

Brief to the Special Commission on Traffic Safety,
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I am a Saskatoon Paediatrician, and provincial board representative to the Canadian Paediatric Society. The CPS is a national organization composed of over 3000 paediatricians and other health care workers involved in child health, working together to optimize the health of Canada's children and youth.

I speak today as a parent, as a Pediatrician, as a CPS representative, and finally, on behalf of the children of the province.

I would like to focus my comments on two issues pertaining to road safety in children and youth. These comments are in support of legislation requiring booster seat use in children until 145 cm and 36 kg, and that making helmet use mandatory for all cyclists.

Booster Seats

Booster seats are proven to significantly reduce serious injury and death in children from 5-8 years of age, but our province has not yet enacted legislation requiring their use.

Among children over 4 years of age, both in Canada, and the U.S., the leading cause of death is motor vehicle collisions.

Historically, laws making seat belt use mandatory led to a dramatic decrease in motor vehicle fatalities. It was, however, recognized that this failed to protect infants and young children. Studies showed that, in comparison to seat belts, child safety seats designed to restrain those from birth up to 4 years of age decreased the rate of injury in motor vehicle collisions by 71-82%, and the risk of death by 28%.

This realization led to the passage of car seat legislation

throughout Canada and the world, which, coupled with improvements in vehicle design, led again to a significant decrease in morbidity and mortality in the infant and young child population. Currently, in Saskatchewan this covers children up to 18 kg, obtained, on average, at 5 years of age.

Subsequently, data began to accumulate about the increased vulnerability of a new population; those 5-8 years of age: too old for child car seats, but not yet old enough for adult seat belts. Children this age suffer injuries at almost twice the rate of younger infants and older children because of inappropriate restraints.

Adult seat belts fit poorly, with the shoulder strap passing along the neck, rather than the shoulder. The child risks "rolling out" of the seat belt, particularly in an opposite side crash. Sometimes the shoulder portion is not used because of comfort. Also, because of the child's small size, the lap belt portion fits around the abdomen - vulnerable to injury, rather than the strong bony pelvis where it is designed to rest. This can lead to the child "folding" around the belt and sustaining a specific pattern of injuries known as "lap belt syndrome" which includes a spectrum of injuries to the bowel, abdominal organs, and/or lower spine, which can lead to paraplegia. They are also four times more likely more likely to suffer head injuries.

Studies have shown that children restrained in booster seats suffer less than half (41% - 49%) of the injuries as those of similar age who are inappropriately restrained with adult seat belts.

As this became apparent, many jurisdictions subsequently moved to protect this population, including at least 47 of the US states. In Canada, all but two provinces have since passed legislation mandating booster seat use, the exceptions being Saskatchewan and Alberta.

Booster seats come in two general types, the convertible one, which uses a child safety seat, but switches from using the built in child safety harness to using the adult seat belt, or a simple low "belt positioning" booster seat, which elevates the child some 12 - 15 cm, putting them in a position for the seat belt to fit more appropriately, over the shoulder, and around the hips. This type of booster seat is relatively inexpensive, in the range of 30 – 40 dollars. They are also much simpler to use, with lower frequency of incorrect use, as they don't need to be secured to the vehicle, and are simply used with the adult seat belt. Many cars now even come with a built in booster.

Saskatchewan data published do not allow comparisons, but a study in Wisconsin revealed that over a four-year period there would have been 16 fewer deaths and 84 fewer injuries requiring admission to hospital simply with booster seat use by all 4-7 year olds. Just one death that could have been prevented by such legislation is one too many.

Based on review of the literature, the Canadian Pediatric Society's Injury Prevention Committee recommends booster seat use until a height of 145 cm, or roughly 4'9", at which time an adult seat belt will appropriately fit. They also use age criteria: over 8 years of age, and weight criteria: over 36 kg, or 80 pounds. Additionally, they should ideally be seated in the rear seat. The American Academy of Pediatrics has similar recommendations.

Pediatricians, family physicians and other health care providers all do what they can, educating families about safe seat choice and use, but their efforts could be significantly aided by legislation.

It has been shown that legislation is effective in inducing behavior change. Surveys conducted of booster seat use in provinces with and without legislation have shown significant differences in use, the presence of legislation almost doubling use, and decreasing

fatalities. In the US, studies have shown that parents look to legislation as a source of information about restraint use, saying, for example “we put her in a seat belt when she turned five, because that’s what the law says.” Use in these studies is still sub-optimal, as legislation by itself cannot achieve 100% compliance, but coupled with enforcement and public education, it can go a long way.

Currently adult seat belt use is upwards of 95% in Canada, and 96.8% in Saskatchewan. This came about by a combination of legislation, enforcement, education and the passage of time - which has changed the social norm.

You have a chance to begin that process now in our province, with respect to booster seats. I urge you to establish legislation that will further protect the 4-8 year old children of the province. Legislation, coupled with enforcement and education, can reduce the rate of injury and death by half.

Bicycle helmets

The second topic I would like to address is that of bicycle helmets, again shown to significantly decrease the rate of serious injury and death among cyclists.

I am a great proponent of encouraging kids to ride bikes, an enjoyable environmentally friendly activity, but they should be doing so in a safe manner. Studies have shown that an appropriately worn bicycle helmet can decrease the risk of serious head injury by as much as 85% - 88%. Yet again, Saskatchewan has not enacted legislation requiring helmet use, despite studies showing that 80% of parents support such legislation.

Education alone does not work. Studies of youth 12 to 19 years of age indicate that only 31.8% report always wearing a bicycle helmet when riding. As discussed earlier, legislation is effective. Compared to jurisdictions without mandatory helmet laws, those with, show significantly greater use and injury rates that are generally 25% lower.

The consequences of lack of helmet use are clear. One 2004 report cites the direct and indirect costs of cycling injuries on roadways to be \$443 million, over half of which involves children and youth. Cost benefit analysis estimates that 29¢ in injury costs could be averted for every one dollar invested in bicycle helmets. Apart from the monetary aspects, it has been calculated that every year, 20 children and youth 19 and under die as a consequence of bicycle-related injuries, and another roughly 50 experience permanent disability.

The CPS first issued a report in 2005, calling for all provinces to enact legislation that would require everyone riding a bicycle to wear a CSA approved bicycle helmet. If all provinces had done so at the time, coupled with appropriate education and enforcement, and we use the conservative estimate that 80 % of head injuries could have been prevented by helmet use, this leads to a calculation that there would be 128 more children alive today, and 320 less living with the consequences of severe traumatic brain injury. Some of those would have lived in Saskatchewan.

I do not want to see any more of Saskatchewan's children become a needless statistic. I urge you to consider their future, and take a leadership role today to protect its youngest citizens by enacting evidence-based legislation for both bicycle helmets and booster seats.