011, 62 Australian children aged 0-14 years died from pedestrian injuries (Australian Transport Safety Bureau, 2011)

Outcomes

To enhance parents':

- Knowledge of the cognitive and developmental limitations of children under 10;
- Attitudes about the importance of parent involvement in pedestrian training for children under 10;
- Modelling of safer pedestrian behaviours;
- Advocacy for safer road environments for children;
- Self-efficacy to teach their children how to use roads more safely.

Window of emotional opportunity

- Researchers have reassessed children's cognitive and perceptual limitations in traffic
- Children can be trained from 4 years of age to use roads more safely.
- Vulnerable families – younger children

CPIPP Predictors of less adult supervision crossing roads

- Live in quiet street
- Other older children and larger families
- Younger parents
- Less educated
- Male respondents
- Belief in children's ability to cross roads alone
- No CPIPP program

CPIPP finding

Many parents believed their children were capable of crossing roads alone.

Road safety and your school?

- What characteristics of junior primary children increase their risk of injuries on the road?
- Most recent memory of a pedestrian injury involving a child at a school where you have taught?

School environment

- What features around your school help to increase children's road safety?
- What features around your school may put children at risk of road-related injuries?

Factors associated with child pedestrian injuries

- Inadequate search behaviour
- Mid block crossing injuries
- Less exposure to traffic
- Boys 2x higher injuries than girls
- Injuries predominately occur:
  - In residential areas
  - On local roads
  - Before and after school and lunch time

Children <10 years
Perceptual ability and size

- Underdeveloped peripheral vision
- Non-directional hearing
- Difficulty judging speed and distance of vehicles
- Physical size

Children <10 years
Cognitive development

- Tendency to be easily distracted
- Unpredictable behaviour
- Limited ability to respond quickly
- Inability to think about more than one thing at a time

- "I see driver so he/she can see me"

Parent Video

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Road safety best taught…

- Short, frequent segments
- Combination of school and home learning
- With direct relevance to real life situations – social context (not rote learning)
- Practical experience with positive feedback from an adult: one-on-one
- Discovery and problem solving rather than only 'rules'

5 actions adults can take to keep children safe near roads

- Supervise near roads
- Hold child's hand when crossing
- Teach road crossing skill and practice
- Involve children
- Model safe crossing behaviour

Project Overview

- Two-year project
- Pre-test parents August/Sept 2004
- Program delivery teachers & parents term 4 2004
- Post-test week 7 term 4 2004
- Parent booster
- Program delivery term 3 2005
- Post test August/Sept 2005/2006
- Parent booster 2005/06

Characteristics of kindergarten parent respondents

- 1250 students (age 4-6) / parents
- 28 schools
- 91% (766) mother respondent
- 68% (568) parent 30 years or older
- 43% (357) qualifications obtained after high school (eg. TAFE, university)

Child's exposure to road environment as reported by parents @baseline

School travel (usual)

- 74% (602) do not walk to school
- 25% (200) always walk with an adult to school
- 1% (12) walk without adult to school

Child's exposure to road environment as reported by parents

Street play area

- 61% (527) has played outside with access to roads

Street traffic at home

- 15% (125) a lot of traffic
- 36% (311) some traffic
- 48% (413) hardly any traffic

Parent pedestrian safety knowledge correct

- 54% (458) - Most 7 year old children don't have ability to cross roads safely without adult help.
- 77% (648) - Children aged 4-9 are unable to judge a safe gap in traffic.
- 48% (403) - When children aged 4-9 years see car in distance can't always tell if the car is moving.

Parents believe…

- 66% (563) - Teaching parents about road safety for children is needed at our school
- 99% (853) Important to begin practicing crossing roads when walking with kindergarten child

Parent pedestrian training behaviours…

- 92% (791) Hold child's hand when crossing the road
- 87% (748) Model safe road crossing
- 64% (551) Asked child to tell them when it is safe to cross the road
- 60% (506) Ask an adult for help
- 25% (217) Asked child to suggest safest place to cross the road

Children's crossing behaviours

- 59% (n=475) Asks adult for help when crossing road
- 66% (n=567) Asks to hold or takes adult's hand before crossing road
- 74% (n=629) Stops back from kerb before crossing road
- 53% (n=449) Thinks about when safe to cross road
- 52% (n=440) Looks for traffic in all directions before crossing road

Children's crossing behaviours

- 30% (n=255) Listens for traffic before crossing the road
- 60% (n=509) When road clear, walks straight and quickly across without running
- 20% (n=167) Are able to choose safest place to cross
- 68% (n=578) Are able to tell adult when the road is clear
- 38% (n=324) Continues to look and listen for traffic while crossing the road

Program components

- Whole school program ideas
- Parent 'walk and talk' materials (video, booklet, newsletter items, home activities)
- Summer 'booster' parent/children's pack
- Teacher materials

Results

Response rates:

- Schools – 32 approached to recruit 27 (84%)
- Parent Long Q - B 73% PT1 56% PT2 60% PT3 56%
- Parent Short Q - B 46% PT1 37% PT2 43% PT3 43%

Results

- All parents surveyed at each time point
- To assess intervention effect, used only parents in study from baseline and used responses from same parent over time (n=899)
- "Core group": n=734 (82%) completed Q at base and at least one PT

Core group characteristics

- Respondents were
  - mostly the mother (92%),
  - aged over 30 years (70%),
  - engaged in full-time home duties (62%),
  - 37% had less than a Yr 12 education and 42% had post-secondary training
  - 28% were the third or younger child
  - 52% lived on a street with some / a lot of traffic

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Dependent variables

- *Hand holding* (every time)
- *Adult supervision* (always)
- *Parent models* safe road crossing every time
- *Child* performs 2+ safe road crossing *steps*
- *Parent's knowledge* (80%+ correct)

% of parents who reported holding child's hand every time

	I	C	Tot
B Kindy (n=689)	71	72	71
PT1 Kindy (n=560)	78	67	73
PT2 PP (n=459)	73	56	65
PT3 Yr 1 (n=384)	65	41	53

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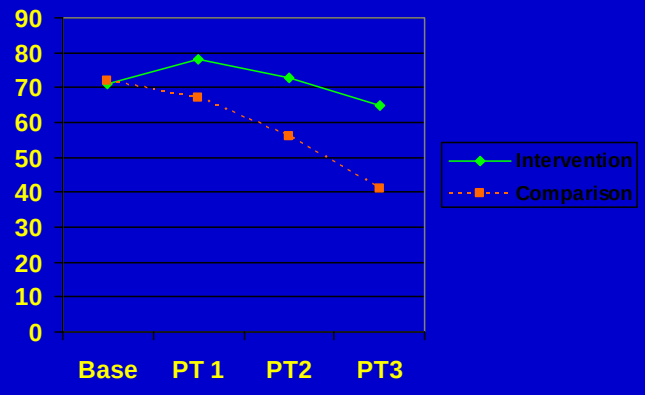
% of parents who reported holding child's hand every time



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Logistic regression results for hand holding

- Int parents more likely to report holding child's hand at each PT than Comp
- PT1: OR=2.4 **
- PT2: OR=2.6 **
- PT3: OR=3.2 **

** Significant at 1% level

% of children who only cross locations with adult

	I	C	Tot
B Kindy (n=680)	59	63	61
PT1 Kindy (n=562)	63	63	63
PT2 PP (n=458)	52	44	49
PT3 Yr 1 (n=386)	45	35	40

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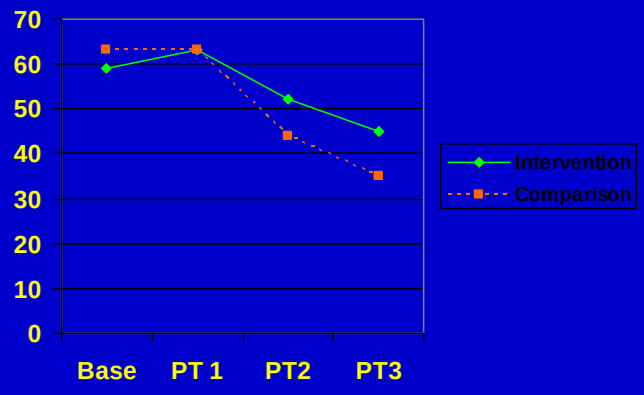
% of children who only cross locations with adult



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Logistic regression results for adult supervision

- No differences Int to Comp
- PT1: OR=1.0
- PT2: OR=1.6†
- PT3: OR=1.5

†p=0.056

% of parents who model safe road crossing every time

	I	C	Tot
B Kindy (n=690)	56	59	58
PT1 Kindy (n=562)	59	60	59
PT2 PP (n=460)	61	59	60
PT3 Yr 1 (n=380)	56	58	57

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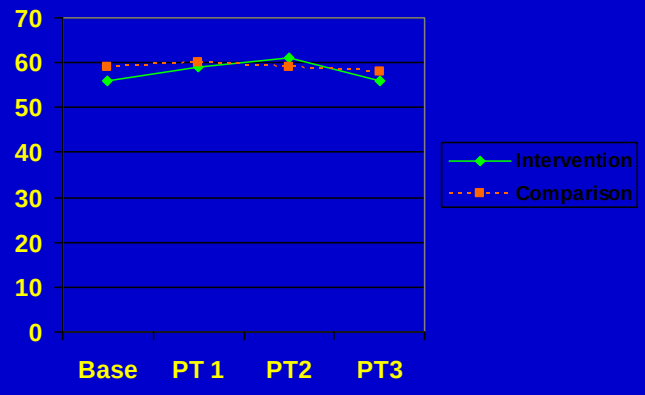
% of parents who model safe road crossing every time



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Logistic regression results for parent modelling

- No differences Int to Comp
- PT1: OR=1.0
- PT2: OR=1.1
- PT3: OR=0.9

% of children who perform 2 or more steps every time

	I	C	Tot
B Kindy (n=692)	25	20	23
PT1 Kindy (n=564)	31	17	25
PT2 PP (n=459)	33	19	26
PT3 Yr 1 (n=387)	25	20	22

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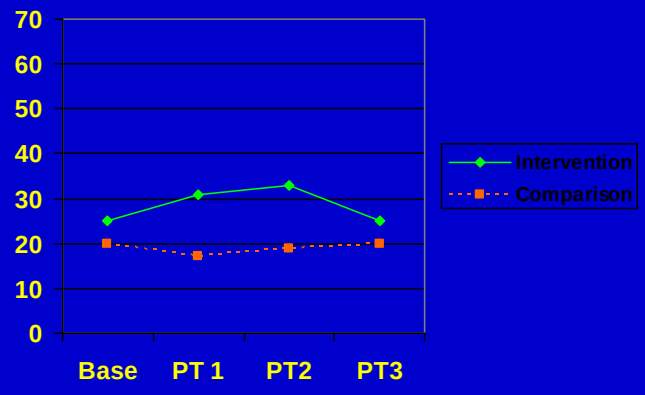
% of children who perform 2 or more steps every time



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Logistic regression results for child's steps

- Children in Int more likely to complete 2 or more steps every time than Comp
- PT1: OR=2.3**
- PT2: OR=2.0*
- PT3: OR=1.2

** Significant at 1% level
* Significant at 5% level

% of parents with 80%+ correct

	I	C	Tot
B Kindy (n=684)	36	37	36
PT1 Kindy (n=548)	60	46	53
PT2 PP (n=454)	62	46	55
PT3 Yr 1 (n=378)	68	53	61

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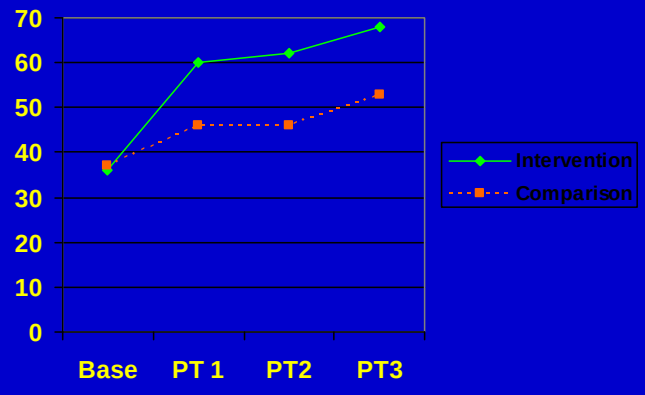
% of parents with 80%+ correct



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Logistic regression results for parents' knowledge

- Parents in Int more likely to answer 80%+ correct than Comp
- PT1: OR=2.0**
- PT2: OR=2.1**
- PT3: OR=2.0*

** Significant at 1% level
* Significant at 5% level

Limitations

- Metro, lower SES, government schools sampled
- Relatively low response rates
- Parent report

Conclusion

- ECPIPP intervention appeared to influence parents' behaviour (hand-holding), children's road crossing behaviour and parents' knowledge.
- Effects on whether parents always held their child's hand and their knowledge of young children's limitations, seemed to be sustained one year after the intervention.