

# Child Passenger Safety

WRHA Injury Prevention Program

Public Health and Parent Child Coalitions Meeting

April 9, 2015



# Objectives

## **We will review:**

- Why Child Passenger Safety?
- Child Car Seat and Booster Seat Key Messaging
- Booster Seat Growth Chart
- Standing Floor Display
- Recommended Handouts





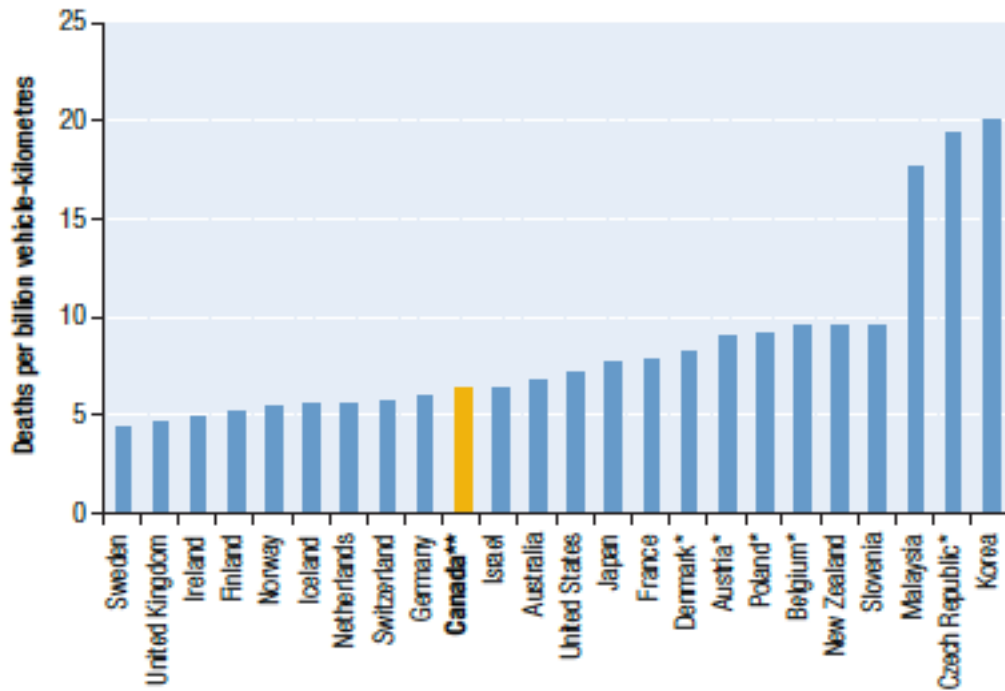
# Why Child Passenger Safety?

- “Traffic crashes are the leading cause of death for children of every age from 5 to 14 years - a fact that can be linked, at least in part, to the reality that most kids are unbuckled or improperly restrained in vehicles.” (NHTSA)



# Canada in Context

**FIGURE 1.1**  
Deaths per billion vehicle-kilometres in 2009, by country



# Leading causes of death

**TABLE 2.1**

**Leading causes of injury-related mortality in Canada, 2007, both sexes combined, by age group**

Age group	Leading cause of injury death
Infants	Suffocation
1-24	Motor Vehicle Traffic Collisions
25-69	Suicide
70+	Falls



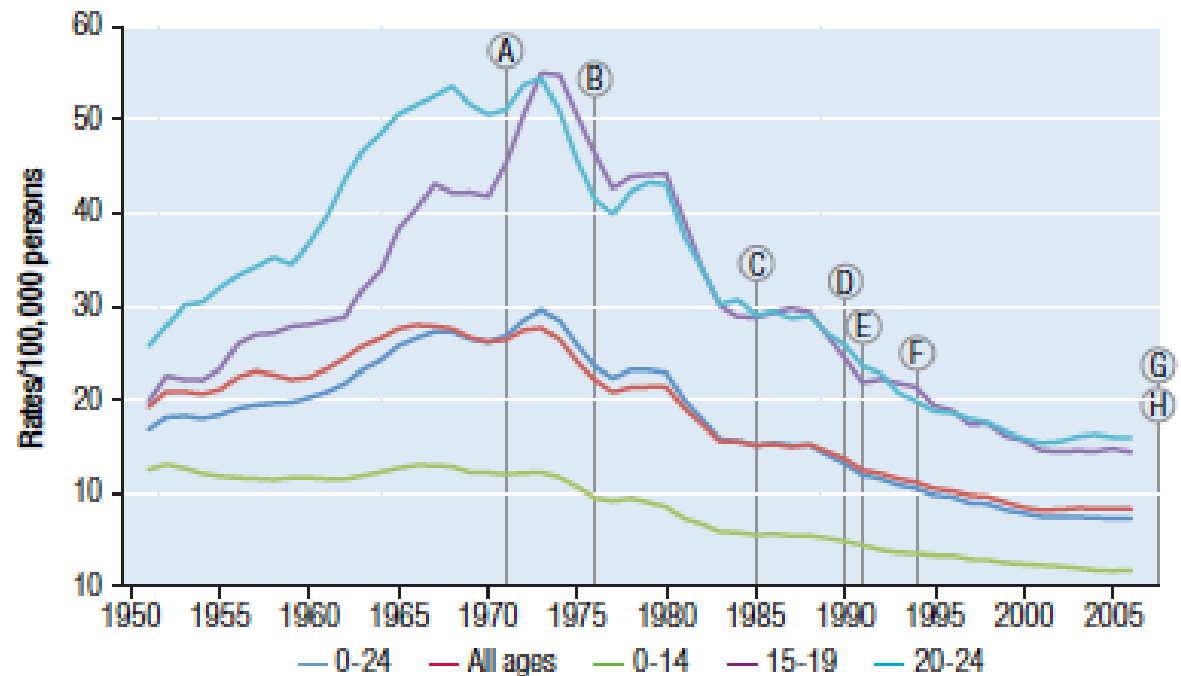
# Road Safety Interventions

## Benchmarks of select road safety legislation in Canada

- (A) **1971:** Seat belts required in all new vehicles<sup>2</sup>
- (B) **1976:** Ontario is the first jurisdiction to pass the mandatory seat belt law<sup>3</sup>
- (C) **1985:** Amendments to the Criminal Code resulted in tougher penalties for impaired drivers<sup>4</sup>
- (D) **1990:** Canadian Motor Vehicle Safety Standard 108 (CMVSS 108) requires daytime running lights on all vehicles made or imported after January 1st, 1990<sup>5</sup>
- (E) **1991:** Seat belt legislation enacted in all jurisdictions<sup>6</sup>
- (F) **1994-2005:** Graduated licensing programs introduced in most Canadian jurisdictions<sup>7,8\*</sup>
- (G) **2008:** New Criminal Code provisions on impaired driving give police better tools to detect and investigate alcohol- and drug-impaired driving. These changes increase the maximum sentences and toughen mandatory penalties.<sup>9</sup>
- (H) **2010:** By 2010, hand-held cell phone use while driving banned in: British Columbia, Saskatchewan, Ontario, Quebec, Prince Edward Island, Nova Scotia, and Newfoundland and Labrador<sup>10</sup>. Canada Motor Vehicle Safety

**FIGURE 2.4**

**Motor vehicle traffic-related mortality in Canada, 1950-2007, selected age groups, standardized rates/100,000 persons**



# Manitoba Data - Deaths

- Deaths: CPSM unpublished data
- 2009-2013 (preliminary for 2013)
- 43 occupant deaths, range 5-11 per year
- 34 were teens, 13 drivers
- 22 were unrestrained (some unknown)
- Many alcohol-associated crashes



# Manitoba Data - Hospitalizations

- Trauma database (HSC) 2004-2011
- 50% of admissions are transport-related
- 9132 trauma admissions, age <20
- 452 due to Motor Vehicle (traffic),
- 169 with ISS = 12 or more
  - vs 65 pedestrians
  - vs 41 cyclists





# Evidence/Guidelines

- Systematic reviews (Cochrane, Community guide, CORE BC evidence review)
- Child passenger safety guidelines with summaries of evidence:
  - AAP policy statement, Technical report (2011)
  - CPS statement (2008)
- Road safety information/policy
  - Transport Canada, MPI, MIT



# Child Restraint Use

- Snowdon/Transport Canada (2010)
- Correct use rates (60% overall for MB)
  - 88% infants less than 1 year of age
  - 78% toddlers 1-3 years of age
  - 39% age 4-8
- Front seat: 3.4% of infants, 3.7% of toddlers, 17.5% age 4-8
- Unrestrained: 8.7% in Manitoba



# What works?

- Legislation/enforcement
- Education
  - Individual (counseling, inspection, DVD)
  - Group (public/media/community-based, parents)
- More effective when incentive/access programs included in strategy
- More effective when combined approaches



# What can we do?

- Who:
  - WRHA: Public health, Primary Care, Child Health, Women's Health
  - Partners: MPI, MB gov't, Healthy Child, PCC
- Infants/toddlers: Prenatal, postpartum guidance (individual, group, future web/email/text-based strategies?)
  - Promote correct Age/stage, safety tips/key messages
  - Promote car seat inspections
- Older children: Booster seats, back seat guidelines
  - Kindergarten entry (letter, fair), TB picnic, MPI
- Access/disparity strategies



# **Child Car Seat and Booster Seat Key Messaging**

**Car Seat Stages and Current  
Best Practices**



# Stage 1

## Rear-Facing

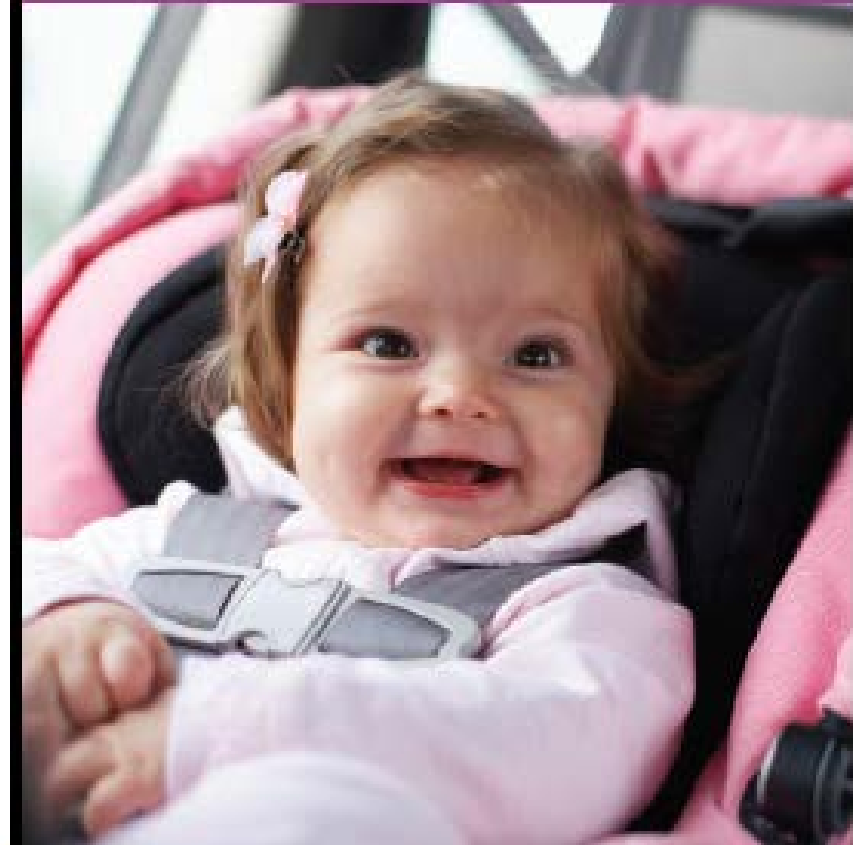
- Birth – age 2
- Up to 20kg (45lb)
- Why rear-facing?
  - Large head
  - Weak neck
  - Spinal cord injuries
  - Serious injuries



# Rear-facing is Safer

- Children 0-23 months
- US NHTSA crash data, 1988-2003
- Children 12-23 months are **5 times safer** rear-facing than forward-facing

Please...keep me rear-facing!



# Stage 2

## Forward-Facing Child Seat

- Age two years to seat limits
- Up to 30kg (65lb), as long as possible
- Supports younger children better than a booster seat
- How does it work?
  - Harness secures the child
  - Seat belt or UAS secures the restraint
  - Tether anchors the top of the restraint





# Stage 3

## Booster Seat

- By law until 9 years, 4ft 9 inches, or 80lb
- AAP – until age 8-12
- Minimum 18kg (40lb), not too early!
- How does it work?
  - Improves lap belt fit
  - Improves shoulder belt fit
  - Reduces head movement forward



# Stage 4

## Seat Belt

- Age 9 years
- Height 4 feet 9 inches
- Weight 36kg (80lb)
- How does it work?
  - Lap belt
  - Shoulder belt





# Key Messages

- Keep child in their current seat **as long as possible**, until he/she has outgrown the height/weight limit of the seat.
  - Rearfacing to age 2
  - Forward-facing with harness to at least age 5
  - Booster to age 9 (or 4ft 9 in or 80lb)
- Children should ride in a car seat that is appropriate for their age and size for *every* ride.
- Always follow the manufacturer's instructions for the installation and use of the car seat.





# Key Messages

- Have the car seat inspected by a certified car seat technician.
- Avoid “extra” accessories that are sold separately such as pads that go under the child or under the seat.
- The safest position in the vehicle is the middle of the back seat.
- Children should ride in the back seat until age 13.



# Premature Graduation

- **Keep in each stage as long as possible**
- Infants are safer rear-facing to age 2
- Toddlers and young children stay in position better in a FF car seat than a booster, even though they meet the 40lb weight limit of a booster seat
- Many children who are 9 years old do not fit an adult seat belt and should continue to use a booster seat





# Car Seats on the Market

- Infant only
- Convertible (RF and FF)
- Booster
  - Transitional (harness) and/or Belt-positioning
  - High back or backless
- Combination (3 in 1)



# Car seat stages

## Stage 1 Rear-facing Seats

Use until your child outgrows  
the car seat's weight/height limits\*



## Stage 2 Forward-facing Seats

Use until your child outgrows  
the car seat's weight/height limits\*



## Stage 3 Booster Seats

Use until your child outgrows  
the car seat's weight/height limits\*



Birth

10 kg  
(22 lbs.)

14 kg  
(30 lbs.)

18 kg  
(40 lbs.)

30 kg  
(65 lbs.)

36 kg  
(80 lbs.)

\*Weight requirements may vary by manufacturer. Check car seat manufacturer's instructions and vehicle owner's manual before use. If you have any questions, call the manufacturer's help-line. Many of their toll-free numbers are printed on pages 6 and 7.



All car seats available at Babies"R"Us stores meet Transport Canada's strict safety standards. Adherence to these standards can be identified by the National Safety Mark affixed to each car seat. Only car seats which bear this mark can be legally sold or used in Canada.

# Infant Seats

- Always rear-facing
- With or without a base
- Weight limits:
  - Minimum 4-5lb
  - Maximum 20-45lb
- Straps: below shoulders
- Install with seat belt or UAS



Cosco  
Designer 35







# Infant Seats

- Tighten the harness straps so that no more than two fingers fit between the straps and the child. Position the chest clip at armpit level.
- Keep the carrying handle down when in the vehicle.
- Dress baby warmly on cold winter days but avoid bulky clothing and tighten the harness securely.
- Remove covers/blankets in vehicle and indoors, keeping baby's face uncovered. Do not use a car seat cover or blanket that is placed behind or under the child.





# Infant Seats

- Watch that baby does not overheat while in the car or indoors.
- Remove the hood and unzip the snowsuit or jacket if baby is too warm.
- Infants should not be placed in a car seat to sleep indoors.
- Children in car seats should not be placed on raised surfaces, such as a table.



# Convertible Seats

- Rear-facing for infants
- Forward-facing for toddlers
- Weight limits vary
- Always tether for forward-facing
- Restraint systems
  - 5 point harness or 3 point harness with shield (older style, not recommended)



Century/Graco  
Bravo  
5-point





# Booster Seats

- Booster seats are the law in Manitoba
- A booster seat lifts the child up so that the shoulder belt and seat belt are positioned correctly across the child's body
- Child must be 4'9" or 80 lbs or age 9 to transition to a seat belt, according to the new Manitoba law
- Height is the most important factor in seatbelt fit.





# Seat Belt Fit Test

1. Does the child sit all the way back against the seat?
2. Do the child's knees bend comfortably at the edge of the seat?
3. Is the lap belt on the tops of the thighs?
4. Is the shoulder belt centered on the shoulder and chest?
5. Can the child stay seated like this for the whole trip?

**If you answered **NO** to any of these questions,  
your child needs a booster seat.**



# Booster Seat Effectiveness

- 82% reduction in side-impact injuries, 45% reduction in serious injuries, and 14% reduction in all types of injuries among children less than 8 years of age (NHTSA)
- Booster seat legislation increases use and decreases injuries and deaths
  - Deaths: adjusted incidence rate ratio 0.89 for 4-5 year olds (95% CI 0.81–0.99), 0.77 for 6 year olds (95% CI 0.65–0.91) and 0.75 for 7 year olds (95% CI, 0.62–0.91) (FARS data, Mannix 2012)



# Booster seats on the market

- Stage 3 only
  - Backless
  - High back



- Stage 2/3



- Stages 1-3



# Low cost booster seats

- Major retailers: as low as \$10-15
- No PST as of July 1st
- Car/booster seat loan program piloted, new options being explored
- In the meantime call IMPACT for low income families with no other option





# **Recommended Resources for Parents**

**Display, Growth chart, Handouts**



# Standing Floor Display

## Designed to...

- Help educate parents about car seat stages
- Support Manitoba's new booster seat legislation by offering a simple visual to assess a child's height requirement for booster seats





# Standing Floor Display

## Suggested uses:

- It is only effective when it is being used
- Display it at community fairs and health expos, loan it to local schools, day cares and doctors' offices in your area
- If using at a staffed event, you can place it in the middle of the room so you can show both panels
- Offer a weigh/ measure activity using a measuring stick or growth chart, and scale to weigh and measure each child



# Booster Seat Growth Chart

- Growth charts similar to the booster seat panel are also available through Materials Distribution Agency (MDA)
- Printed French on one side/ English on the other
- The growth charts are 18 x 39" and are intended to be posted on a wall or a door



# Recommended Handouts

- MPI (Securing your precious cargo)
  - + Booster seat bookmark (see below)
  - + Rearfacing insert
- Transport Canada (optional)
  - One handout for each stage
  - Multiple languages
- Manitoba Healthy Living legislation bookmark (I need a boost)





**Questions?**



**Thank you!**



# **Car Seats and Booster Seats**

**FAQs and Other  
Considerations**





# Incorrect Use: Car Seats

- 80% of car seats are installed are used or installed incorrectly
- The most common errors are:
  - **Tether strap and anchor bolt errors**
  - **Locking clip not installed**
  - **Vehicle seat belt not secured tightly**
  - **Chest clip not positioned at armpit level**
  - **Too much slack in harness straps**







# Side Air bags

- **Select** a position away from the air bag (center, rear)
- **Clear** the area between the child seat/booster and the door of all objects. Toys, blankets, and even pillows could harm a child if the side air bag inflates
- **Check** your child's position frequently - ensure that your child does not lean against the door



# Air bags and car seats

- Never place a car seat in front of an air bag





## After a crash...

- **Transport Canada** recommends against using a car seat that has been in a collision
- **Manufacturers** recommend that car seats should be replaced after a crash
- **MPI** will cover the cost of a replacement car seat if a claim is made by the parent





# Car seat lifespan?

- Recommended lifespan of car seats...
- AAP - maximum 10 years
- Manufacturers - (vary) 5 years





# Older vehicles

## Problems:

- Lap belts must not be used for booster seats.
- Lap belts provide inferior protection as compared to lap-shoulder belts

## Solutions:

- Consult your vehicle dealer about installing shoulder belts





# Incompatibility

- Check the manufacturers' instructions for both the seat and the vehicle regarding possible installation problems
- Car seat manufacturers recommend a “try before you buy” approach
- Ask your local car seat specialist or car seat inspector for an up-to-date list of known incompatible products



# UAS – New Requirement in US

- Car seat labels in the US now need to show the weight limits of the UAS/LATCH anchor
  - All car seats manufactured after February 27, 2014 will have a label that clearly defines the maximum weight limit for installing that car seat with lower anchors. That maximum weight limit will be 65 lbs. when the car seat weight and the child's weight are combined
- This new rule does not apply in Canada, however check your vehicle manual and seat label!





# Premature/LBW Infants

- Hospital discharge guidelines
- Minimum weight limits
- Infant only seats (+/-car beds)
- No shields, abdominal pads etc.
- Padding, harness size, recline
- Allowable adjustments - head, crotch rolls





# Lowest cost options?

- Convertible (\$100) + no back booster (\$18)
- Families should be aware that car seats purchased in the US do not meet Canadian safety requirements
- Second hand?
  - Canada safety mark, expiry date, all parts, plastic shell with no cracks, not in a crash

**ANY SEAT IS BETTER THAN NO SEAT!**



# Access to Car Seats

- Funding/programs for low income families?
  - Income assistance newborn allowance (\$250/75)
  - car seat allowance?
  - Loan program (new/gently used)
  - Purchase programs, no tax, rebate
- Getting home from hospital: success stories
  - Borrow
  - Social worker
  - IRCOM



# After-Market Devices/Issues

- No standards
  - Car seat covers
  - Positioners not purchased with the seat
  - Seat-belt positioners
- Nothing behind child (car seat covers)
- Do not cover face (blanket, car seat cover)
- Winter clothing
- Not a crib!





**Questions?**



**Thank you!**

