

Creating Safer Homes Project

**An Evaluation of an In-home Injury Prevention Project
for Families with Children Ages 0 to 6 Year who are involved in
a Long-Term Home Visiting Program.**

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Creating Safer Homes Project

Executive Summary

The implementation and evaluation of the Creating Safer Homes Project was initiated in response to a federal and provincial government commitment to enhance childhood development programs across Canada. Home safety was identified as an area for further development by the Healthy Babies Healthy Children (HBHC) staff.

Sixty-nine (69) households involved in the HBHC long-term home visiting program participated in the evaluation from January 2004 to August 2006. A baseline survey was completed with these families, and families received home safety assessments and had safety devices provided and installed as determined by the assessment. Fifty-five (55) families participated in the three-month follow-up and 37 families participated in the 12-month follow-up.

Results from this evaluation indicated that providing safety devices and installations for “at high risk” families enrolled in the long-term home visiting program resulted in injury prevention benefits as reported by both the home visitors and participating families. Specifically, there was a decrease in self reported injuries by families from the time of the baseline survey to the 12 month follow-up. Families also reported consistent use of the safety devices. Self reporting from families and home visitors indicated that the program was beneficial for increasing interest in learning about injury prevention, reducing barriers to their addressing other needs, and increasing opportunities for dialogue about supervision and injury prevention.

Implications for Practice

- Existing home visiting programs such as Healthy Babies Healthy Children provide a receptive vehicle for interested and eager families to participate in this type of intervention.
- The home visitor role that was carried out by the Family Support Workers, provide an ideal vehicle to provide injury prevention assessments, arrange for safety devices and installations, and provide ongoing prevention education.

Recommendations

The following are recommendations to further the development of effective in-home injury prevention programs:

- 1) Continued research and evaluation of similar home visiting programs;
- 2) Cost benefit ratios for in-home safety programs for children 0 to 6 years;
- 3) Development of a common definition for toppling to be included in injury monitoring systems;
- 4) Further data analysis of injury data by each age for children 0 to 6 years, at provincial and national levels.
- 5) Advocating for sustained funding for program implementation costs including safety devices and contractor fees.
- 6) Coordination and follow-up with other public health organizations who have implemented similar projects.

Purpose

The purpose of the Creating Safer Homes Project is to determine if providing safety devices and installations for “at high risk” families enrolled in the Ontario public health long-term home visiting program, Healthy Babies Healthy Children, will have reported injury prevention benefits for both home visitors and participating families.

The definition of “at high risk” is from the consolidated guidelines for the Healthy Babies Healthy Children program, Ontario Ministry of Health and Long-Term Care. It is based on:

- 1) nursing or other comparable judgement and the results of an in-depth assessment using the Family Assessment Tool)
- 2) there is a serious risk that a child may not reach his/her potential; and
- 3) the family may benefit from more intensive Healthy Babies Healthy Children services like home visiting and service coordination.

Evaluation objectives include:

- 1) Increase the number of “at risk” families using identified home safety devices provided by the Creating Safer Homes Project.
- 2) Decrease the number of injuries to children in participating families;
- 3) Home visitors will report a decrease barriers of “at risk” families’ to injury prevention education; and
- 4) Increase opportunities for “at risk” families and home visitors to talk about supervision of children and injury prevention.

Sample

Sixty-nine (69) households were enrolled in the project with 55 households (80%) still participating in the three-month follow-up and 37 households (54%) participating at 12 months. The attrition over the project can be attributed to the transient nature of the participating families.

Description of Programs Involved

Healthy Babies Healthy Children is a prevention/early intervention initiative designed to help families promote healthy child development and help their children achieve their full potential. This free voluntary program is offered to pregnant women and families with young children through local public health units.

The Creating Safer Homes Project focuses on families who are clients of Algoma Public Health’s, Healthy Babies Healthy Children home visiting program and the Infant and Child Development program for families with children 0 to 6 years who have two or more developmental delays. Both of these programs invited families to participate in this home safety program as part of their service planning. These early intervention programs focus on families identified as high risk for problems that may compromise healthy child development and who would benefit from home visiting. These services are voluntary and require family consent.

The Family Support Worker (FSW) and Public Health Nurse (PHN) work as a team providing long-term home visiting in the Healthy Babies Healthy Children program. The PHN’s role is service

coordination; the FSW's role is "hands on" skill building related to parenting. Visits from the FSW are usually weekly or bi-weekly. The frequency and nature of the home visits foster relationships between the FSW and the family. The most important qualification for an FSW is experience as a parent, as extensive on the job training is provided. Most FSWs involved in the Creating Safer Homes project have 10 years of experience with the program. Due to the nature of the work, Family Support Workers are in a favourable position to implement and evaluate this type of in-home intervention.

A total of 69 families received assessments and installations of home safety devices with 59 of these interventions completed by the Family Support Workers and 10 completed by the Parent Child Advisors from the Infant Development Program. For the purpose of this report, staff involved in implementing the Creating Safer Homes Project with families will be referred to as home visitors.

Methodology

The Creating Safer Homes Project occurred from January 2004 to August 2006. With the assistance of a home visitor, participants completed an Agreement to Participate form (Appendix 1) and a Baseline Tool form (Appendix 2). The Creating Safer Homes assessment was guided by an assessment tool developed in collaboration with Safe Kids Canada. The assessment tool was available in two formats: one format was an educational folder given to the family to keep and refer to, and the other was a worksheet format for the home visitor to use during the home assessment to assist with note taking and education. The assessment tool linked the safety devices provided with the type of injury it could prevent, and was not a comprehensive safety educational assessment tool. A comprehensive checklist found in the training manual for all Family Support Workers: A Curriculum for Training Family Home Visitors¹ was available and used in their practice during and prior to this project.

Efforts were made to provide safety devices known to be effective when used properly, such as safety gates. Some devices without scientific evidence of their effectiveness were also included, such as clothespins for blind cords and duct tape for securing electrical cords. Several devices were available to families, though not all families required each device.

The following devices were provided:

- Safety gates for the prevention of falls where stairs were situated (extension gates were required for some homes where the standard size gates were not wide enough)
- Hook and eye and door latches for doors that posed a risk of falls (i.e. basement or exit doors)
- Furniture safety straps for top heavy furniture
- Cupboard and drawer latches to secure sharp and poisonous products
- Door knob covers
- Clothespins for blind cords
- Outlet plugs and swivel outlet covers
- Duct tape to secure loose cords
- Window stops

¹ Invest in Kids, 2001

The home visitor also used hot water testing cards to determine the temperature of the home's hot water and arranged to have dangerous water temperatures lowered. The home visitor used a small parts toy tester to demonstrate toys that may cause choking.

Items that required installation were done by a project contractor hired by Algoma Public Health. The home visitor was always present in the home while installations were being completed. Families could install the devices themselves after a release from liability form was signed by the primary caregiver and witnessed by the home visitor.

A 3-month and 12-month evaluation follow-up was jointly completed by the home visitor and the family. The evaluation measured continued use of the safety devices provided, self reported incidence of injuries to their children, and self reported changes in behaviour related to their interest in learning about safety and supervision of their children. The home visitor also reported the supervision practices of the family and family participation in the evaluation follow-up. (Appendix 3).

The home visitors were interviewed prior to implementation, and after implementation regarding their attitudes related to their role in injury prevention.

Limitations

This was a simple descriptive study with all the limitations of such a study. Specific limitations include:

- 1) Comparisons of injury frequencies across timeframes should be done cautiously as the number of injuries may be confounded by the increasing age of children and their growth and development which will impact the risk of injury.
- 2) A convenience sample was used – families who were clients of the long-term home visiting program of Healthy Babies Health Children;
- 3) Social desirability (the caregiver wanting to create a favourable impression) and reporting bias factors (caregiver may feel guilty about their child's injury) may have existed.
- 4) Memory bias may also have influenced the caregivers perception of how past events occurred.

Literature Review

Young children, from birth to age five, are particularly vulnerable to injuries in the home. In Canada in 2002, 66% of children emergency room visits resulted from injuries occurring in the home. Home injuries are usually caused by falls, burns, poisoning, choking, strangulation or drowning. Falls represented over one half of the cases (58.2%) for ages 0 to 4 years. Children's risk of injury increases between their first and second birthdays. From birth to 4 years, 20% of injuries resulted in a fracture, sprain or dislocation, and 14% resulted in a minor closed head injury.² Falls are the most common cause of injury for infants which frequently result in head injuries.³ Since falls occur so frequently even a small percentage of serious cases represent a large number of fall-related injuries. If minor head injuries pose long-term consequences, this would be reason enough to intensify efforts to

² Health Surveillance and Epidemiology Division, Public Health Agency of Canada, 2005

³ Pickett, Streight, Simpson & Briston, 2003

prevent fall-related injuries in children.⁴ In a Northern Ontario telephone survey, 9% of participants reported their child sustained a fall serious enough to need medical attention in the past year.⁵

Comparing age specific rates in Ontario hospital admissions data from 1997 to 2001, the injury rate is fairly consistent across regions with the exception that Northern Ontario and the Algoma district had a significantly higher rate for poisoning. The poisoning rate for Algoma is 17%, which is higher than Northern Ontario's rate at 14% and double the provincial rate at 8%.⁶

A recent study found that children from a low socio-economic status (SES) face a much higher risk of death from injury than those of average to high SES. There is a need to decrease injury related mortality and morbidity among children living in low SES areas. Such targeted prevention should be implemented for injuries with the largest SES rate differences, such as those from fires, drowning and falls.⁷

Injury rates among the poor are one of the most striking examples of health inequalities in developed countries. According to one study, safety practices requiring more effort and expense, such as stair gates, were least commonly used, and most parents believed a link existed between being high stress and an increase in accidents.⁸

Another study found that home accidents were related more to the financial and social circumstances than lack of home safety information. Home visitors in this study also reported difficulties at raising and discussing home safety issues with families. Home visitors cited reasons such as, families would see them as critical, home safety is not a priority and safety education alone would not make a difference.⁹ Yet another study stated that home safety practices increased when access to low cost safety products was included in the intervention with low SES families.¹⁰ And along the same thought, another study showed that home safety programs that are integrated with home visitation programs are recommended and have the capability of reducing child injury rates.¹¹

Results

For the purpose of reporting the results of the Creating Safer Homes, the terms families and households are used interchangeably.

⁴ Health Canada, 1997

⁵ Northern Ontario Perinatal and Child Health Survey Initiative, 2003

⁶ Northern Ontario Child and Youth Health Report, 2003

⁷ Birken, Parkin & McCarthur, 2006

⁸ Ramsay, Moreton, Gorman, Blake, Goh, Elton & Beattie, 2003

⁹ Ehiri, 1995

¹⁰ Gielen, McDonald, Wilson, Hwang, Serwint, Andrews & Wang, 2002

¹¹ King, LeBlanc, Barrowman, Klassen, Bernard-Bonin, Robitaille, Tenenbein & Pless, 2005

Demographic Profile

The demographic characteristics of the 69 baseline households that participated include:

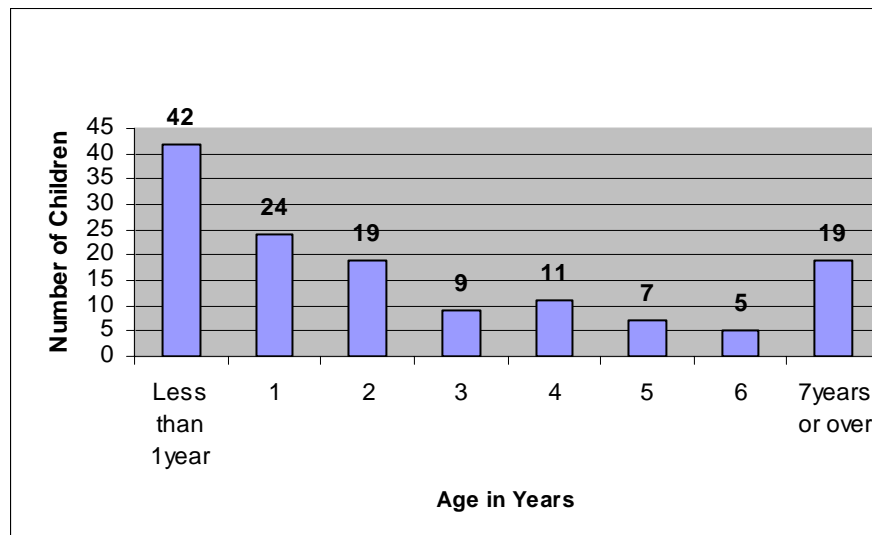
- 35 households (51%) were single parent led families.
- In 30 households (43%) there were 2 adults.
- In 4 households (6%) there were 3 or more adults.
- In households with two or more adults the relationship among these adults includes partners, extended family, and/or friends.
- Sixty-three baseline households (92%) families rented their homes.

The age of the primary caregiver ranged from 17 to 38 years. In 10 households (14%) the age of the primary caregiver ranged from 15 to 19 years, in 28 households (41%) the age of the primary caregiver ranged from 20 to 24 years, in 15 households (22%) the age of the primary caregiver ranged from 25 to 29 years, in 10 households (14%) the age of the primary caregiver ranged from 30 to 34 years, and in 6 households (9%) the age of the primary caregiver ranged from 35 to 39 years.

For highest education levels completed, 44 primary caregivers (64%) reported that they completed high school; 18 primary caregivers (26%) reported at least some post-secondary education. 4 primary caregivers (6%) stated that they did not complete high school.

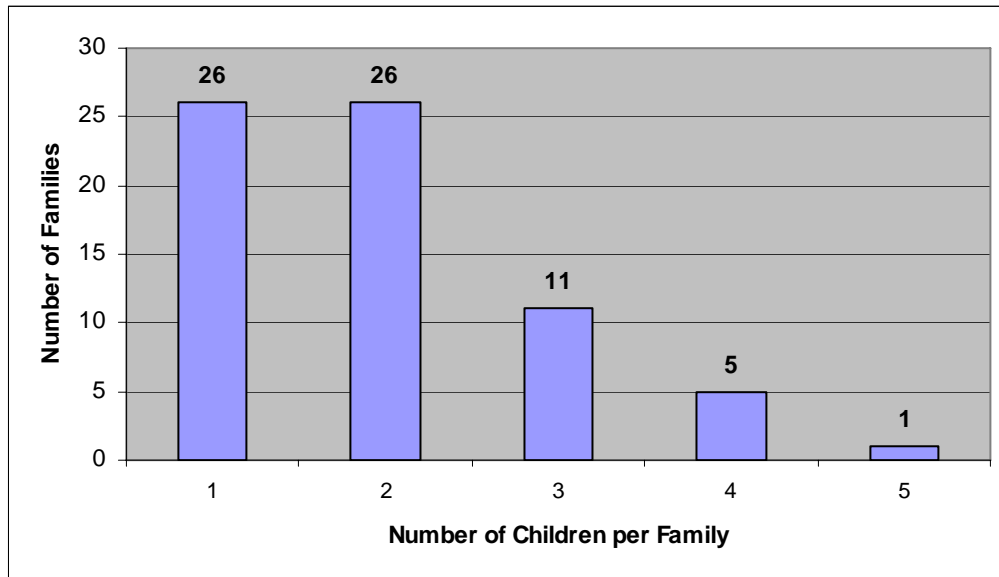
There was a total of 136 children within the baseline families. Nineteen (19) children were 7 years and older. Only children ages 0 to 6 years were the focus of this report. There were 117 children 0 to 6 years in the sample. The frequency distributions of ages of children are shown in Figure 1.

Figure 1. Age Breakdown of Children in Baseline Households (n=136)



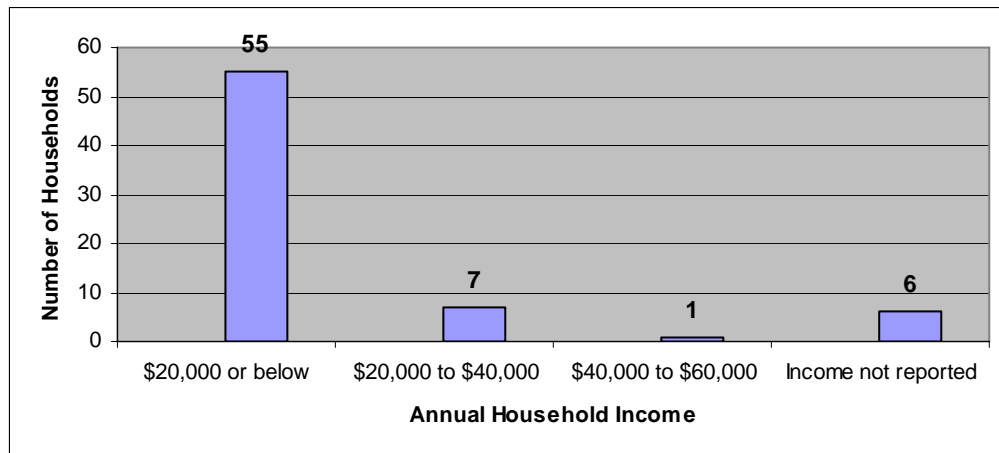
There were 26 families with one child, 26 families with 2 children, 11 families with 3 children, 5 families with 4 children, and 1 family had 5 children. The number of children per household is shown in Figure 2.

Figure 2. Frequency Distribution of Number of Children in Baseline Households (n=69)



55 households in the baseline (79%) reported incomes of \$20,000 or below; 7 households (10%) reported incomes greater than \$20,000 but less than or equal to \$40,000; 1 household (1%) reported a household income of greater than \$40,000 but less than or equal to \$60,000; none reported incomes greater than \$60,000 (Figure 3).

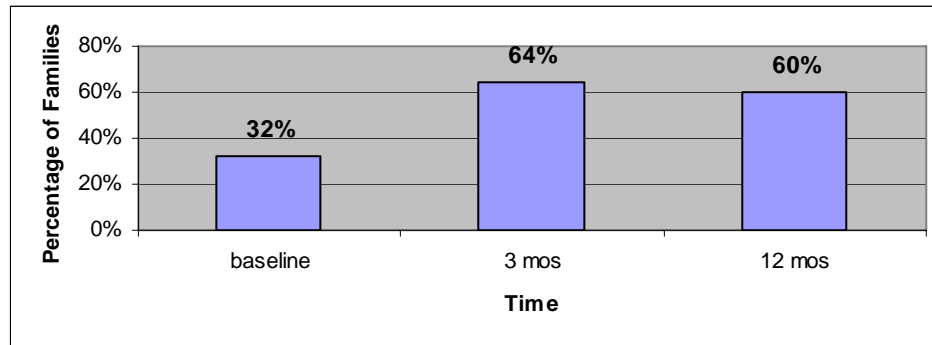
Figure 3. Frequency Distribution of Income by Baseline Household (n=69)



Injury Incidence

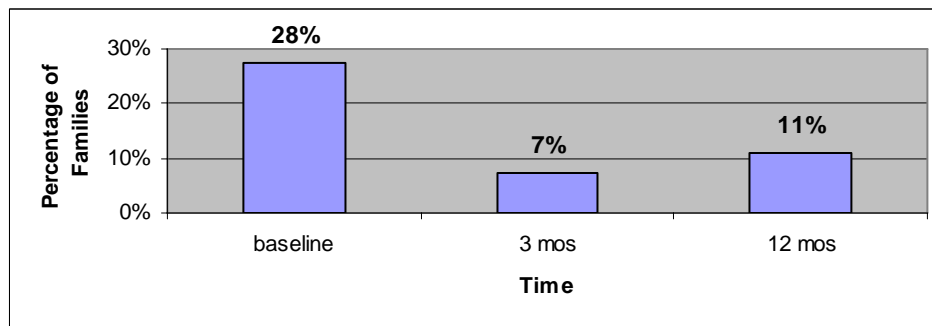
In the baseline survey, 32% of households reported no injuries. At 3 months and 12 months the number of households reporting no injuries increased to 64% and 60% respectively (Figure 4).

Figure 4. Percentage of Households Reporting No Injuries over Time



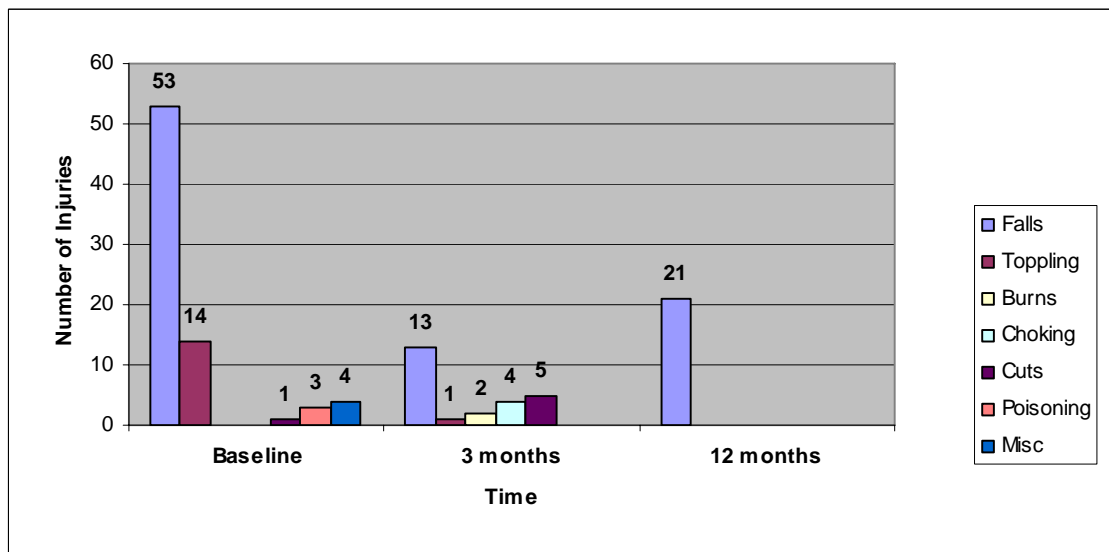
The number of households that reported two or more injuries in the baseline survey was 28% with the incidence decreasing over time (Figure 5).

Figure 5. Percentage of Households Reporting 2 or More Injuries over Time



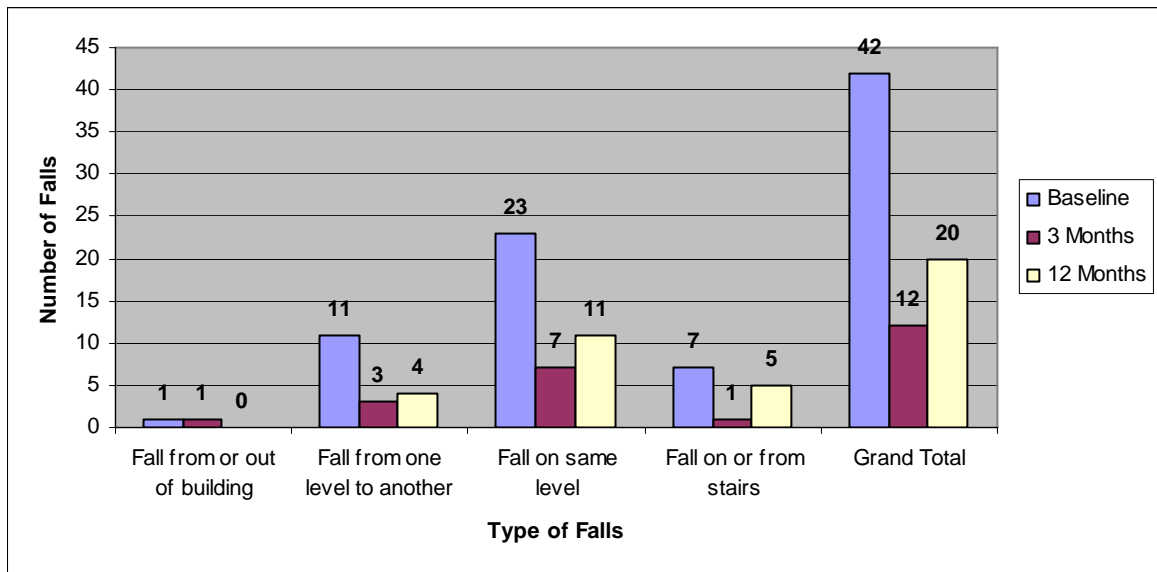
Falls were the most common injury at baseline, 3 months, and 12 months. Toppling was the next most common injury prior to implementation (Figure 6). It was interesting to note that falls was the only type of injury reported at the 12 month follow-up.

Figure 6. Frequency Distribution of Types of Injury over Time



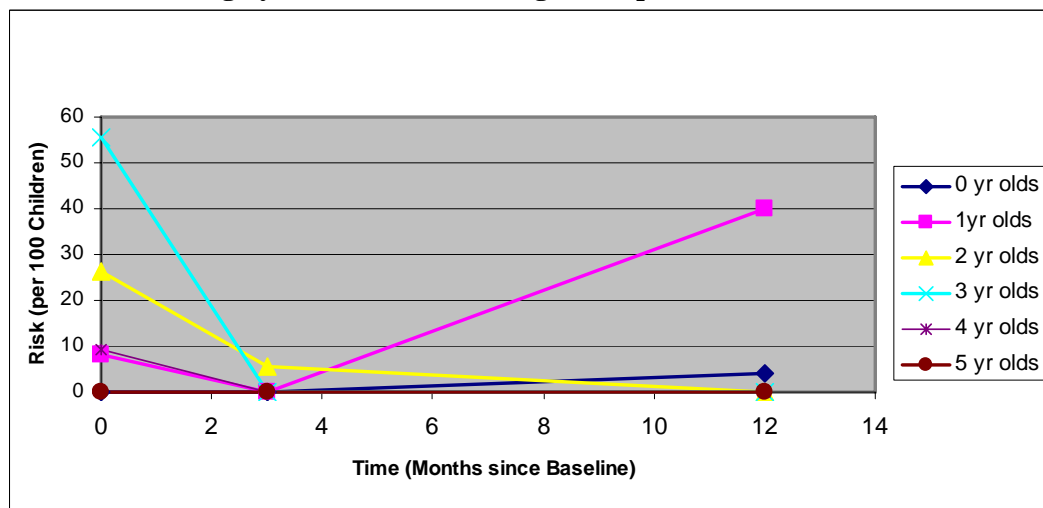
Since falls are the most common and consistent reported injury, the falls data was sorted into types of falls for children 0 to 2 years (Figure 7). Comparing Figures 6 and 7 it is noted that the frequency of falls to children 2 years and under for all timeframes is 74 falls, whereas the frequency of falls for children 0-6 years is 87 falls. Children 2 years and younger experienced 85% of the falls reported in this project.

Figure 7. Frequency Distribution of Types of Falls for Children 0 to 2 Years over Time (n=85)



The number of falls in the project was further analyzed to assess the risk of falling over time (Figure 8). A one-year-old child entering the program has a less than 10% risk of falling; however this risk increases to 40% over the next 12 months. A two-year-old child entering the program has a 30% risk of falling, which decreases to 0% risk over the next 12 months.

Figure 8. Risk of Falling by Baseline Children Age Group over Time

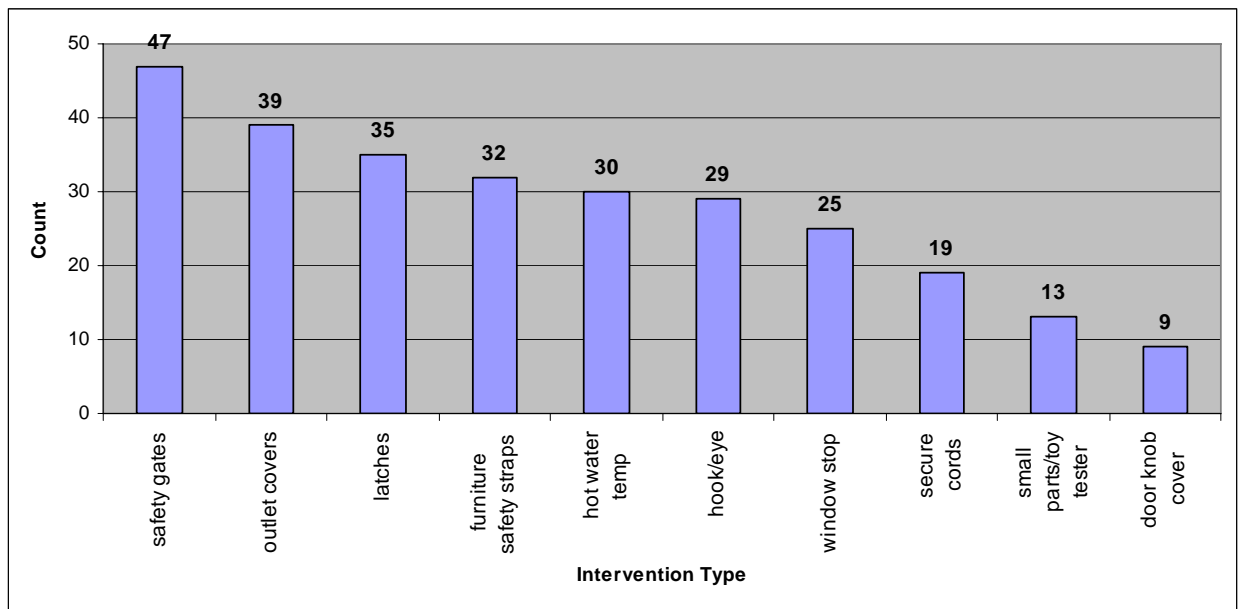


Intervention Use

The program included eleven potential safety interventions. The number of households who received each type of intervention is shown in Figure 9. The safety gate intervention was provided most frequently to 47 households. Homes receiving safety gates received two gates for the top and bottom of stairs. The doorknob cover intervention was provided least often to 9 households. The outlet plugs and outlet covers were grouped together. The internal and external cupboard latches were also grouped together. Securing cords indicated that the home visitor demonstrated how to secure excess cords that are often present with entertainment units. Duct tape was commonly used to secure cords. The small parts toy tester was used by the home visitor to demonstrate the size of objects that could cause choking.

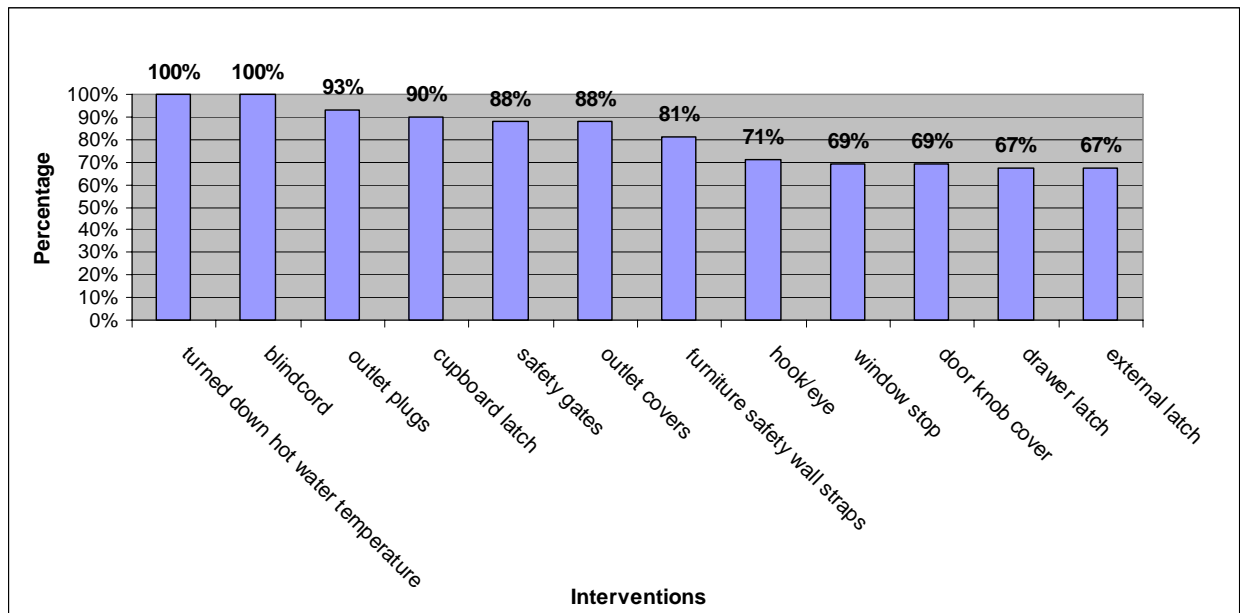
The majority of households received multiple devices. 82% of households received four or more devices.

Figure 9. Number of Households that Received Interventions by Type (n=69)



Participants reported on the consistent use of devices using a 5-point scale ranging from “always use” to “never use.” 100% of participants at the 12-month follow-up reported that they always used the intervention to secure blind cords, and if their hot water temperature was turned down, it remained turned down 12 months later. The outlet plugs/covers, cupboard latches, safety gates, and furniture safety wall straps were always used by 80% of respondents (Figure 10).

Figure 10. Percentage of Families who Reported “Always Using” Interventions at 12 Months



Families’ Attitudes about Injury Prevention

Some results on families attitudes towards injury prevention were:

- 90% of participants in the baseline survey stated that household safety for children is a “serious” or “very serious” issue.
- 77% felt in-home injuries were “preventable” “quite preventable” or “completely preventable” with 22% stating that they thought in-home injuries were “completely preventable.”
- 63% of the 55 participants at the 3-month follow-up indicated that participation in the program increased their awareness of household safety issues. At 12 months, increased awareness was reported by 80% of the 37 participants.
- 100% of the participants at both the 3 and 12 month follow-up indicated that they thought the devices assisted to prevent injuries.
- 70% of the participants at 3 months and 87% of the participants at 12 months indicated that participation in the project affected their interest in learning about safety.
- When participants were asked to list three things that they do differently because of their participation in the Creating Safer Homes Project, the most common practices identified at 3 months were the use of safety gates (20%), more supervision (20%) and environmental awareness (20%). At 12 months, the most common practices identified were nothing (11%), use of gates (9%), more aware (5%), and supervise more (5%).
- Some additional comments by parents included “peace of mind/less stress” and “if I didn’t have help I would have used wrong devices/intervention”.
- When asked if the safety devices and safety education changed the way they supervise their children, at the 3 month follow-up 51% said “yes” and 49% said “no.” At the 12 month follow-up 40% said “yes” and 37% said “no” and 23% did not respond.
- Comments from parents about supervision included: “more freedom for children to explore and play safely,” “increased relaxation,” “not needing to follow kids constantly,” “not

worried about stairs,” “feel more comfortable to smoke outside and go to the bathroom,” and “easier to supervise.”

- Eighty-six percent of participants at the 3 month follow-up, and 85% at the 12 month follow-up shared their learnings with others.
- 100% of participants in both the 3 and 12-month follow-up would recommend the program to others.

Home Visitors’ Attitudes about Injury Prevention

Family Support Workers reported the following:

- Increased knowledge regarding injury prevention post intervention.
- A greater comfort level educating families about injury prevention and providing the devices.
- A structured program helped to get families involved and to focus on injury prevention.
- Families were engaged in the process, interested in planning ahead, and anticipated future injury concerns.
- Supervision became a common message, and there were more opportunities to reinforce the importance of supervision, especially when doing 3 and 12 month follow-ups.

Discussion

The Creating Safer Homes Project utilized an existing home visiting program, Healthy Babies Healthy Children, that provides long-term home visiting to families with children 0 to 6 years that are at risk for poor child development for variety of factors. Low socioeconomic status is a consistent factor with these families. The safety devices provided in the project were utilized to prevent injuries commonly reported in the literature. The role of the home visitors was to provide caregivers with education, safety devices, and coordinate contractors for installation of safety devices. Also, home visitors were to increase opportunities for dialogue between themselves and the caregivers related to supervision of children and injury prevention.

The Creating Safer Homes Project was a simple descriptive study that demonstrated that assessing participants’ in-home safety needs, providing them with devices and installation, and discussing the importance of in-home safety was an effective intervention to improve home safety for children 0 to 6 years. The project demonstrated a reduction in the number of reported injuries, consistent use of devices, increased interest reported by participating families in injury prevention education, and increased opportunities reported by home visitors to talk about supervision of children and injury prevention with participating families. The findings support the recommendations by King et al. that by integrating home safety programs with existing home visitation programs which have the capability of reducing child injury rates.¹²

The Smartrisk report on Economic Burden of Injury in Ontario (2006) indicated that a 20% reduction in the incidence of injuries from falls for children 0 to 14 years in Ontario would avoid costs that total over \$62 million each year.¹³ It is encouraging that the participants in the Creating Safer Homes Project reported reductions in all injuries with reductions in falls being the most notable. Families who reported two or more injuries decreased their in-home injury frequency by 21% at 3 months and

¹² King, LeBlanc, Barrowman, Klassen, Bernard-Bonin, Robitaille, Tenenbein & Pless, 2005

¹³ Smartrisk 2006

17% at 12 months. It is not surprising that falls are the most commonly reported injury in this study due to the developmental ages of the study children. Toppling was reported as a common injury type prior to implementation. The low reported incidence of the other injury types like cuts, burns, and especially poisonings did not mirror the findings reported in the 2004 Northern Ontario Child and Youth study where the rate of accidental poisonings in Algoma for children 0 to 6 years between 1997 and 2001 was 17%, double that of the Ontario provincial rate at 8%.¹⁴

Seventy nine percent of families in this study reported incomes of \$20,000 or less. According to the low income cut offs for Canadian families living in a city with a population comparable to Sault Ste Marie with 3 children, the poverty income level is \$27,217.00 or below, with 2 children it is \$22,139.00 or below, and with one child it is \$17,784 or below.¹⁵

Forty-eight percent of the households in this study had a single child 6 years of age or younger; 39% had two children 6 years of age or younger; 13% had 3 or more children 6 years or younger.

As reported by Ramsey et al., providing home safety programs for families with lower socioeconomic status and high stress like the families participating in Healthy Babies Healthy Children can reduce injuries. In contrast to the Creating Safer Homes Project where safety gates were provided to families, the Ramsey study found that families were least likely to use devices such as gates that required more expense and effort to utilize.¹⁶

The findings from the Creating Safer Homes Project paralleled a study by Ehri et al. that found home visitors reported that by providing safety devices along with education certain barriers were removed like discussing safety issues with the family without being seen as critical and helping families to see home injury prevention as a priority.¹⁷ The findings of this project also support the findings by Gielen et al. who found that providing low cost safety devices increased home safety practices among families with low socioeconomic status.¹⁸

Implementation Issues

There were some growing pains associated with the implementation of this project. In February 2004 the home visitors observed a quality concern with the particular make of safety gate that had been selected. The bottom horizontal wooden bar on the safety gate was easily dislodged from the metal bracket. The manufacturer was notified. The company investigated this concern and in April 2004 informed the project lead that the gate mounting hardware was changed to limit the tolerance, or play, between the side of the gate and the mounting bracket. This modification did not require a recall and the company assured the project lead that the safety gate met safety standards. The home visitors replaced the problematic gates in participating homes and the company compensated the project for this inconvenience.

Despite the modification to the safety gate bracket, the home visitors continued to notice that some gates still had too much play and could be easily dislodged. It was decided in October 2005 to find a replacement gate. In addition to the delays related to the gate, installations were delayed because of

¹⁴ Northern Ontario Child and Youth Health Report, 2003

¹⁵ Canadian Council on Social Development

¹⁶ Ramsay, Moreton, Gorman, Blake, Goh, Elton & Beattie, 2003

¹⁷ Ehri, 1995

¹⁸ Gielen, McDonald, Wilson, Hwang, Serwint, Andrews & Wang, 2002

the need to change contractors. It took from August to November 2005 to find a new contractor. Both these incidents had an affect on our sample size.

Initially families were provided with one gate, and extra hardware was installed at the top and bottom of the stairs, so the gate could be transferred from one location to another. As of July 2005, the extra gate hardware was no longer available for purchase and after this point, families received two gates.

Another new development during the implementation phase was that a release from liability form was created in October 2004 which allowed families to install their own devices.

Another lesson learned was that it is important to ensure that checks are in place to ensure consistent data collection and data entry. In some cases it was difficult to determine the frequency of use of some interventions resulting in the possible underreporting of usage by some participating families.

Implications for Practice

The Creating Safer Homes Project provided a model for utilizing existing home visiting programs for families with children 0 to 6 years. Several other Ontario public health units implemented injury prevention models similar to Creating Safer Homes as part of the Early Child Development Initiatives funding. Follow-up with these other public health units would be of interest to provincial organizations with an injury prevention mandate.

Algoma Public Health has not yet found an alternate annualized funding source since the Early Child Development initiatives funding has ended as of December 2006. The current Ontario public health mandatory guidelines do not identify in-home safety practices for the 0 to 6 year old as a public health focus. However, the new Ontario public health program standards presently under review are more inclusive of injury prevention practices for the zero to six age group as they include a program standard focusing on falls prevention for all ages. Local corporate sponsors, service clubs, and injury prevention organizations will be approached with the results of this project to financially support this program.

It was a challenge to find injury prevention data for the 0 to 6 age group. Most injury prevention data groups are in a 0 to 14 years age category. A further breakdown of this 0 to 14 age group to include the age group 0 to 6 years would be helpful in looking at childhood injury data. What would be most advantageous would be to break the data down even further so that comparisons could be made among infants, toddlers and preschoolers.

Toppling is not well documented in the literature. The experience of this project indicates that toppling presents a common injury. The development of a widely accepted definition for toppling to be included in injury monitoring systems to identify and measure the incidence is recommended.

Conclusions

The findings of the Creating Safer Homes Project support the integration of home safety programs with home visitation programs. Results from this evaluation indicate that providing safety devices and installations for at high risk families enrolled in a long-term home visiting program resulted in injury prevention benefits as reported by both the home visitors and participating families. Specifically there was a decrease in self reported injuries from the baseline survey to the 12 month follow-up. Families reported consistent use of the safety devices. As well, families and home visitors

indicated that the program was beneficial for increasing interest in learning about injury prevention, reducing barriers, increasing opportunities for dialogue about supervision and injury prevention.

Further research could include the replication of the Creating Safer Homes Project with families with children 0 to 6 years involved in similar long-term home visiting programs using a quasi experimental design.

Recommendations

The following are recommendations to further the development of effective in-home injury prevention programs:

- 1) Continued research and evaluation of similar home visiting programs.
- 2) Cost benefit ratios for in-home safety programs for children 0 to 6 years.
- 3) Development of a common definition for toppling to be included in injury monitoring systems.
- 4) Further data analysis of injury data by each age for children 0 to 6 years, at provincial and national levels.
- 5) Advocating for sustained funding for program implementation costs including safety devices and contractor fees.
- 6) Coordination and follow-up with other public health organizations who have implemented similar projects.

Algoma Public Health - Creating Safer Homes Project

Participation Consent

I agree to participate in the *Creating Safer Homes Project* with Algoma Public Health that will consist of at least four home visits.

With my home visitor, I will:

- 1) Complete a survey on home injuries that have occurred during the past year;
- 2) Complete a room by room check of my home to assess my injury risks and needs;
- 3) Participate in an education session in my home describing the program as well as common home injuries and how they may be prevented;
- 4) For identified risks within the scope of the project, be given devices to assist in minimizing these risks;
- 5) Participate in two follow-up surveys in 3 months and 12 months. If you have moved or are no longer an Algoma Public Health client the listed contact person will be called to help us connect with you.

I understand that:

Where applicable, the Algoma Public Health home visitor will notify my Sault Ste. Marie Housing Authority Case Manager of my participation.*

If appropriate, my home visitor will make arrangements for a handy person to come to my home with my home visitor to install identified devices.

Every attempt will be made to recycle the safety gates back to the project.

My participation is voluntary and I may withdraw from this program at any time without affecting the other services that I receive.

Participation in this project will not provide 100% protection from injuries.

Safety devices do not replace adult supervision of young children. Adult supervision is still the best strategy to prevent childhood injuries.

Any information collected during the home visits will be confidential and will be stored in a locked cabinet. My answers will be put together with those of other program participants by the Research Team at Algoma Public Health. My name will not be connected in any way with this report. The results of this project will be put into a report to assist healthcare professionals understand how to better work with families to reduce in-home injuries.

If I have any questions about this project I may contact the Project Lead at 705-942-3103 ext. 246.

*If you are not a resident in a SSM Housing unit, it is recommended that you inform your landlord about your participation in the Creating Safer Homes Project.

As evidenced by my signature below, I hereby release the Algoma Health Unit, its officers, directors, employees and suppliers from any and all claims, debts, actions and liability which may arise directly or indirectly from participation in this project for any loss, injury, death, damages to or in respect to any person or property howsoever caused.

Participant's Signature

Date

Home Visitor Signature

Date

Baseline for Creating Safer Homes Project

Background Information

Name: _____ Date: _____

Address: _____ Phone: _____

Contact Name: _____ Contact Phone: _____

Relationship to Participant: _____

1. Please list residents living in the home		
Name and Relationship	Age	Gender

2. Do you: ___ Rent ___ Own

3. Type of dwelling: ___ single family home ___ duplex/triplex/fourplex
 ___ apartment ___ high rise apt. building
 ___ townhouse ___ other _____ (specify)

4. Type of landlord: ___ Co-op ___ SSM housing ___ Private
 ___ Other _____ (specify)

5. Number of: Rooms (total) _____
 Bedrooms _____
 Bathrooms _____
 People living in the home _____

6. How serious an issue do you consider child home injuries to be, compared to other health issues that can affect children?

___ Very serious ___ Serious ___ Somewhat an issue ___ Minor issue
 ___ Not an issue

7. Do you think that most childhood injuries (accidents) in the home could be prevented?

___ Almost completely Preventable ___ Quite Preventable ___ Somewhat Preventable
 ___ Not very ___ Not at all

8. Injury History

Since the last time we reviewed this paperwork _____ have any of the children hurt themselves with any of the following injuries that happened in your home?

Falls _____ Yes _____ No
 Toppling _____ Yes _____ No
 Poisoning _____ Yes _____ No
 Cuts _____ Yes _____ No
 Burns (Fire, Electric) _____ Yes _____ No
 Scalds (Hot Liquids) _____ Yes _____ No
 Choking _____ Yes _____ No
 Electrical Shocks _____ Yes _____ No
 Other (please specify): _____ Yes _____ No

9. Injury Specifics: If you answered yes to any injury item in Question 11, which home injuries did you seek treatment for? (e.g. walk-in clinic, emergency, doctor, TeleHealth including poison control line, home treatment).

Family Member	Age	Description of Injury (Type/Severity)	Details of Injury (e.g. location, time, circumstances, supervision)	Medical Attention and Treatment (please circle one)	Consequences of Injury for Family
(example: John)	4	Injury Type Fall – hit head and scrapes / bruises to hands and knees	Fell on stairs Loose rug on stair landing Running downstairs for dinner 5:30 p.m.	i) Minimal consequences – no treatment ii) Home treatment by non-medical personnel iii) Phone line assistance such as Telehealth or Poison Control (please circle)	i) Caregiver missed school/work # of days: _____ ii) Child missed daycare/school # of days: _____ iii) Approx. cost of medical supplies to family (e.g. bandages, crutches etc.) \$ _____ iv) # of days in Hospital _____ v) Other (please

Family Member	Age	Description of Injury (Type/Severity)	Details of Injury (e.g. location, time, circumstances, supervision)	Medical Attention and Treatment (please circle one)	Consequences of Injury for Family
				iv) Walk-in Clinic v) Family Doctor vi) Emergency Department vii) Hospital Admission	specify)
(example: John)	4	Injury Type Fall – hit head and scrapes / bruises to hands and knees	Fell on stairs Loose rug on stair landing Running downstairs for dinner 5:30 p.m.	i) Minimal consequences – no treatment ii) Home treatment by non-medical personnel iii) Phone line assistance such as Telehealth or Poison Control (please circle) iv) Walk-in Clinic v) Family Doctor vi) Emergency Department vii) Hospital Admission	i) Caregiver missed school/work # of days: _____ ii) Child missed daycare/school # of days: _____ iii) Approx. cost of medical supplies to family (e.g. bandages, crutches etc.) \$ _____ iv) # of days in Hospital _____ v) Other (please specify)

10. Safety Practices for Types of Injuries (Some home visitors may prefer to use the Baseline Worksheet for this.

Review the injury types with family. Use the prompts to identify the specific risks a family has and document the steps to all.

*Required notification of SSM Housing Units. Recommend notification of landlord.

Injury Prevention	Prompts	Identified Risks	Device	Need Y/N	Action Steps
Falls	Stairs Basement door Windows on upper levels Balconies Cluttered hallways, doorways, stairs Electrical Cords	Have you taken any steps to ensure that your child is protected from falls?	Safety Gates*		
			Window Stops*		
			Hooks and Eyes*		
Toppling	Wall units Appliances TV stands Book Shelves Dressers Electrical Cord	Have you taken any steps to ensure that your child is protected from toppling?	Wall Straps/brackets*		
			Duct tape for loose cords		
Poisoning	Cleaning supplies Medications Purses Alcohol / Cigarettes / Other	Have you taken any steps to ensure that your child is protected from poisoning?	Hooks and Eyes*		
			Cupboard latches*		
			Door knob covers		
Cuts	Storage of knives, scissors, needles, tools	Have you taken any steps to ensure that your child is protected from cuts?	Cupboard latches* Duct Tape to tape padding to sharp corners on furniture.		
Burns	Candles, matches, glue guns	Have you taken any steps to ensure that your child is protected from burns?			
Scalds	Tap water temperature Coffee, tea, kettles	Have you taken any steps to ensure that your child is protected from scalds?	Test water temperature with thermometer		
Fire	Smoke alarms Batteries Testing smoke alarms Matches, lighters	Have you taken any steps to ensure that your child is protected from fire?	Smoke alarm*		
			Batteries		

Choking / Suffocation / Strangulation	Small objects, plastic bags, trunks, old appliances, pillows and stuffed toys in crib Blind cords	Have you taken any steps to ensure that your child is protected from choking?	Small parts toy tester Clothes pins to hold up blind cords		
Electrical Shock	Switch plates Electrical outlets Frayed cords	Have you taken any steps to ensure that your child is protected from electrical shock?	Outlet plugs Outlet Covers Swivel outlet covers		

First Aid

11. Have you ever taken a First Aid Course? ___Yes ___No
12. Would you be interested in taking a First Aid Course or refresher course? ___Yes ___No___
13. How much would you be willing to pay to attend a First Aid course? _____
14. Would you require childcare? ___Yes ___No

Demographic Information (Please indicate which best describes you.)

15. Employment status: (please check one)

- Looking after the home full time _____
- Working in a paid part time job _____
- Working in a paid full time job _____
- Unemployed _____
- Other (please specify) _____
- Don't know/refused _____

16. Highest Level of education: (please check one)

- Some High School _____
- Completed High School _____
- Some College/University _____
- Completed College/University _____
- Trade School _____
- Other (please specify) _____
- Don't know/refused _____

17. Which category would your total household income fall under? (please check one)

- Less than \$20,000 _____
- 21,000-\$40,000 _____
- \$41,000-\$60,000 _____
- \$61,000 + _____
- Don't know/refused _____

7. Do you think that most childhood injuries (accidents) in the home could be prevented?

Almost completely Preventable Quite Preventable Somewhat Preventable
 Not very Not at all

8. Injury History

Since the last time we reviewed this paperwork _____ have any of the children hurt themselves with any of the following injuries that happened in your home?

Falls	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Toppling	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Poisoning	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Cuts	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Burns (Fire, electric)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Scalds (hot liquids)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Choking	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Electrical Shocks	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No

(please specify)

13. Which of the safety devices were installed in your home?

Device	Installed Yes/No	Used Consistently Yes/No 5 -Always 4- Most of the Time 3-Sometimes 2-Not Much 1-Never	Comments
Safety Gate			
Window Stops			
Hooks and Eyes			
Wall Straps/Brackets			
Cupboard Latches			
Drawer Latches			
Door Knob Covers			
Outlet Plugs			
Swivel Outlet Covers			
External Latch			

Device	Installed Yes/No	Used Consistently Yes/No 5 –Always 4- Most of the Time 3-Sometimes 2-Not Much 1-Never	Comments
Turn Down Hot Water Temperature			
Smoke Alarms			
Clothes Pins for Blind Cords			
Duct Tape for Cords			
Small Parts Toy ester			

14. Do you think that the devices assisted to prevent in-home injuries?
15. Did your participation in this program affect your interest in learning about safety?
16. List 3 things that you do differently as a result of your participation?
17. How have the safety devices and safety education changed the way you supervise your children?
18. Did you share any of your learning's with friends or family?
19. Would you recommend this home safety program to others?
20. Do you know of other in-home safety hazards that this program did not address?
21. If we continue this program, what changes would you recommend?

To be completed by Home Visitor:

21. How has this program affected the way this family supervises their children?
(Include both positive and adverse consequences)
22. How has this family benefited from participation in this project?
23. Share some of your observations about this family's participation on the project.

References

Birken, C., Parkin, T. & McArthur, C. (2006). Trends in rates of death from unintentional injury among Canadian children in urban areas: Influence of socioeconomic status. *CMAJ*, 175(8).

Canadian Council on Social development: http://www.ccsd.ca/factsheets/fs_lico05_bt.htm

Ehiri, J.E. (1995). The role of health visitors in the prevention of home injuries involving Children: Time for a rethink? *Health Bulletin*, 53(1), 20-25.

Faelker, T., Pickett, W. & Brison R. (2000). Socioeconomic differences in childhood injury: A Population based epidemiologic study in Ontario, Canada. *Injury Prevention*, 6, 203-208.

Gielen, A., McDonald, E., Wilson, M., Hwang, W., Serwint, J., Andrews, J. & Wang, M. (2002).

Effects of improved access to safety counseling, products and home visits on parents' safety practices: Results of a randomized control trial. *Pediatric Adolescent Medicine*, 156, 33-40.

Health Canada. (1997). For the Safety of Canadian Children and Youth, *Fall-related Injuries*, 8, Pg. 141.

Health Surveillance and Epidemiology Division (public Health agency of Canada). (1997-2000).

Injuries occurring in and around the home. *Canadian hospitals injury reporting and prevention program (CHIRPP) database*, (unpublished report).

King, W.J., LeBlanc, J.C., Barrowman, N.J., Klassen, T.P., Bernard-Bonnin, A., Robitaille Y., Tenenbein, M., Pless, I.B. (2005). Long term effects of a home visit to prevent childhood injury: Three year follow-up of a randomized trial. *Injury Prevention*, 11, 106-109.

Northern Ontario Child and Youth Health Report. (2003).

Pickett, W., Streight, S., Simpson, K & Brison, R. (2003). Injuries experienced by infant children: A population-based epidemiological analysis. *Pediatrics*, 111(4), 365-370.

Ramsay, L., Moreton, G., Gorman, D., Blake, E., Goh, D., Elton, R., & Beattie, T. (2003). Unintentional home injury in preschool-aged children: Looking for the key—an exploration of the inter-relationship and relative importance of potential risk factors. *Public Health*, 117(6), 404-411.

SMARTRISK. The Economic Burden of Injury in Ontario. Toronto. (2006).



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