

## Child Occupant Protection

### Burden

In Manitoba, motor vehicle collisions were the leading cause of injury death in children between 1 and 9 years of age. Motor vehicle collision is also a cause of serious injury-related hospitalizations in this age group (Manitoba Health Injuries Report: 2000-2012). Consistent use of the appropriate child safety seats can significantly reduce fatalities and serious injury. It is estimated that every dollar spent on booster seats saves society \$71 and every dollar spent on child car seats saves \$42 (Children's Safety Network, 2014).

### Evidence

Properly used car seats and booster seats have been shown to reduce injuries and deaths. Car seats reduce the risk of injury by 71-82% and the risk of death by 28% when compared with children of similar age in seat belts alone (Elliot, Kallan, Durbin & Winston, 2006). Rear-facing infants between 1 and 2 years of age are 5 times better protected than those forward facing (Watson, Monteiro, 2009).

Of all motor vehicle occupants, children between 4 and 8 years of age are the least likely to be properly restrained when travelling in a vehicle (Snowdon, 2010). In children less than 8 years of age, booster seats reduce side-impact injuries by 82%, serious injuries by 45%, and all types of injuries by 14% (NHTSA). In 2011, Transport Canada estimated that only 30% of children in this age range use the correct car seat or booster seat. Observational studies in Winnipeg show only 30% use of booster seats.

There is also an ongoing problem with incorrect installation and use of child safety seats. A 2008 Manitoba study (Blair, et al.) showed that overall 70% of car seats were used incorrectly with the most serious errors being loose harness straps, incorrect chest clip position and progressing too soon to a booster seat.

As of August 8, 2013, it is mandatory for child passengers in Manitoba to use a child safety seat until they are 4'9" in height, 80 pounds or 9 years of age. Of these three points, height is the most significant factor in ensuring the seatbelt fits the child correctly.

**Car seat and booster seat use have been shown to increase with programs that include education, fitting, distribution, and legislation.** (Cochrane systematic review; Zaza, 2001; Turner, 2005; Truong, 2013; Ehiri, 2006)

The **American Academy of Pediatrics** has five best practice recommendations in their 2011 Policy Statement:

1. All infants and toddlers should ride in a rear-facing car safety seat (CSS) until they are 2 year of age or until they reach the highest weight or height limit allowed by the manufacturer of the CSS.
2. All children 2 years of age or older or those younger than 2 years who have outgrown their rear-facing weight or height limit for the CSS should use a forward-facing CSS with a harness for as long as possible , up to the highest weight or height allowed by the manufacturer of the CSS.
3. All children whose weight or height is above the forward-facing limit for their CSS should use a belt-positioning booster seat until the vehicle /lap and should seat belt fits properly, typically when they have reached 4'9" in height and are between 8 and 12 years of age.
4. When children are old enough and large enough to use the vehicle seat belt alone, they should always use a lap-and-shoulder seat belts for optimal protection.
5. All children younger than 13 years of age should be restrained in the rear seats of vehicles for optimal protection.



## At IMPACT

We work closely with Manitoba Public Insurance and Manitoba Healthy Living on child occupant protection promotion, which has resulted in more coordinated approach to planning and messaging.

Of all motor vehicle passengers in Canada, children between 4-9 year of age are the least likely to properly protected. Injuries to inadequately restrained children can be catastrophic as they often involve injury to the internal organs and/or spine. When it comes to child occupant safety, IMPACT has focused on booster seats.

### Injury Surveillance and Data

IMPACT monitors the burden and characteristics of child motor vehicle occupant injury (number, severity, type of restraint used). We do this annually as to direct our program planning. We conduct original research on car seat and booster seat use rates.

### Leadership and Collaboration

IMPACT works in partnership with Manitoba Public Insurance and Manitoba Healthy Living to develop policies, programs and resources that promote optimal child restraint use. We have partnered with Manitoba Public Insurance, The Rehabilitation Centre for Children and Winnipeg Children's Hospital to run a special needs car seats loan program. We will engage and work with variety of partners to address access to affordable/no cost car seats for low income families.

### Communication

Our goal is to raise awareness and educate parents and professionals about current child car restraint guidelines. In particular, there are some key messages that we want people to understand so that children can travel safely. One key area is booster seats, why they are important, the height, weight and age specified for use through provincial legislation, and proper use. Also, new research indicates that young child occupants are safer when riding rear-facing- up to age 3. Other key problems that we will be addressing include children riding prematurely in the front seat and children riding unrestrained in vehicles. We use print resources, public events such as the Teddy Bears Picnic, professional presentations and earned media to educate parents and practitioners on car seat safety.

IMPACT continues to monitor and communicate with the public and professionals about significant changes to child restraint guidelines.

We make educational resources available online and in print. We distribute and promote resources through healthy schools, MPI offices, primary care, emergency departments, parent child coalitions, daycares. One of our upcoming projects is to develop and evaluate car seat resources for newcomers and parents with low literacy skills.

#### Resources for the public, community, and professionals

- Booster Seat Banner Bug Display
- Booster Seat Growth Chart
- Booster Seat Consumer Guide
- Securing your Precious Cargo with Booster (MPI, 2015)
- Rear-facing Poster (MPI, WRHA, MB Government)
- Transport Canada Car Seat Stage Fact Sheets (translated in 5 languages)

### Strengthening Capacity

Our goal is to provide training to healthcare professionals and external partners so they can learn the basics of child car seats in order to provide basic information and referral to community resources to their clients.

### Policy and Advocacy

IMPACT has long been an advocate for provincial booster seat legislation, supported by our booster seat research and observational data. In August 2013, legislation requiring that children in Manitoba must use a booster seat until they are age 9, weigh 80 lbs. or 4'9" in height came into effect. We will continue to advocate for programs and policies that make child occupant safety affordable to families from all backgrounds and income levels, which would include making car seat fit stations accessible.

## **Applied Injury Prevention Research**

We monitor of existing research to identify issues and trends child occupant injuries to inform our injury prevention activities. We conduct original research such as observations, phone surveys and focus groups to gain a better understanding of the regional use of child restraints.

## **Health Equity Promotion**

Because keeping kids safe is important to families from all socio-economic groups IMPACT has worked to offer free car and booster seats to low income families. Seats were distributed through the Public Health Nurses and Families First Home Visitors. In 2014, we piloted the Winnipeg Child Car and Booster Seat Loan Program with a local community group and in collaboration with Manitoba Public Insurance. We are currently investigating a sustainable model for this program.

