

Child Passenger Safety: Children with Special Health Care Needs

Purpose

The intent of this paper is to provide an overview of the literature and evidence regarding the transportation of children with special healthcare needs and best practice recommendations to prevent injury. It is not meant to be distributed to parents and caregivers.

Key Terms and Abbreviations

Canada Motor Vehicle Safety Standard (CMVSS): Describes the minimum performance requirements of both vehicles and associated safety equipment including car seats, restraint systems and booster seats which are sometimes referred to as, “Child Restraint Systems,” or, “Child Safety Seats.” (Transport Canada, 2015).

National Safety Mark: denotes that a vehicle or restraint system meets necessary standards according to CMVSS at the time it was manufactured (Government of Canada, 2018).

Introduction

Motor vehicle crashes continue to be the leading cause of death for children (Durbin & Hoffman, 2018). Rates of motor vehicle related injuries and deaths can be reduced with the use of appropriate best practices, increased education and awareness, and standardized legislation (Canadian Public Health Association, 2020). Ensuring that a child maintains correct posture and positioning while in a car seat is an especially important safety consideration. Children with special health care needs (CSHCN) have the same or greater need for correct and safe positioning during transportation than that of their peers (O'Neil & Hoffman, 2019). Safe transportation solutions for CSHCN are often more complex, and therefore, require extra care and an increased need for collaborative involvement from key stakeholders. Standard products may not meet the needs of CSHCN and may even exacerbate pre-existing health conditions or offer inadequate crash protection in a motor vehicle collision (Transport Canada, 2008). Some CSHCN are able to be transported in a conventional car seat or booster seat and this is always the recommended first choice, however, this paper will focus on cases where a child needs more support than a conventional, Canadian, child restraint system would provide.

Children with Special Health Care Needs Defined

CSHCN includes children with physical, intellectual, developmental, behavioural or emotional differences than that of their peers (Centre for Disease Control and Prevention, 2020). This includes children with obesity,

orthopaedic-based conditions, developmental delay or disability, muscle tone abnormality, challenging behavioural concerns, special breathing considerations and those born prematurely with low birth weights. Physically, special health care differences are often defined as conditions that impact a child's posture such as muscle or skeletal abnormalities, body structure related problems due to surgery, or the presence of a medical implant or device, for example, a ventilator (Huang, et al., 2011). The intellectual, developmental, emotional, and behavioral concerns are often attributed to restraint system considerations and include children with motor, sensory and neurological based conditions. Some of these healthcare conditions for CSHCN are permanent and will require ongoing and lifelong support; while others, such as casted children, are temporary. Regardless of the timeline of the special health care need, appropriate restraint in a car seat, booster seat and seat belt are recommended for all children.

Magnitude of Problem

The number of CSHCN continues to grow as advances in the medical care system result in increased survival rates for infants born prematurely, those born with various congenital abnormality and children with chronic health conditions (Cohen, et al., 2011). There are also improved treatments for acute illnesses, often from the intensive care unit, and oncology which impacts the prevalence of CSHCN as well (Centre for Disease Control and Prevention, 2020). Overall, 15% of children in North America present a special health considerations and this does not include those at risk for special health care needs such as behavioral considerations (Canadian Paediatric Society, 2018). CSHCN are 2-3 times more likely to experience an injury than that of their peers (Lee, Harrington, Chang, & Connors, 2008). CSHCN travel more often than that of their peers as they have an increased need for medical attention such as doctors appointments, physiotherapy, and other interdisciplinary health services (Syed, Gerber, & Sharp, 2013). For example, children with hip spica casts have an average period of 12 weeks in that cast and require a minimum of eight transports or four round trips during that time period (Zielinski, Oliver, Sybesma, Walter, & Atkinson, 2009).

Child Passenger Safety Legislation and Provincial Regulations

Regulations, legislation, and enforcement is pivotal to preventing injury and improving safety on the road for all passengers, including children. In the late 1970s and early 1980s there were high numbers of fatal car crashes, these incidents prompted significant change in vehicle safety through the implementation of seat belt laws. This culminated in an increased use of seat belt use, therefore, emphasizing the importance of regulations and its impact on changed behavior (Canadian Public Health Association, 2020). Furthermore, as the literature

suggests, seat belt, car seat and booster seat legislations are an effective method to ensuring that children are restrained appropriately and car seats are being used safely (Parachute Canada, 2019).

Although, many CSHCN can safely use a car seat or booster seat certified to regular Canadian standards, and purchased from a standard retailer, there are many CSHCN that cannot be safely transported in one of these options. For those children, there are regulations in Canada, 213.3 and 213.5 of the Canadian Motor Vehicle Standards (CMVSS) designed to approve products to meet those needs. However, options that meet these standards are limited. Manufacturers may choose not to certify their products to meet the Canadian Standards for a variety of reasons, meaning that there are very few vehicle restraint options available for Canadian CSHCN. To address this challenge, the regulation outlined by CMVSS 213.3 allows for the importation of restraint systems into Canada as a custom restraint system for a disabled person (Transport Canada, 2010). This regulation considers a disabled person to be someone that is unable for medical reasons to use any other type of restraint system (Transport Canada, 2010). CMVSS 213.3 requires several conditions to be met before a custom restraint can legally be imported into Canada, including a statement that defines how the restraint system will be used, and specifies that this product will only be used for that particular child (Transport Canada, 2010). The restraint must also include several other components, that seats certified in other jurisdictions including the United States would already have, but must be dictated in both official languages to meet Canadian Standards (Transport Canada, 2010).

Products that could be imported and used legally as custom include adaptive or larger medical car seats, booster seats or transportation vests that are designed to be used with the vehicle seat belt system. Medical professions have long used the E-Z ON vests in this way (Meades, 2008). E-Z ON vests have been crash tested in the US, but do not have any certification within the CMVSS, however, CSHCN are able to use these vests as a “custom” product for a specific individual in Canada with the proper documentation (Meades, 2008). Legislation for restraint system use differs between provinces and territories. If a provincial law specifically addresses CMVSS 213.3, then a restraint, including a custom restraint, is able to be used legally so long as a medical professional provides a letter describing the need for the custom seat or restraint system (Transport Canada, 2010). In addition, a medical exemption to the seat belt and child restraint laws may offer another solution to support unique situations. Legislation differs between provinces and territories. A medical exemptions would have originally been used to support a child who cannot safely use any restraint or seat belt and would be expected to have been carried in arms. This exception could also be used to support the use of a non-approved product, when necessary.

There are many levels of responsibility when it comes to regulations and legislation for the safe transportation of CSHCN. The first level is the federal government, which includes Transport Canada and Health Canada. Transport Canada develops and enforces standards which include determining how car seats are tested, types of testing, standards of testing and defining when a car seat passes this testing (Transport Canada, 2010). Transport Canada is also responsible for investigating issues and ensuring car seats and booster seats comply with testing standards and can be deemed safe for use and distribution (Transport Canada, 2010). Health Canada's role is of equal importance as they work to establish how child restraint systems can be sold. Car seats in Canada can be sold if they meet a current CMVSS standard (Transport Canada, 2008). An individual or retailer cannot sell, loan, give away or donate a car seat or booster seat that does not meet the current Canadian standards at the time of purchase (Government of Canada, 2015). At the provincial level of responsibility, provinces and territories create legislation for the use of child restraint systems, including car seats, booster seats and seat belts. Finally, the parent or caregiver has the responsibility to actively seek out this information and be properly educated on how to choose and use the right restraint system for their CSHCN (BC Children's Hospital, 2020). It is worth noting that it is the driver's obligation to ensure that all children younger than 16 are properly restrained in a vehicle (Transport Canada, 2010).

Currently in Canada, all provinces and territories require that car seats and booster seats be used in accordance to the manufacturer's instructions and specifications (Transport Canada, 2010). Every child restraint system used in Canada must have the National Safety mark which communicates that the seat has met the required safety standards regulated by the CMVSS at the time of manufacturing (Transport Canada, 2010). Currently, Alberta, Northwest Territories and Nunavut do not have any specific booster seat legislation (Parachute Canada, 2019). In Saskatchewan, there is a program for loaning car seats through the Saskatchewan Cerebral Palsy Association (Pike, et al., 2013). In addition, Saskatchewan, British Columbia, Manitoba, Ontario, Quebec, New Brunswick and Nova Scotia, have direct healthcare staff trained to support the safe transportation of CSHCN (Pike, et al., 2013).

Challenges

There are many considerations when recommending safe and appropriate transportation for CSHCN including the securement of specialized medical equipment, weight considerations including both obesity and low birthweight babies, accessibility, behavioral concerns, and school bus safety. It is important to note that none of the transportation issues faced by CSHCN are insurmountable. There are always options available for improving the relative safety of CSHCN during transport despite the increased fragility and risk of injury within this population (Safe Kids Worldwide, 2015).

Special Needs Equipment

The products that do currently meet the Canadian standards are only meeting the needs of a very limited number of CSHCN (Bull & Engle, 2009). There are products that are currently available on the markets that do not have the National Safety Mark, despite the fact that these products are available for purchase in Canada (BC Children's Hospital, 2020). Many of the options that could support CSHCN are not accessible, are no longer manufactured or are awaiting testing (O'Neil & Hoffman, 2019). Many parents and caregivers inevitably attempt to create their own solutions to these problems including poking holes and drilling into the shell of car seats or cutting, pulling or resewing seatbelts in order to provide comfort to their CSHCN (Bull & Engle, 2009). These temporary solutions are not safe and may create undue stress for caregivers and CSHCN during transport. Many CSHCN require medical equipment that must be properly restrained when travelling to reduce risk of injury. These objects should be properly secured when transporting CSHCN to reduce the risk of it becoming a projectile and, hitting the child or another vehicle occupant (Bull & Engle, 2009). Although research and literature supports the need for appropriate securement systems, there are currently no products on the market that meet this need.

Overweight & Premature Children Considerations

The current child passenger safety recommendations uses a gradual recommendation system and does not consider the safety for children who are above weight averages for their age group and therefore exceed the weight limits of car seats/restraint systems (Bull & Engle, 2009). Another concern is for preterm or underweight children who are unable to use a standard rear-facing car seat. Rear-facing car seats provide the best protection in terms of frontal crash because the forces are transferred from the back of the restraints and are able to protect the infant's body or head in general during impact (Bull & Engle, 2009). There are circumstances where infants may need a car bed to accommodate the need for a fully reclined position. This position may be indicated for infants with apnea, bradycardia and oxygen desaturation (Bull & Engle, 2009). There is no data currently available that establishes a specific age or neurodevelopmental state for an infants transition from a car bed to a standard rear-facing car seat or other restraint (Bull & Engle, 2009).

Behavioral Concerns

In addition to physical considerations, there are many behavioural issues to consider when transporting CSHCN. Some children may have impaired communication skills that make staying secured a challenge. Some children unbuckle themselves as they are unable to comprehend potential safety concerns when being transported (Yonkman, Lawler, Talty, O'Neil, & Bull, 2013). For example, a child with autism spectrum disorder (ASD) may

not respond to commands, and are able to unbuckle themselves independently of their caregiver (Yonkman, Lawler, Talty, O'Neil , & Bull , 2013). This can cause an increased risk for injury to not just themselves in the event of a motor vehicle collision, but a potential caregiver being distracted while driving (Yonkman, Lawler, Talty, O'Neil , & Bull , 2013). A study from the United States found that 74% of children with ASD are able to escape from their restraint or harness system (Yonkman, Lawler, Talty, O'Neil , & Bull , 2013). Therefore, many parents or caregivers attempt to adapt to this problem by altering the restraint system or using other unsafe alternative restraint methods.

Bus Safety

Another area of concern involves CSHCN and bus safety, this section of transport is often overlooked when considering that they have the same need for safe transportation best practices (O'Neil & Hoffman, 2018). There is no specific certification or standard for training for bus operators or attendants who transport students who ride in wheelchairs or restraint systems (O'Neil & Hoffman, 2018). This lack of training, education and legislation for CSHCN transportation on busses is a cause for concern. In addition, the lack of resources available within the literature identifies the need for further development in this area of passenger safety for CSHCN. When considering a revision to this, a transportation plan which includes getting on and off the school bus should also be considered (O'Neil & Hoffman, 2018).

Best Practices

Shifting the focus from parents and caregivers to other key stakeholders is crucial for best practice-based interventions. Occupational therapists should be the primary focus when considering CSHCN child passenger safety. An American report entitled, "Hospital Discharge Recommendations for Safe Transportation of Children," created a baseline document for policy development for CSHCN (O'Neil & Hoffman, 2019). In particular, this document recommends that hospitals should discharge patients on a child passenger safety program that involves a multidisciplinary approach (O'Neil & Hoffman, 2019). The Canadian Paediatric Society recommends educating parents and other caregivers regarding safe car seat use. This includes parents being able to demonstrate the appropriate skills, with preference given to the use of their own car seat, before the child is discharged from the hospital (Canadian Paediatric Society, 2016).

Key Stakeholders

There are many key stakeholders when considering child passenger safety for CSHCN. These stakeholders include parents and caregivers, child passenger safety technicians, therapists (including physiotherapists and

occupational therapists), pediatricians, community services, Transport Canada, and Health Canada. It is recommended that occupational therapists, physiotherapists and medical professionals be apart of assessing and advising on appropriate transport options for CSHCN by providing parents and caregivers with current standards outlined by CMVSS (BC Children's Hospital, 2020). Pediatricians and caregivers who are responsible for educating parents of preterm and low birth weight infants should be considered key stakeholders in car seat education, and transport safety for this population within CSHCN (Bull & Engle, 2009). When considering bus safety for CSHCN school systems are also responsible for ensuring safe transport on all types of federally approved transportation (O'Neil & Hoffman, 2018). The school system should consider the inclusion of parents/caregivers, school transportation directors and school support staff or specialists (O'Neil & Hoffman, 2018).

Occupational Therapists (OT) are the primary stakeholders that are instrumental in the safe transportation of CSHCN. Their medical background provides them with the qualifications to complete thorough evaluations for the CSHCN medical needs during transport. According to the Occupational Therapy Framework, child passenger safety is within the scope of this profession as they address issues of daily living and participation in meaningful activities (Yonkman, Lawler, Talty, O'Neil , & Bull , 2013). Physiotherapists are responsible for doing this work in some hospitals, health care centers, and rehabilitation centers. When parents and caregivers are faced with transportation challenges, families will usually seek the advice of health care professionals, therefore, it is crucial that a representative within the hospital be held accountable for this responsibility. It is important that these professional representatives be aware of resources or restraint options available and that are accessible for the parents in their community and meet the current standards (Lawler, Novak, Talty, & Yonkman, 2013). These professional representatives should have access to updated information about best practice recommendations (Lawler, Novak, Talty, & Yonkman, 2013). Having these components will allow them to either address the family seeking advice or refer them properly and appropriately.

Recommendations

Child passenger safety for CSHCN is a focus area for injury prevention and a priority area for Child Safety Link. The literature and case studies directly supports a need for improvements in standerdized practices to ensure the safe transportation of CSCHN. The recommendations for child passenger safety programming can be guided by the four strategic priorities and upstream approaches. Creating recommendations based on an upstream approach helps to address injury prevention barriers, while also creating sustainable change for the safe transportation of CSCHN.

Capacity Building and Partnerships.

- I. Utilize occupational therapists and physiotherapists medical background to create comprehensive in patient and outpatient child passenger safety services and discharge protocols.
- II. Dedicate particular hospital staff who are trained in positioning infants properly in car safety seats and detecting apnea, bradycardia and oxygen desaturation (Bull & Engle, 2009).
- III. Collaborate with legal departments within health centers and hospitals to address the underlying liability concerns associated with CSHCN safe transportation.
- IV. Increase community involvement to improve overall sustainability of programming involving CSHCN. This involves training of occupation therapists, parents/caregivers, and law enforcement on CSHCN safe transport.
- V. Create culturally appropriate educational resources for parents and caregivers specific to CSHCN.

Communication & Public Relations.

- I. Communicate effectively with parents to ensure they are able to demonstrate appropriate technique and practice, ideally with the car seat they are to use, before being discharged from the hospital (Canadian Paediatric Society, 2016).
- II. Utilize existing case studies focused on CSHCN transportation to evaluate medical, physical, and behavioral conditions of CSHCN.
- III. Increase educational resources, specifically for CSHCN, for parents and caregivers.
- IV. Mandate education sessions for all pediatricians, family physicians and other key medical stakeholders to ensure they have accurate knowledge on current recommendations for safe transportation for CSHCN (van Shckaik, 2008).
- V. Advise primary care providers to ask parents/caregivers about their knowledge on the safe transportation of CSHCN before providing counselling on appropriate restraint systems to improve self-advocacy and autonomy of parents.

Advocacy and Healthy Public Policy.

- I. Advocate for increased funding to support proper training, and car seat education.
- II. Create comprehensive education policies for hospital-based staff, healthcare staff and school-based staff.
- III. Incorporate risk management strategies from the beginning when developing policies and protocols to increase access to appropriate child passenger safety information and resources.

- IV. Support the removal of medical exemptions from legislation, in an effort to reduce non-use of restraints or hazardous homemade solutions.
- V. Advocate for updated information from Transport Canada on the clear explanation for what is legal for use within Canada as a “custom restraints” to reduce barriers to accessing safe alternatives.

Research and Evaluation.

- I. Identify the gaps in transportation resources for CSHCN and create accessible educational based resourced for these gaps. For example, bus safety.
- II. Increase research surrounding the effects of a crash on CSHCN to improve solutions associated with crash protection for this particular population.
- III. Assess best practices and updated recommendations for the safe transportation of CSHCN as necessary.
- IV. Conduct research regarding the development and engineering of restraining devices for medical equipment.
- V. Conduct an environmental scan on current car seats, booster seats and child restraint systems that support CSHCN to ensure that these items are accessible to clinicians, parents, and caregivers.

Conclusion

The safe transportation of CSHCN continues to be an important area of focus for child passenger safety. As health care providers, there is a responsibility to identify the barriers associated and ensure that parents/caregivers have access to safe transportation options for their CSHCN. CSHCN are unique and require personalized solutions for safe transportation. Based on the current literature, there is a significant lack of consistent information and comprehensive solutions for the safe transportation of CSHCN, forcing many parents to resort to unsafe transportation solutions.

Supporting Documents

1. Hospital Discharge Recommendations for Safe Transportation of Children- a baseline document for policy development of the safe transportation for CSHCN (O'Neil & Hoffman, 2019).
2. Transporting Infants and Children with Special Needs in Personal Vehicles: A Best Practices Guide for Healthcare Practitioners- A best practices guide for health care practitioners produced by transport Canada (Transport Canada, 2008).
3. Best Practices for Transporting Infants and Children with Special Needs. (Meades, 2008)

About Child Safety Link

Child Safety Link (CSL) is an injury prevention program at the IWK Health Centre dedicated to reducing the incidence and severity of unintentional injury to children and youth in the Maritimes. CSL is committed to working with community organizations, governments, and other partners to ensure children are as safe as necessary at home, on the road and at play. The team does this through capacity building & partnerships; communication and public relations; advocacy and healthy public policy; and research and evaluation. Child passenger safety is one of the priority areas for Child Safety Link.

References

- BC Children's Hospital. (2020). BC Laws. *BC Children's Hospital*. Retrieved from <http://www.bcchildrens.ca/health-info/healthy-living/child-safety/transportation-for-children-with-special-needs/bc-laws>
- Boston Children's Hospital. (2020). Infant Respiratory Distress Syndrome (Hyaline Membrane Disease). *Boston Children's Hospital*. Retrieved from [http://www.childrenshospital.org/conditions-and-treatments/conditions/i/infant-respiratory-distress-syndrome-hyaline-membrane-disease#:~:text=HMD%20occurs%20in%20about%2060,mechanical%20ventilator%20\(breathing%20machine\)](http://www.childrenshospital.org/conditions-and-treatments/conditions/i/infant-respiratory-distress-syndrome-hyaline-membrane-disease#:~:text=HMD%20occurs%20in%20about%2060,mechanical%20ventilator%20(breathing%20machine)).
- Bull, M. J., & Engle, W. A. (2009). Safe Transportation of Preterm and Low Birth Weight Infants at Hospital Discharge. *The Committee on Injury, Violence, and Poison Prevention and the Committee on Fetus and Newborn*, 125(5), 1424-1429. doi:10.1542/peds.2009-0559
- Canadian Institutes of Health Research. (2017). Government of Canada invests in better health for premature babies. *Canadian Institute of Health Research*. Retrieved from <https://www.newswire.ca/news-releases/government-of-canada-invests-in-better-health-for-premature-babies-622089233.html#:~:text=Birth%20Research%20Initiative,An%20estimated%20390%2C000%20babies%20are%20born%20each%20year%20in%20Canada,of%20preterm%20birth>
- Canadian Paediatric Society. (2016, April 1). *Assessment of cardiorespiratory stability using the infant car seat challenge before discharge in preterm infants (<37 weeks gestational age)*. Retrieved from Canadian Paediatric Society: <https://www.cps.ca/en/documents/position/infant-car-seat-challenge>
- Canadian Paediatric Society. (2018). *Transition to adult care for youth with special health care needs*. Retrieved from Canadian Paediatric Society: <https://www.cps.ca/en/documents/position/transition-youth-special-needs>
- Canadian Public Health Association. (2020). Child Passenger Safety and Injury Prevention. *Safe Kids Canada*. Retrieved from <https://www.cpha.ca/child-passenger-safety-and-injury-prevention>
- Centre for Disease Control and Prevention. (2020). *Children with Special Healthcare Needs*. Retrieved from Centers for Disease Control and Prevention: <https://www.cdc.gov/childrenindisasters/children-with-special-healthcare-needs.html>
- Chouinard, A., & Hurley, R. (2005). Towards the Development of a National Restraint Survey. *Transport Canada*

- Cohen, E., Kuo, D. Z., Agrawal, R., Berry, J. G., Bhagat, S. M., Simon, T. D., & Srivastava, R. (2011, March). Children With Medical Complexity: An Emerging Population for Clinical and Research Initiatives. *Official Journal Of the American Academy of Pediatrics*, 529-538. doi:10.1542/peds.2010-0910
- Collins, A., Caskey, S., Peck, J., Walter, N., Atkinson, T., & Atkinson, P. J. (2019). Frontal Crash Injury Metrics are Below Mandated Limits for a Spica Casted Child Dummy in Currently Available Restraints.
- CPSAC. (2019). Provincial & Territorial Legislation Summary. *Child Passenger Safety Association of Canada*. Retrieved from <https://www.cpsac.org/wp-content/files/documents/Provincial-Territorial-Law-Summary.pdf>
- Durbin, D. R., & Hoffman, B. D. (2018). Child Passenger Safety. *Council on Injury, Violence, And Poison Prevention*, 142(5). doi:10.1542/peds.2018-2460
- Government of Canada. (2015, November 13). Second-hand car seat safety. *Government of Canada*. Retrieved from <https://www.canada.ca/en/health-canada/services/road-safety/second-hand-car-seats.html>
- Government of Canada. (2018). *Government of Canada*. Retrieved from Safety Standards for Vehicles: <https://tc.canada.ca/en/road-transportation/safety-standards-vehicles-tires-child-car-seats/safety-standards-vehicles>
- Huang, P., Kallan, M. J., O'Neil, J., Bull, M. J., Blum, N. J., & Durbin, D. R. (2011). Children with Special Physical Health Care Needs: Restraint Use and Injury Risk in Motor Vehicle Crashes. *Maternal and Child Health Journal*(15), 949-954. Retrieved from <https://link.springer-com.ezproxy.library.dal.ca/article/10.1007/s10995-009-0539-1>
- Juste-Lorente, O., Mazza, M., Lorente, I., & Lopez-Valdes, F. J. (2018). Differences in the kinematics of booster-seated pediatric occupants using two different car seats. *19*(1), 18-22. doi:10.1080/15389588.2017.1334119
- Lawler, B., Novak, L., Talty, J., & Yonkman, J. (2013). Safely Transporting Children on the Go with Special Health Care Needs. Retrieved from www.aota.org
- Lee, L.-C., Harrington, R. A., Chang, J., & Connors, S. L. (2008). Increased risk of injury in children with developmental disabilities. *Research in developmental disabilities*. doi:10.1016/j.ridd.2007.05.002
- Meades, W. (2008). Best Practices for Transporting Infants and Children with Special Needs. *Sunny Hill Health Centre*.
- Narvey, M. R. (2016). Assessment of cardiorespiratory stability using the infant car seat challenge before discharge in preterm infants (<37 weeks' gestational age). *Canadian Paediatric Society*, 21(3), 155-158. doi:10.1093/pch/21.3.155
- O'Neil, J., & Hoffman, B. (2019, May). Transporting Children With Special Health Care Needs. *Official Journal of the American Academy of Pediatrics*, 143(5). doi:doi-org.ezproxy.library.dal.ca/10.1542/peds.2019-0724
- O'Neil, J., & Hoffman, B. D. (2018). School Bus Transportation of Children With Special Health Care Needs. *Council on Injury, Violence, and Poison Prevention*, 141(5). doi:10.1542/peds.2018-0513
- Ontario Government. (2018). Injury Prevention Guideline. *Ministry of Health and Long-Term Care*. Retrieved from

http://health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Injury_Prevention_Guideline_2018_en.pdf

- Parachute. (2015). The Cost of Injury In Canada. *Parachute Canada*. Retrieved from https://parachute.ca/wp-content/uploads/2019/06/Cost_of_Injury-2015.pdf
- Parachute Canada. (2019, June 11). *Policy: Booster seat legislation*. Retrieved from Parachute Canada: <https://parachute.ca/en/professional-resource/policy/booster-seat-legislation/>
- Pike, I., Desapriya, E., Agrey, N., Ell, S., Froehlich, K., Cairns, M., . . . Turcotte, K. (2013). Assessment of a Child Passenger Safety Program. *Canadian Multidisciplinary Road Safety Conference*. Retrieved from <http://www.pubmanitoba.ca/v1/exhibits/mpi2014/cac-13.pdf>
- Public Health Ontario. (2017). Health Communications. *Public Health Ontario*. Retrieved from <https://www.publichealthontario.ca/en/health-topics/public-health-practice/health-communications>
- Reuter, S., Moser, C., & Baack, M. (2014, October). Respiratory Distress in the Newborn. *Pediatrics in Review*, 25(10), 417-429. doi:10.1542/pir.35-10-417
- Safe Kids Worldwide. (2015). Special Needs Transport In-Service for OTS, PTS and Hospital Personnel. *Safe Kids Worldwide*. Retrieved from <https://www.safekids.org/safe-travel-in-service>
- Shepherd, C. A., & Charlotte, W. (2015, June 24). A Qualitative Study of Autism Policy in Canada: Seeking Consensus on Children's Services. *Journal of Autism and Developmental Disorders*, 3550-3564. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4608990/>
- Syed, S. T., Gerber, B. S., & Sharp, L. K. (2013). Traveling Towards Disease: Transportation Barriers to Health Care Access. *J Community Health*, 976-993. doi:10.1007/s10900-013-9681-1
- Sylvester, S., Schwartz, J. M., Hsu, A., Crandall, M., Tepas, J., & Yorkgitis, B. K. (2011). Pediatric Safety Restraint Use In Motor Vehicle Crashes at a Level 1 Safety Net Trauma Center. *Journal of Surgical Research*, 132-136.
- Transport Canada. (2008). Transporting Infants and Children with Special Needs in Personal Vehicles: A Best Practices Guide for Healthcare Practitioners. *Road Safety Transport Canada*.
- Transport Canada. (2010). Motor Vehicle Restraint Systems and Booster Seats Safety Regulations. *Motor Vehicle Safety Act*. Retrieved from <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2010-90/FullText.html>
- Transport Canada. (2015, October). *Government of Canada*. Retrieved from Motor Vehicle Safety Oversight Program: <https://tc.canada.ca/en/motor-vehicle-safety-oversight-program>
- van Shckaik, C. (2008). Transportation of infants and children in motor vehicles. *Pediatrics & Child Health*, 13(4), 313-318. doi:10.1093/pch/13.4.313
- World Health Organization. (n.d.). Workplace Health Promotion: Advocacy. *Occupational Health*. Retrieved from https://www.who.int/occupational_health/topics/workplace/en/index2.html
- Yonkman, J., Lawler, B., Talty, J., O'Neil, J., & Bull, M. (2013). Safely Transporting Children With Autism Spectrum Disorder: Evaluation and Intervention. *American Journal of Occupational Therapy*, 711-716. doi:10.5014/ajot.2013.008250

Zielinskin, J., Oliver, G., Sybesma, J., Walter, N., & Atkinson, P. (2009). Casting Technique and Restraint Choice Influence Child Safety During Transport of Body Casted Children Subjected to a Stimulated Frontal MVA. *The Journal of Trauma Injury, Infection and Critical Care*, 66(6), 1653-1665.