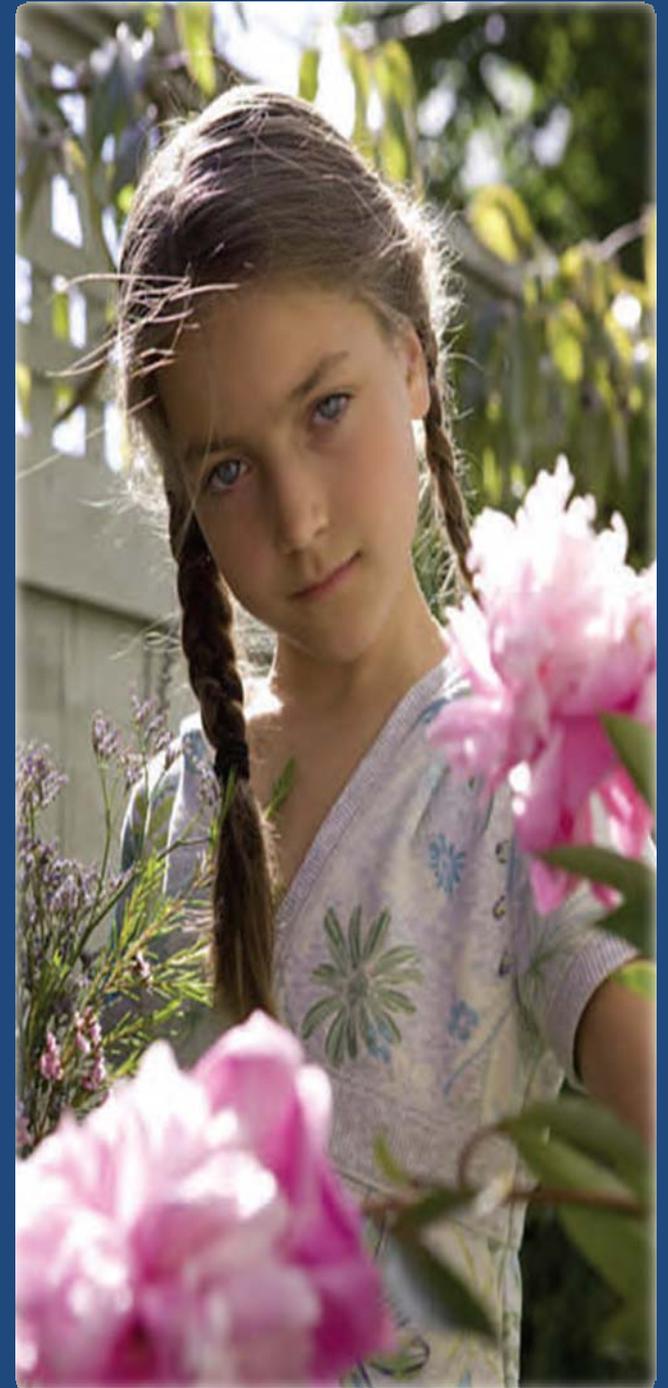


Understanding child pedestrian fatalities in British Columbia

Results of a collaborative study by the BC Coroners Service and BCIRPU



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Injury prevention in child death review - Child pedestrian fatalities (in press)

Collaborative study between the BC Coroners Service (BCCS) and BC Injury Research and Prevention Unit (BCIRPU)

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The problem



- **Child pedestrian incidents are a leading cause of injury-related death for Canadian children**
- **Each year in Canada over 2,400 child pedestrians are seriously injured and approximately 30 are killed**
- **Injury mortality is best understood from an ecological perspective**
- **More detailed epidemiologic data on child pedestrian injury is needed to support evidence-based decision making concerning policy, program and environmental interventions**

What is child death review?



- A multi-agency process that systematically collects data concerning the biological, behavioural, environmental and social determinants of injury over the child's life course.
- A powerful tool for both understanding the epidemiology of child deaths and catalyzing preventive action to reduce child mortality.

Child Death Review Unit of BC



Mandate

- To review, in an individual or aggregate basis, the facts and circumstances related to the deaths of all children 18 years and under in B.C.

Mission

- To better understand how and why children die, and to translate those findings into action to prevent future deaths and to improve the health, safety and well-being of all children in B.C.

Study objective



To describe the epidemiology of child pedestrian fatalities in B.C. using data generated by the province's Child Death Review Unit and demonstrate the unique capacity of child death review to provide an ecological understanding of child mortality and catalyze evidence-based, multi-level prevention strategies.

Methods



- **Case identification (n=33)**
- **Case assignment to CDRU case review specialist**
- **Review of coroners file and collection of additional information**
- **Data collection through application of case review protocol**
- **Multi-disciplinary team review to ensure data accuracy and determine preventability**
- **Extraction of data on demographics, circumstances of injury and risk factors related to the child, driver, vehicle and physical environment**
- **Calculation of descriptive frequencies and statistical comparisons where population data were available**

Variables

Demographic and socioeconomic factors

- Age
- Sex
- Involvement with MCFD
- Physical impairment
- Ethnicity
- Aboriginal ancestry
- Income assistance
- Parental unemployment
- Family structure

Time, location and physical environment

- Time and day
- Seasonality
- Road conditions and configuration
- Proximity to child's home
- Area density and type
- Type of road
- Driver visibility
- Signage
- Speed limit

Variables



Child factors

- Activity at time of incident
- Risk behaviour
- Supervision
- Distraction
- Toxicology

Driver and vehicle factors

- Age
- Sex
- Time of licensure
- Type and status of license
- Vehicle occupancy
- Driver error
- Toxicology
- Driver violation history

Key findings



Demographic and socioeconomic factors

Analysis of child pedestrian fatalities in B.C. identified a significant overrepresentation of:

- Males (64%, $p < .01$)
- Aboriginal children (12.1%, $p = .05$)
- Children within low-income families (18.2%, $p < .01$)

Key findings



Time, location and physical environment

- Incidents were most common during daylight hours (57.6%), in dry conditions (69.7%) and on a straight section of road (85.8%).
- Approximately half of the incidents occurred within 1km of the child's home (45.5%) and in a residential area (51.5%).
- Among incidents occurring on residential roadways, 85.7% occurred in areas with a posted speed limit of 50 kph or higher.

Key findings



Child factors

- Risky pedestrian behaviour was observed in 57.6% of fatalities, the most frequent actions being crossing or darting into oncoming traffic and walking or playing on the roadway.
- Only 33% of children below 10 years of age were under active supervision (i.e. within sight and reach) of an adult at the time of the fatal incident.

Key findings



Driver factors

- The majority of drivers were male (76%, $p < .01$).
- Driver error was identified in 36.4% of cases
- On average, drivers involved in a child pedestrian fatality had 9.7 previous violations on their driving record, significantly more than the general BC population who had an average of 2.7 previous violations ($p < .01$). Half (51.5%) of the drivers had been previously suspended or prohibited from driving.

Key findings



Vehicle factors

- The most common vehicle types were cars (48.5%) and pick-up trucks (24.2%)
- All incidents taking place on driveways (aka. non-traffic fatalities) involved sport utility vehicles or pick-up trucks, where visibility was limited due to vehicle configuration

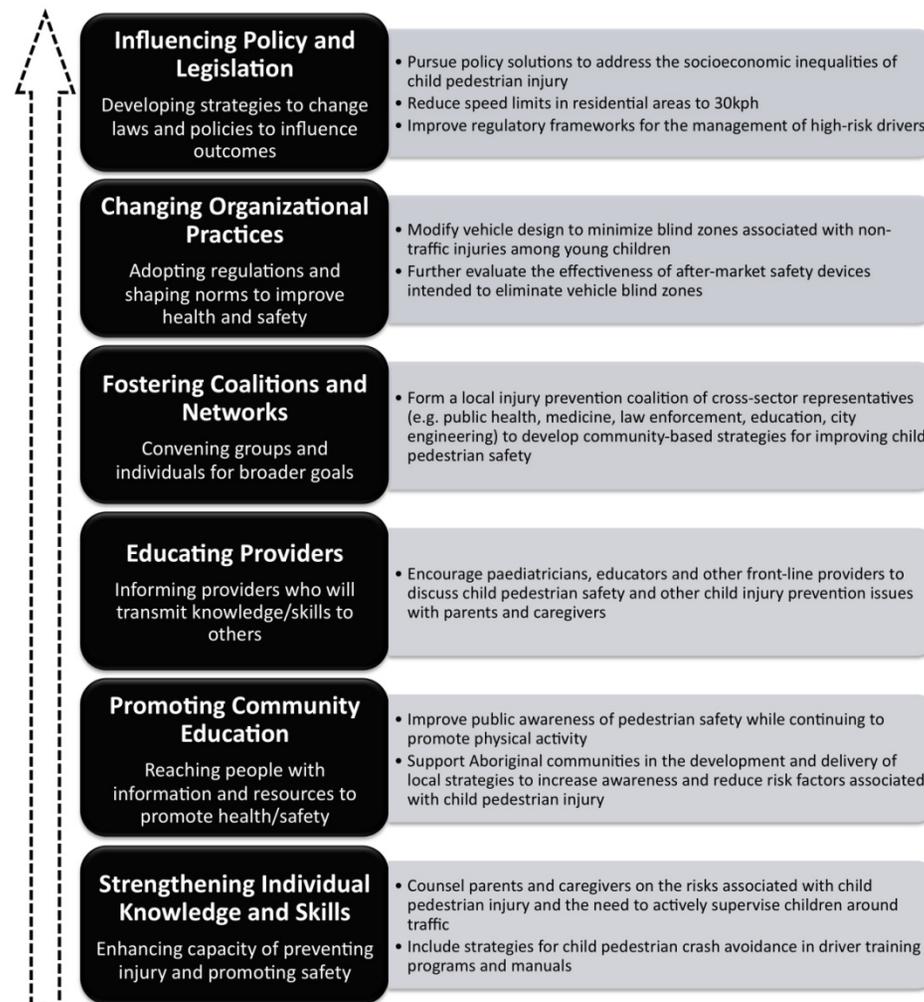
Key findings



Preventability

- Preventability is defined as a death in which, with retrospective analysis, it is determined that a reasonable intervention at the individual, community or system level may have prevented the death through modification of one or more risk factors.
- The majority (94%) of child pedestrian fatalities were determined to be preventable.

The Spectrum of Prevention



Take home points



- Previous driving violations may be associated with risk involvement in a fatal pedestrian incident in B.C.
- Aboriginal children and children within low-income families appear to be particularly vulnerable to pedestrian injury.
- Child pedestrian fatalities are largely preventable
- Child death review generates an ecological understanding of preventable child mortality and is a powerful tool for advancing evidence-based, multi-level strategies to promote and protect child health and safety.

In closing



Next steps

- CDRU special report on child pedestrian fatalities

Acknowledgements

- Licensing unit, ICBC
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THANK YOU.

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