Alberta Health Services

A Million Messages within AHS Project Literature Review Summary

The purpose of the literature review was to identify promising practices for providing anticipatory guidance and reducing injuries in children. The literature review will guide the development of the A Million Messages project within AHS. Specifically, it will be used to help develop the guidelines for injury prevention guidance at postpartum and well child visits. This document provides a summary of the themes that emerged from the literature. Three main themes are explored: 1) Anticipatory Guidance in General, 2) Health Professionals, and 3) Parents.

Anticipatory Guidance in General

Anticipatory guidance by a health professional is often seen as a way to educate families about the prevention of child injuries. Anticipatory guidance, also referred to as individual counselling provides parents with information from a trusted health professional about children's expected development and related issues, including injury prevention and safety, at regular intervals (Nelson, Wissow & Cheng, 2003). The goal of anticipatory guidance is that parents will use the information gained from a health professional to engage in behaviours to promote their children's early health, safety and development (Combs-Orme, Nixon, & Herrod 2011).

Parenting interventions, including anticipatory guidance, provided as part of a multifaceted intervention have the potential to improve multiple child health outcomes including reducing self-reported or medically attended injuries among children (Kendrick, Barlow, Hampshire, Polnay, & Stewart-Brown 2009). However, the impact of counselling based prevention efforts on actually injury rates is unclear (Kendrick, Barlow, Hampshire, Stewart-Brown & Polnay 2008; Kendrick, et al 2009). The following themes appeared in the literature related to anticipatory guidance in general.

- **Number of messages**
  - The number of messages per visit impacts parent recall. Parent recall decreased as the number of messages or topics increased (Nansel, Weaver, Jacobsen, Glasheen & Kreuter 2008).
  - Barkin, Scheindlin, Brown, Ip, Finch, & Wasserman (2005) found that between five and eight topics per visit was ideal. Recall of messages decreased when more than eight messages were presented to parents—recall decreased even when parents were requesting more information.
  - Injury prevention interventions focusing on a single issue may be more effective in reducing injuries than those addressing multiple topics (Kendrick et al, 2008). Similarly Chen, Kresnow, Simon & Dwllinger (2007) found similar results that topic specific counselling has had a positive impact on safety behaviours.
- **One on One and Face to Face**
  - Counselling sessions conducted one on one and face to face were more effective than other options (Mock, Arreola-Risa, Trevino-Perez, Almazan-Saavedra, Zozaya-Paz, Gonzalez-Solis et al., 2003).

- A review by Kendrick, Coupland, Mason-Jones, Mulvaney, Simpson, Smith et al (2010) suggested that the most effective interventions for increasing safety practices were delivered one on one, face to face and in a clinic or in the home.
- A review of community-based interventions also suggested that one on one guidance sessions were effective (Turner, Spinks, McClure, Nixon, 2009).

- **Support Parental Decision Making**
  - Messages that are specific and concrete suggestions, can effectively be delivered to families verbally (Young & Boltri 2005).
  - Anticipatory guidance that consists of authoritative, useful information, offered in a supportive manner that communicates respect for parental decision making maybe the most effective way to improve parenting practices (Sege, Hatmaker-Flanigan, De Vos, Levin-Goodman & Spivak, 2006). Anticipatory guidance should be free of judgment about the quality of parenting that a child experiences.
  - Parents indicated that messages that communicate support and acknowledge parents efforts would be more effective for parents to take action (Morrongiello, Zdzieborski, Sandomierski, & Lasenby-Lessard 2009).
- **Effective Communication**
  - Effective communication requires communication be exchanged in a manner that reflects the language and beliefs of all parties involved (Sege et al., 2006).
  - Interventions to increase home safety and reduce hazards in the home need to be culturally appropriate (Hendrickson, 2005) and there is a need to focus on increasing self-efficacy in parents.
- **Repeated Messages**
  - There is support for repeating messages at subsequent visits to improve uptake of the messages. A review by Digussepe & Roberts (2000) indicated that the most effective clinical interventions involved a combination of advice and reinforcement through repeated messages.
  - Duperrex, Roberts & Bunn (2009) indicated that there is evidence that changes in safety knowledge and observed behaviour decline with time. Because of this, it is suggested that messages should be repeated at regular intervals
- **Multifaceted Interventions (oral, written, subsidies, rewards)**
  - Interventions that involved a combination of advice, demonstrations, subsidized or free safety equipment and reinforcement through repeated messages appear to be most effective (DiGuiseppi & Roberts, 2000). Trials that have had the greatest effects on safety practices have used a combination of education with another intervention to modify predisposing, enabling, and reinforcing factors.
  - A review by Kendrick et al., (2008) found that parenting intervention, most commonly provided as part of a multifaceted intervention to improve a range of child health outcomes appear to be effective in reducing self-reported or medically attended injuries. Multifaceted interventions included parenting education, helping the family

solve problems, facilitating access to health and other community services, and providing support for formal and informal peer support.

- Coupling safety counselling with low-cost safety supplies and personalized information appears to be an effective way for promoting home safety and meeting the needs of low income families (Gielen, McDonald, Wilson, Hwang, Serwint, Andrews, & Wang 2002)
- Messages are better understood when verbal counselling is coupled with a written message, such as in a hand out (Young & Boltri 2005). General guidance was better understood when it was provided in a written format.
- There is evidence that suggests that posters and notices in medical offices are ineffective at reaching parents. A study by Pless, Hagel, Patel, Leduc &Magdalinos (2007) examined whether providing information through notices posted in paediatrician offices reaches parents and changes behaviour. The authors conclude that posters with safety notices whether in a health care office or on a website cannot be relied upon to reach parents.
- A review that specifically looked at increasing booster seat use indicated that a multiple intervention approach increased booster seat use the most (Ehiri, Ejere, Hazen, Emusu, King, & Osberg 2006). Specifically, education combined with free booster seats or incentives increased booster seat use in a community.

- **Tailored Messages**
  - Parents who received tailored injury prevention information coupled with verbal counselling demonstrated a greater decrease in injury risk to their child (Nansel, Weaver, Donlin, Jacobsen, Kreuter, Simons-Morton 2002).
  - Parents who received tailored information including personalized print outs with child-friendly graphics, injury risk scores, and tailored motivational messages regarding safety practices were more likely to adopt an injury prevention behaviour than those that received generic information (Nansel, Weaver, Jacobsen, Glasheen & Kreuter 2008).
  - Community based programs should be tailored to the unique characteristics of the community and multi-pronged approaches appear to work best when they include educational strategies, behaviours strategies and legislation and enforcement (Klassen, MacKay, Moher, Walker, & Jones, 2000).
  - Computer based program that provided tailored messages have been used in emergency departments and the study indicated that tailored communication can positively effect both parents knowledge of injury risk and self-reported safety behaviours (Gielen, McKenzie, McDonald, Shields , Wang, & Cheng, 2007).
  - Parents who received tailored information were more knowledgeable about certain aspects of injury prevention and more likely to know and understand how to use prevention items in their home (McDonald, Solomon, Shields, Swerint, Jacobsen, Weaver, et al., 2005).
- **Other things to Consider**

  Within the anticipatory guidance literature, there is a movement towards using technology in

the health care setting to help deliver injury prevention messages to parents. There is recognition that front line health care providers have competing demands and a limited amount of time in well child care. Newer technologies such as using a computer kiosk in a clinic, and websites have started to appear as viable options to enhance anticipatory guidance.

- **Use of Technology**

- McDonald, Solomon, Shields, Serwint, Jacobsen, & Weaver et al., (2005) conducted a study that used a computer kiosk in the waiting room to provide parents and physicians with a report on injury prevention. Parents received a printed report from a 40-item assessment that focused on tailored information about two selected (highest risk) injury topics. Physicians received a print out of all at risk areas and were encouraged to council on these s areas. The authors suggest that tailoring safety messages through a computer kiosk in the waiting room is feasible and effective in busy clinic settings.
- Gielen et al (2007) evaluated the use of a computer based tailored intervention in the emergency department waiting room on safety knowledge and parents behaviours. The results indicated that the use of a tailored computer based intervention is feasible, and that the majority of the intervention group used the computer-generated report. Increases in knowledge and positive self-reported behaviour change were reported.
- Sanghavi (2005) used a waiting room educational kiosk that consisted of interactive and self-guided tutorials to provide anticipatory guidance to well child visits in a study and the results indicated that there was an increase in knowledge in the intervention group over the group that received printed materials.
- Christakis, Zimmerman, Rivara & Ebel (2006) examined parental activation in a study by using the internet to provide anticipatory guidance information to parents. The parents topics of interest were communicated to health care providers. The study found that parents who were in the intervention group (received the internet access and notification) discussed more preventive topics with providers than those in the control. Christakis et al., (2006) suggest that web based communication can serve as a tool to help parents initiate discussion on prevention topics and helped practitioners deliver tailored content.
- Using a computer kiosk, parents were provided with a personalized print out with child friendly graphics, injury risk scores and motivational messages regarding safety practices in a study by Nansel et al (2008). The study found that parents receiving tailored injury prevention information were more likely to adopt an injury prevention behaviour than those that received generic information.
- Nansel et al (2002) used a computerized program to tailor injury prevention guidance to parents. Parents who received the tailored information demonstrated a greater decrease in injury risks to their child and were more likely to adopt home and car seat safety behaviours than those receiving generic information.

- **DVD's**

- Media based learning in the primary care setting is feasible and well accepted as a way to reach parents. Using DVD's to supplement well child clinics can be a low cost

intervention and those that receive a DVD demonstrated higher confidence in the topics covered on the DVD and had fewer additional office visits than those that did not receive a DVD (Paradis, Conn, Gewirtz, & Halterman, 2011).

- Note: BC Children's Hospital has developed a DVD titled Give your Child a Safe Start as part of their program.

Health Professionals

The role of health professionals in childhood injury prevention including attitudes and practices as well as perceived barriers and suggested facilitators are explored in the literature through the following themes.

- **Eager to support**
  - It is assumed that health professionals are positioned for both monitoring injuries and for prevention efforts. A systematic review by Woods (2006) indicated that not only are health professionals in an ideal position to support anticipatory guidance they are eager to support injury prevention messaging. Specifically, health professionals recognize the importance of injury prevention guidance and are keen to be involved in injury prevention work
  - Bazelmans, Moreau, Piette, Bantuelle, & Leveque (2004) found that most physicians believe that they have a role to play in preventing childhood injuries. The majority felt that their role was providing information about safety measures or risk advice in relation to child development.
- **Reported Barriers to Delivering Anticipatory Guidance**
  - Lack of knowledge and inadequate training were perceived barriers to providing effective anticipatory guidance practice (Woods, 2006). Lack of training about injury prevention is one reason why many health care professionals feel uncomfortable discussing injury prevention with their clients (Gittelman, Pomerantz, & Schubert, 2010).
  - Lack of time is also reported as a barrier to doing preventative work in well childcare (Coker, Casalino, Alexander, & Lantos 2006; Woods, 2006). One common reason lack of time is listed as a barrier is that there are many demands/priorities that need to be covered in a short amount of time during preventative care visits (Tanner, Stein, Olson, Frinter, & Radecki, 2009).
  - Lack of interesting materials to provide to parents is also described as a barrier by health professionals (Bazelmans et al., 2004)
  - One study noted that lack of knowledge may lead health professionals to rely on their own opinions to provide advice and therefore there is a need for evidence-based guidelines for parents and professionals (Tomlinson, & Sainsbury, 2004).
- **Suggested Facilitators to providing Anticipatory Guidance**
  - Providing prompts for health care providers to initiate guidance discussions, address concerns, and provide written supplementary handouts is suggested as a facilitator for health professionals to provide injury prevention information to parents (Barrios, Runyan, Downs & Bowling 2001; Young & Boltri 2005).

- Use of office system tools such as pre-visit checklists, practice feedback reports, and use of a prompting system are described as possible facilitators to providing anticipatory guidance at busy clinics (Rosenthal, Lannon, Stuart, Brown, Miller & Margolis, 2005).
- Anticipatory guidance topics could be provided by phone or email rather than at a preventive visit (Coker et al., 2006; Perry and Kenny 2007). Providing injury prevention information prior to a health visit may open the door for parents to ask questions about injury prevention.
- Use of a pre-visit family centred survey or screening tool to guide anticipatory guidance may be a facilitator to providing anticipatory guidance and has improved parent-reported measures of quality of care (Margolis, McLearn, Earls, Duncan, Rexroad, Reuland et al., 2008; Tanner et al., 2009).

- **Training Health Professionals in Injury Prevention**
  - Experiential learning for health professionals that included role playing, homework assignments and was reinforced with printed materials demonstrated positive results from both parents and physicians perspectives. Health professionals who received experiential training provided more injury prevention counselling than control group participants, and families were more satisfied with the safety information they received in the intervention group (Gielen, Wilson, McDonald, Serwint, Andrews, Hwang et al., 2001).
  - Pediatric residents who completed a 2-week course covering injury prevention learned and retained more injury prevention topics than controls (Gittelman et al 2010). It is suggested that a course for health care professionals may be a way to provide a stronger foundation for health care professionals to provide anticipatory guidance to families.
  - Woods, Collier, Kendrick, Watts, Dewey & Illingworth (2004) evaluated the effectiveness of injury prevention training that included epidemiology of baby walker related injuries, role playing for delivery of the intervention and materials to use with parents. The results indicated that the training group had significantly higher knowledge scores than controls and were more likely to give anticipatory guidance to clients they worked with. Although this study was limited to baby walker use, it potentially could apply to other injury prevention areas.

Parents

Parents or caregivers is the third area that appeared prominently in the literature. In particular, where parents get their information, parental knowledge, retention and recall are themes that emerged.

- **Where Parents get their Information**
  - Parents prefer to receive both verbal and written materials. Written materials may not always be well understood and messages are more clearly received when written materials are supplementary to verbal advice (Magar, Dabova-Missova, Gjerdingen 2006).

- There is often a lack of association between parent's injury interests and their child's injury risks. (McDonald, Solomon, Shields, Serwint, Wang, & Gielen 2006). Thus, soliciting parent's interests is important but parents may not be aware of or interested in the issues that are the highest risk to their child.
- Parents endorsed the impact of testimonials used to describe injuries as an effective injury prevention technique because they could relate to the emotions in a testimonial and would be upset if their child suffered an injury (Morrongiello, Zdzieborski, Sandomierski, & Lasenby-Lessard, 2009).
- Parents also indicated that using statistics and facts added credibility, and that highlighting unexpected injury cases made them realize they had more to learn about preventable risk factors (Morrongiello et al, 2009).
- Immigrant mothers were likely to have fewer sources of parenting information. Family and friends are one of the more frequently reported sources of parenting information for immigrant populations (Berkule-Silberman, Breyer, Huberman, Klass & Mendelsohn 2010). Where possible, it is suggested that service providers consider including families.
- In a study that examined injury prevention in the emergency department caregivers indicated that they were interested in receiving prevention information even if it prolonged their visit and that they'd prefer to receive injury prevention in the form of handouts while in the waiting room (Gittelman, Pomerantz, Fitzgerald, Williams 2008).

- **Parental Knowledge, Recall and Perceptions**
  - Parents were unaware of the scope of injury and the severity of injuries (Morrongiello, Howard, Rothman, & Sandomierski, 2009). However, parents who had a child that experienced a medically attended injury were aware of the potential injury vulnerability and severity.
  - Parental recall is dependent upon the number of topics discussed. A study by Barkin et al. (2005) indicated that although parents had a desire to discuss more topics per visit, 5-8 topics were ideal, and that parent recall decreased when 9 or more topics were included in a single visit.
  - Parents indicated that the use of graphic images was an effective way to get messages across even when they didn't like seeing the image because it had an emotional impact that convinced parents of the severity of an injury (Morrongiello et al., 2009). Parents also indicated that they endorsed testimonials and that using statistics and facts added credibility to injury messages and made them realize that they still had more to learn about risks to their child.
  - Mothers suggested that messages such as injuries are not accidents are important to avoid because they provoke feelings of blame and guilt (Morrongiello et al., 2009). Mothers further suggested that messages should support and acknowledge parents efforts.
  - Parent may attribute injuries to factors outside of their control as to not assimilate blame on themselves (Munro, van Niekerk, & Seedat 2006).
  - A study by Lee & Thompson (2005) demonstrated that parents often do not remember discussing water safety and supervision with their care providers.

- A study by Combs-Orme, Nixon, & Herrod (2011) examined what information parents recalled about anticipatory guidance, 75% of respondents remembered at least one item of anticipatory guidance from their last visit with a health professional.

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