Child Safety Link Backgrounder
Preventing Young Children's Falls in the Home

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Purpose

The intent of this paper is to provide an overview of the evidence regarding falls in young children and best practice prevention recommendations. It is not meant to be distributed to parents and caregivers

Introduction

More than 20,000 children are seen in emergency departments across Canada with injuries that occurred at home every year. This means that every day, approximately 60 young children suffer injuries in the home serious enough to be taken to the hospital. Injuries are the number one cause of preventable death and disability in children and most of these injuries occur to children under 5 years old, who by the nature of their age spend a large portion of their time at home (1).

One of Child Safety Link's (CSL) priority areas is safety in the home. This topic area focuses on the prevention of unintentional injuries in the home from falls, poisonings, burns, drownings and choking (threats to breathing) among children and youth 0-14 years of age. Home-related injuries to young children can and often happen when a child reaches a developmental milestone that caregivers are unaware of or did not fully anticipate/prepare for (i.e. rolling over, standing up, learning to grab) (2).

Purpose of Document

The purpose of this document is to provide an overview of injuries in the home due to **falls**. This document will outline the magnitude of the problem (e.g. key data, research), identified and ongoing challenges to preventing these types of injuries, and summarize best known practices for falls prevention.

Risk & Resiliency

In recent years, the topics of risky play, risk-taking, and resiliency have been receiving lots of attention. Emerging research in areas of child development have been taking place internationally and across Canada, sparking lots of interest for stakeholders in physical activity, injury prevention, and mental health. Research demonstrates that children who become resilient through taking risks, have a more positive identity and self-outlook. Safe environments as well as positive role models also make it possible for children to thrive. Unfortunately in Canada, children now appear more anxious than ever due to decreased resiliency (3).

When parents facilitate genuine opportunities for their children to be more resilient, they allow them to become more independent and to trust their instincts. Together, this is an incredibly important factor in decision making (3). CSL is considering using a risk and resiliency lens in messaging and approaches about various home safety issues. This process is still to be determined.

Falls in Children

Falling is a normal part of development, as children walk, climb, run, jump, play and explore their environment. Falls are generally of little consequence and typically result in minor cuts and bruises. However, some falls go beyond the resilience of a child's body, making them the fourth largest cause of unintentional injury death in the world among children (4) and the leading cause of hospitalization.

Falls are more common for different reasons based on the age of the child. Falls in infants and young toddlers (ages 0-4) typically occur around the home - from furniture, beds, change tables or high chairs or down the stairs. In older toddlers, falls tend to occur while they are walking, running or crawling around the house (5). According to the research, the top three mechanisms of home fall injuries among children often resulting in emergency department visits include: falls on stairs, falling from furniture, and same-level stumbles and trips (6).

As children get older, falls tend to occur outside the home. When children reach 5 and 9 years of age, playgrounds appear to be the most common area for falls. Children ages 10-14 are most likely to fall and injure themselves while playing a sport (7). The scope of this paper is falls in the home.

Magnitude of the Problem

Canada

Falls are the leading cause of injury-related death and the leading cause of hospitalizations in Canada. In 2010, falls cost Canadians more than any other type of injury, with the total economic burden estimated as $8.7 billion (8). While most falls in children do not result in serious injury, nearly 5,000 children from birth to 9 years were admitted to a hospital and over 165,000 visited an emergency department as a result of a fall in 2010. Five children age 0-4 and less than 5 age 5-9 died from falls in Canada in 2009 (5).

Atlantic Canada (9)

Over the 10 year period from 2004-2013, falls were the leading cause of injury hospitalizations among Atlantic Canadian children and youth ages 0-14 years. During this same time period, the average number of admissions was 416 each year.

- Falls from furniture accounted for 700 hospital admissions, while falls involving stairs and steps accounted for over 400.
- Infants less than 1 year of age experienced an increase in fall-related hospitalizations of 2.3% annually.

When comparing the fall-related hospitalization rates, the children of Atlantic Canada had a rate significantly higher than the Canadian rate. The rate in Atlantic Canada was 114.9 hospitalizations/100,000 population and the Canadian rate was 77.9 hospitalizations/100,000 population.

Atlantic Hospitalization Report Definition of Fall Injuries

Fall injuries include injuries due to falling on ice and snow, slipping/tripping/ stumbling, collision with, or pushing by another person (not sports-related), while being carried or supported by another person, falls involving wheelchairs and other type of walking devices, and from furniture.

Excludes falls from playground equipment and selected sports-related falls.

Of the Atlantic Provinces, New Brunswick had the highest rate with 130.5 hospitalizations/100,000 population. Newfoundland and Labrador had the lowest rate with 98.8 hospitalizations/100,000 population.

The report also outlined some good news:

- Children between 1 and 4 years of age experienced a significant average annual decrease of 4.2%.
- Children between 5 and 9 years of age experienced a statistically significant average annual decrease of 5.7%.
- Youth between 10 and 14 years of age experienced the largest statistically significant decrease with an average of 6.7% annually.

Halifax, Nova Scotia (10, 11)

The Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) of the IWK Health Centre in Halifax, Nova Scotia collects pre-injury information from caregivers who give consent when they bring their children to the IWK Emergency Department, thus it can be limited. From 2012-16, there were 6630 recorded admissions resulting from injuries occurring in the home among children ages 0-16 years. In terms of these visits to the emergency Department, male children ages 2-4 years frequented most often. The living room, bedroom, and stairs ranked as the most common rooms in the home for injuries, with falls accounting for over 2500 of these injuries.

Issues and Challenges

Caregivers want to make sure that their children are safe, happy, and healthy at home. However, all parents/caregivers face challenges from time to time that might make this difficult. One of the most consistently cited risk factors to preventing children's falls is inadequate supervision. Caregiver attitudes and beliefs that falls are a normal part of childhood is also a prominent risk factor affecting the prevention of falls in the home (4).

Social determinants of injury including low socioeconomic status, single parent situations, and physically hazardous environments in which the children live and play can contribute to cases of higher risk of falls in the home (13). In 2011-12, CSL conducted a research project examining additional barriers to safety of children for families living in low-rental housing. A total of five focus groups occurred throughout communities in Nova Scotia and feedback from facilitated questions and discussion was collected (6). Some of the discussion topic areas are included below.

Physical Environments:

Respondents from the 2011-12 CSL research study indicated that there are often challenges related to the physical environment, including in and around the home as well as other spaces children use (e.g. roads, playgrounds). Most challenges expressed by caregivers/participants during this study with regards to falls among children included poor stair conditions, stair railings in disrepair, and windows and doors that were not secure (13). Poor design, construction and maintenance of stairs, lack of proper handrails, and poor tread surfaces are main contributing factors to falls in the home (14).

Lack of Access to and Affordability of Safety Devices:

In some cases, families simply cannot afford the necessary or recommended safety equipment and often operate on a risk continuum when approaching injury prevention - they assess where the lesser risk is and focus on doing what they can to prevent that (15).

Knowledge and Skill:

While affordability remains an issue to accessing necessary injury prevention equipment and structures for preventing children's falls in the home, a lack of understanding of how to properly install and use such devices is also quite common, particularly for families of lower socioeconomic status. Evidence indicates that simply providing the equipment without cost and leaving it to the parent to install does not increase usage of the particular device, nor reduce injuries. General use of home safety devices is far improved and injuries reduced when the safety device is provided in the context of a home safety education visit and installed for/with the parent (16). For example,

providing and demonstrating how to properly install. There is also a misperception that window screens are a sufficient safety barrier to preventing harm or potential fatality from a fall is far too common (6).

Additional Gaps

According to the Canadian Injury Prevention Resource, few intervention-focused studies actually addressing the serious issue of falls prevention among children exist (6). Some additional gaps to preventing fall injuries in the home among this population include:

- Availability of unsafe/illegal products (e.g. drop-side cribs);
- Limited evaluation of current programs and overall lack of concentrated focus on falls prevention among children and youth populations (6);
- Lack of a cohesive space for local Family Resource Center (FRC) staff and other professionals who work with families to network, access evidence, work together and find answers discuss to address the issue of falls among children and youth (i.e. Community of Practice similar to the LOOP). [NOTE: *LoopJr* a Community of Practice focusing on children's falls launched on September 10, 2018 to address this gap]

Best Practices

Although there are challenges to injury prevention, researchers and practitioners agree that injuries are predictable and therefore preventable. In 2011, Safe Kids Canada (now Parachute Canada) released *The Child Safety Good Practice Guide: Good investments in unintentional child injury prevention and safety promotion – Canadian Edition* (2). This comprehensive document outlines a framework for injury prevention stakeholders to consider to promote good practice when planning and implementing strategies to address several child injury issues including falls in children. These strategies, particularly focused on children 5 years old and younger, are outlined by the E's of injury prevention: Education, Engineering, and Enforcement. Some of the practices from this guide are outlined below.

E: Education: initiatives to develop personal habits - education or behavior change strategies (2)

Evidence suggests that a combination of safety products and caregiver supervision is required to keep children safe from falls in the home. Caregivers need to be aware of the potential hazards when leaving their children unsupervised for a period of time. More so, caregivers need to know their child's developmental stages and thus adjust things in their homes accordingly to ensure homes are as safe as necessary (17). For example, programs that incorporate an educational component along with the use of fall prevention safety devices such as window safety mechanisms (2).

Developing and implementing programs to foster a safer at home culture within the larger community setting, as well as making interventions individually relevant is important as it has been shown to improve effectiveness of programs targeting behavior change (6).

E: Engineering: modification of a product or environment; ensuring access to appropriate services (2)

Modifying the home environment in order to reduce likelihood of fall injuries to children proves beneficial (14). This can include resurfacing floors, adopting accurate building codes particularly for home stair configurations, and removing potentially dangerous furniture such as the coffee table (3). Stair gates have proven to assist the reduction of falls on stairs among young children, when used at the top of the stairs in homes (3).

E: Enforcement (policy/legislation and measures to ensure compliance)

Legislation exists and has been successful in reducing severe injuries from falls to children. An example of a successful measure includes the 2004 ban of baby walkers (16). Another example focuses on falls from windows. Falls from windows are not just a problem for high-rise buildings, in fact, young children can and have been injured by falling from first-floor windows (18). Enforcing similar legislation for homeowners and landlords to use appropriate window guards on all windows is necessary (4).

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 Safety Link/Other children fall prevention resources

CSL Resources:

- Website: www.childsafetylink.ca [information available by topic or age/stage]
- Facebook: www.facebook.com/ChildSafetyLinkIwk
- Twitter: @childsafetylink
- YouTube: www.youtube.com

Data Report and report infographic:

- Atlantic Canada Child & Youth Unintentional Injury Hospitalizations: 10 Years in Review [2004-2013]. *Available in English & French* http://childsafetylink.ca/library/atlantic-canada-injury-reports/2004-2013/
- Videos
- Educational Resources

Other

- ACIP library: http://acip.ca/library-bibliotheque [Go to Child & Youth section]
- Canadian Injury Prevention Resource: An evidence-informed guide to injury prevention in Canada http://www.parachutecanada.org/downloads/research/Canadian_Injury_Prevention_Resource-LR.pdf
- Fall Prevention Month toolkit: http://fallpreventionmonth.ca/childrenstoolkit
- LOOP JR: Children Fall Prevention Toolkit: https://jr.fallsloop.com/

Parachute Canada:

- Children falls prevention resources (Ages 0-6): http://www.parachutecanada.org/child-injury-prevention/item/fall-prevention
- Cost of Injury Report: http://www.parachutecanada.org/costofinjury
- Summary Report – Fall & Transport Injury Trends in Children 2004 and 2010: http://www.parachutecanada.org/downloads/research/Cost_of_Injury-2015-Child_Injury_Compendium.pdf

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