Health Promotion Through Injury Prevention: The Perspective of a Paediatric and Adolescent Trauma Centre

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Unintentional trauma is the leading cause of death and disability in children and adolescents. Trauma, by its nature, is often sudden, life altering and devastating. Rapid access to expert medical, surgical, nursing, rehabilitation and psychosocial trauma care is paramount in increasing the chances of a positive outcome. At The Montreal Children’s Hospital (MCH) Trauma Centre, our trauma specialists are frequently faced with the reality of treating children and adolescents that are in life threatening situations following a traumatic injury.

According to the World Health Organization, approximately 950 000 children under the age of 18 years die annually due to traumatic injuries (World Health Organization 2008). In the United States, each year, 25% of children under the age of 14 years, or approximately 14 million children, sustain injuries serious enough to require medical attention (Safe Kids USA 2009). In Canada, in 2005, 750 Canadians under the age of 19 years died as a result of injuries and there were 29 142 hospitalizations in the same age group (Public Health Agency of Canada 2009). Furthermore, unintentional injuries are the leading cause of hospitalization in the 10 to 14 year old age group, and the leading cause of death in children and adolescents 1 to 18 years old (Institut national de santé du Québec 2009). In Quebec, between 2000 and 2005, trauma was responsible for the death of an average of 207 children under the age of 18 years, annually, and traumatic injuries accounted for 7 688 hospitalizations in this age group, which was the third (11%) most important cause of hospitalization (Public Health Agency of Canada 2009).

The real impact of unintentional trauma, however, is measured in the profound implications on the patient, family, friends, and, quite often, the entire community. Fewer health care experiences are as tragic as standing at the bedside of a permanently injured or dying child following what may have been an entirely preventable traumatic injury, with a family laden with guilt, realizing that they were not fully aware of all the risks associated with their child's or adolescent's activity.

At The MCH Trauma Centre, every year more than 15 000 children and adolescents are treated in the Emergency Department for a large variety of traumatic injuries related to participation in sports and recreational activities, motor vehicle accidents, falls, burns, poisoning, drowning, abuse and assault. About 500 of these cases are serious enough to require hospitalization and the timely interventions of our many trauma specialists. In addition to our in-patient Trauma, Neurotrauma and Burn Trauma Programs, we work closely with regional centres and community physicians, providing care to hundreds of ambulatory patients annually. As trauma experts, every time we see and care for an injured child, it reinforces the idea that Injury Prevention is a vital aspect of trauma care.

Certainly, while some traumatic events cannot be prevented, the reality is that up to 90% of traumatic injuries in children and adolescents could be prevented (American College of Surgeons 2003). The majority of paediatric traumatic injuries are the end result of dynamic interactions among multiple factors at the level of the individual, the community and society (American College of Surgeons 2003). Therefore, unintentional injuries cannot be attributed solely to a lack of knowledge, poor judgement or immature attitude of invincibility on the part of the child or adolescent, nor to the absence of appropriate
supervision and knowledge on the part of adults. Effective prevention initiatives must, therefore, adopt a multi-tiered approach that engages communities. According to the World Health Organization (2008), prevention strategies should be developed through a combination of education, environmental measures, and in some cases enforcement. Successful injury prevention ventures often result from concurrent initiatives. Endless legislation is not always the most well received and effective strategy but is sometimes the necessary choice as in the case of seatbelts, car seats, speed limits, and not permitting cell phone use while driving. Seeing the reality and effects of trauma first hand, Trauma Centres have a responsibility and are well positioned to play a leadership role, not only in the delivery of tertiary trauma care, but in injury prevention as well. In Quebec, injury prevention is not only an important but a required component of the mandate of trauma centres.

Trauma Centres have an important role to play in injury prevention at all levels of the spectrum of prevention (Cohen and Swift 1999). These include: strengthening individual knowledge and skills, promoting community education, educating providers, fostering coalitions and networks, changing organizational practices and influencing policy and legislation. The activities and programs of The Montreal Children’s Hospital (MCH) Trauma Centre are integrated across all levels of trauma care and injury prevention. As a tertiary level paediatric and adolescent Trauma Centre, we are continually faced with the challenge of finding an effective way of conveying the important message of balancing activity and fun with safety.

Certainly, while The MCH Trauma Centre’s first mission is to provide expert trauma care, our Centre is actively engaged with the communities and regional centres that it services, seeking out opportunities to encourage children, families, teachers, coaches, health professionals, politicians and other community partners to make injury prevention a priority and promote safe and healthy activity. An essential component of outreach initiatives is to provide accurate and timely information about injury prevention to children, adolescents, families, and communities. There are many sources of information and opinions that are readily available to the public through the internet, magazines, television programs, and books, and selecting sources that are credible is not always easy. In 2009, The MCH Trauma Centre launched its Trauma website (The Montreal Children’s Hospital 2009) to offer users comprehensive information based on our years of experience as experts in trauma care and injury prevention. The website is interactive and bilingual, making information easily accessible to our patients and their families, the community we care for, the partners we work with, the regional centres in need of our experience, and our colleagues involved in clinical care and research activities elsewhere. In the continued pursuit of outreach, strategic agreements have resulted in cross-linkage between The MCH Trauma website and those of key community partners. Our website is referenced on numerous credible healthcare related web sites, as well as in documentation by other Quebec Trauma Centres. Key partnerships with The Montreal Canadiens Organization and The Lucie and André Chagnon Foundation emerged from this successful project.

Approximately 30 to 35% of trauma related injuries seen at The MCH Trauma Centre are sustained by children and adolescents while participating in sports and recreational activities. We have, therefore, developed Injury prevention and management Kit(c) for coaches, community organizations, teachers, parents and health professionals, which are available on our Trauma Website. The Concussion Kit(c) (The Montreal Children’s Hospital 2007) is an example of a program that has been used by sporting associations, school athletic programs, and other trauma and regional centres across Quebec. The Concussion Kit(c) of The Montreal Children’s Hospital is primarily educational in nature, and was designed to increase the awareness of parents, athletes, coaches and sporting associations with respect to preventing, recognizing and managing concussions in sports.

The MCH Ankle Kit(c) is another example of an integrated approach to injury prevention and management that has been
developed by The MCH Trauma Centre (The Montreal Children’s Hospital 2009). Ankle sprains are one of the most common lower extremity injuries sustained during sports and recreational activities (Canadian Paediatric Society 2007). The Ankle KiT (c) provides guidelines for the immediate management of the acute injury and exercises appropriate for the different stages of recovery. The Ankle KiT (c) was designed to ensure early consistent management of paediatric ankle injuries in the emergency departments and by community physicians. This Ankle KiT (c) is widely used by the Orthopedic Clinic and the Physiotherapy Department at the MCH, and is also available for community partners and regional centres. Preliminary impressions (Gagnon et al 2009) are that utilization of the Ankle KiT (c) leads to safer return to sports and higher patient satisfaction. In addition, parents found the information in the Ankle KiT (c) to be useful and were more satisfied with their experience in the emergency department than those who did not receive the information. Importantly, 80% of children whose injuries were managed using the guidelines in the Ankle KiT (c) reported initial compliance with the proposed exercises.

At the level of primary prevention, The MCH Trauma experts have worked with the coroner’s office, regional health boards, municipalities, school boards, summer camps, and sporting associations to provide norms and recommendations for a number of initiatives: standards for the use diving boards, anchoring soccer nets, removal of trampolines from schools, building modifications to include window guards, and banning baby walkers. Our experts have also participated in several key initiatives to reduce the risk of injury to children in motor vehicles, including providing recommendations for the use of airbags in automobiles and the age of front seat passengers. We have also developed and implemented a number of community outreach initiatives: car seat verification clinics, skiing and snowboarding safety events, concussion awareness at hockey tournaments and bike rodeos, as well school presentations geared at reducing risky behaviours in adolescents.

To be effective, there is a need for injury prevention initiatives to be responsive to the needs of their communities. At The MCH Trauma Centre, we actively monitor injury occurrences and trends in real-time. This is done through the use of our internal MCH Trauma Database, the SIURGE database in the emergency department (Logibek, 2005) and the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP). In this way, we can provide timely injury prevention information to our community partners.

Another important mechanism to convey timely and important trauma and injury prevention information is by working closely with the media. Over the years, our experts have given hundreds of interviews on a wide array of trauma topics to local, provincial and national media. Our collaborative relationship with the media has facilitated our ability to provide timely alerts and diffuse trauma and injury prevention information to the community. Our contribution to the Globe and Mail, ‘Safety is hardly child’s play’ is an example of our media outreach (Friedman 2007).

**Future directions in injury prevention in children and youth**

The important message of preventing injuries should not lead to a generation of overweight, sedentary children. Participation in sports and recreational activities contributes to good health and is an important aspect of physical, psychological and social development of children and adolescents. Therefore, continuing to develop collaborative partnerships with community organizations and Trauma Network Partners is an effective and essential way of disseminating trauma expertise and timely injury prevention initiatives. There is also a very real need for strong research to measure the effectiveness of educational programs on injury prevention and to inform us on best approaches to strengthen individuals’ knowledge and skills around injury prevention, as, ultimately, the most effective intervention lies with each individual’s ability to balance activity and fun with safety. Lastly, there is a need to strengthen the education and training of health care professionals on injury control and prevention (Knudson et al 2001, Graham et al 2010).
Having a good time does not preclude being informed and making wise choices. The objective is to promote health through the prevention of injuries. A great day of activity and fun, or a family outing filled with laughter and great times should not end in a visit to the Trauma Centre.

References


