

Input for Health Canada Consultation Regarding Proposal for Legislative Action on Infant Bath Seats and Bath Rings

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The Alberta Centre for Injury Control & Research is pleased to see that the Consumer Product Safety Bureau of Health Canada is considering legislative action to control advertising, sale and importation of infant bath seats and bath rings in Canada. Following are comments regarding the proposal. We have reviewed the evidence and recommend that Health Canada introduce legislation under the *Hazardous Products Act* that will establish a prohibition on the advertisement, sale, and importation of bath seats and rings that do not meet the requirements of a referenced technical standard. We do not support a total prohibition of the products at this time. Following is data about the issue in Alberta, justification for our recommendations and a summary of the literature we reviewed in reaching our conclusions.

The Alberta Situation

In Alberta from the year 1986 through 2003, 13 children under the age of 1 drowned (Alberta Vital Statistics death database). Nine of these drownings occurred in bathtubs. Clearly, bathtubs are the location infant drownings happen most frequently. In the years 1996 through 2006, 13 children under the age of 1 drowned in bath tubs. The highest number occurring in one year (2002) was 5. Three of the 13 cases involved bath seats and rings. Far more bathtub drownings of infants occur without the involvement of a seat or ring than occur with one.

When considering other types of injury death (excluding adverse hospital events) to this age group, drowning (10%) is the 4th ranked cause of death, preceded by suffocation/foreign body/choking (23%), motor vehicle collisions injuries (18%), and intentional injury (15%).

Recommendations

Existing Evidence Does Not Support Ban

Based on our review of the literature and consideration of the drowning incident data, the ACICR is not convinced that a ban will decrease the overall bath-related drowning rate of infants. Currently we have a situation where infants are drowning in bath tubs both with and without the use of bath seats and rings. These incidents include several types of cases. Firstly, we have cases where the child is left in the bath insufficiently attended without a bath seat or ring for a period of time long enough for the child to become submerged and drown. In these cases, had the caregiver been providing the appropriate supervision, being no more than arms reach from the infant, no drowning would have occurred.

Secondly, we have cases in which a drowning occurs when a bath seat or ring was in use. Some of these incidents are sparked because the bath product fails to work as intended, either tipping or allowing the infant to slip out through a leg opening, and the infant becomes submerged. Again, this is a supervision issue but could also be mitigated by improved product design. There are also cases where the bath seat or ring is used, the product works as intended, but the child comes out of the product and drowns because he or she is not being adequately supervised. In a very few cases the infant has become entrapped in the product and the caregiver was unable to extricate the infant before he or she drowned. Improvements to the design of the product are likely to be most helpful in this situation.

Information Lacking and Findings Conflicting

We are lacking information to in several areas. As has been pointed out in various studies, we really do not know the actual rate at which the bath seats and rings are used and are left to rely on an estimate (Thompson, 2003) and a survey based on a convenience sample (Lee and Thompson, 2007). This causes problems in determining with certainty whether the bath seats and rings are increasing the drowning rate or, as Thompson (2003) finds, are reducing the drowning rate of infants. We don't know the rates at which children are left unattended with bath seats and rings but we also do not know the rate at which children are left unattended without the products. It could be the case that despite being left unattended at greater rates, the children are safer as a result of being in the bath seat or ring. This argument does have face validity. While the products are not sold as safety items, by nature of their design they do help keep children upright in the water, whether attended by a caregiver or not. We also lack information about the circumstances of bathtub drownings that occur without the use of a product. A risk analysis is needed to clarify the causes of infant bath tub drownings and to determine whether the products are hazardous or protective. We recommend that a national coronial review be conducted to better understand the circumstances and mechanisms involved in infant bath tub drownings whether involving bath seats and rings or not..

Interpreting the data that is available, we do not find that bath seats and rings have caused an increase in infant bathtub drowning deaths. United States data used by Thompson (2003) and Canadian data used by Somers (2006) both find that more deaths occurred to infants in bath tubs not using bath seats and rings than in those using bath seats and rings. According to Thompson, for the five year period 1994 through 1998, 40 infant drowning deaths were associated with bath seats and 78 deaths were not associated with bath seats. This means that nearly twice as many drowning occurred without bathtub seats and rings in the United States. Somers found that 3 out of 13 bathtub drownings of infants involved bath seats and rings. This means that in Canada three times as many bath tub drownings occurred when no bath seat or ring was involved. Two studies, Thompson, 2003 and Lee and Thompson, 2007, estimate that around 46% of caregivers use bath seats or rings when bathing infants in the 6 to 10 month age range. These data can be interpreted as showing a potential protective effect in the use of bath tub seats and rings.

Harm Reduction Valid in this Situation

It is worthwhile to consider the paradigm of harm reduction. Harm reduction has emerged over the previous two decades as an approach that seeks to minimize the health hazards arising from a variety of behaviours by encouraging safer alternatives, including, but not limited to, abstinence (Duncan-Shell, 2001). The approach is most known as a drug abuse intervention but it has also been applied to injury prevention through such programs as designated drivers. We have evidence in the form of the unattended drownings that caregivers, for one reason or another, leave infants unattended in the bath. The ultimate injury prevention strategy would be to have all caregivers provide adequate supervision at all times. This would be tantamount to abstinence in the case of drug or alcohol use. While adequate supervision is something at which to aim, if bath seats and rings can offer protection in the case of a momentary lapse of attention on the part of the caregiver, the use of these products can be justified by their harm reducing value.

Better Standards Rather Than Ban

Calls for the banning of bath seats and rings are well-intentioned. Clearly the findings that the products give the caregivers a false sense of security when the child is in the bath and may lead to increased risky behaviour of leaving an infant insufficiently attended is worrisome. However, as injury prevention advocates we must clearly examine our motivations: are we seeking a ban because the removal of the products from the marketplace will reduce drowning deaths or are we seeking a ban as it may be a means of teaching caregivers to be more vigilant? The evidence does not support that removing the products will reduce bathtub drownings. Furthermore, it would not be ethical to ban the use of bath seats and rings and potentially cause drownings that otherwise would not happen in an attempt to force caregivers to provide a level of supervision which is likely unattainable by all caregivers at all times. As such, we are not supportive of the legislative option to establish a total prohibition on the advertisement, sale, and importation of all infant bath seats and rings at this time. Because some of the drowning incidents could be prevented by improving the design of bath seats and rings to reduce tipping, slipping out and entrapment of infants, we are supportive of setting a referenced technical standard for the products.

Legislative Solution Alone Insufficient to Change Bathing Behaviours

This is a case in which either proposed legislative solution is likely to fall short of attaining the desired results. Regulating the standard to which bath seats and rings are made could result in products on the market that would be less likely to put infants at risk by malfunctioning or by impeding the rescue of infants when submerged. This would reduce some of the drowning incidents. But as pointed out by others, it may also lead to greater rates of infants being left insufficiently supervised in the bathtub. However, if the product itself is somewhat protective, this protection could outweigh the increased risks. If caregivers lack the knowledge to provide constant arms-length supervision, or if they are unwilling or unable to do so, the bath seat or ring, when designed to higher standard, could be a lifesaver.

Changing the behaviour of caregivers is clearly necessary to prevent bathtub drowning of infants. Parents and care givers continue to leave children unattended in the bath tub for lengths of time which allow for drowning to occur. Most of the drownings occurred because of insufficient adult supervision in the bath. Of utmost importance is conveying the message to caregivers that children must be within arms length at all times when in the bath whether a bath seat or ring is being used or not. Caregivers must be made to understand the risks facing an infant in the bathtub and they must be given the information and skills needed to protect the child while bathing. Maintaining constant physical contact is the safest way to bathe an infant. Since engineering is not a viable solution to ensure constant physical contact, we must rely on education. A multi-faceted approach to communicating this message is recommended. While warnings on the seats have not proven it be effective as a preventive measure on their own, they may be effective if integrated as an element of a more comprehensive awareness campaign. However, it is equally important to get this message to caregivers who do not use bath seats and rings. Evidence-based creation and evaluation of educational campaigns, further behaviour studies surrounding warning information for products, and the incorporation of key influencers (trusted health professionals or others) into the educational mix are needed. These efforts along with improved engineering of the products and the expansion of first aid knowledge to mitigate the effects of near-drownings when they occur are all needed if the drowning of infants in bath tubs is to be reduced.

Summary of Recommendations

- Introduce legislation under the *Hazardous Products Act* to establish a prohibition on the advertisement, sale and importation of bath seats and bath rings that do not meet the requirements of a referenced technical standard.
- Do not introduce legislation establishing a total prohibition on the advertisement, sale, and importation of all infant bath seats and bath rings.
- Conduct a national coronial review to better understand the circumstances and mechanisms involved in infant bath tub drownings whether involving bath seats and rings or not.
- Support caregivers in providing adequate supervision of infants in baths through a multi-faceted approach including:
 - Information about the dangers of bathing infants
 - Education regarding skills to properly supervise infants in baths
 - Engineering improvements to bath seats and rings to meet a recognized technical requirement
 - Research-based warning labels and instructions on bath products
 - Incorporation of key influencers such as health professionals into educational mix
 - First aid knowledge to respond to near-drowning incidents.

Literature Review

The role of bathtub seats and rings in infant drowning deaths

(Rauchschwalbe, Brenner, & Smith, 1997)

This study was one of the earlier studies to raise a number of points surrounding the issue of the role of bathtub seats in infant drowning deaths. For the years reviewed in this study (1983-1995), bath seats/rings were associated with an increase in the number of reported infant drowning deaths.

The major issue, which no design modification can address, is that children are left unattended in these products. In over 90% of the drowning incidents there was a reported lapse in adult supervision, with a mean reported lapse of 6 minutes and a median lapse of 4 minutes.

Rauchschwalbe states that the use of these products may increase the risk of drowning among infants by increasing the likelihood that an infant will be left alone in the tub. Based on comments made by caregivers there is little doubt that these products give a sense of security that an infant can be left in the tub alone for short periods of time. Making the products more robust may only increase that perception that the child will be safe if left alone for a few moments. Users reported that warning labels such as those advising not to leave children unattended in the bath have become so common on childhood products that they are ignored.

The author acknowledges that in the absence of exposure data it is difficult to assess the overall risk inherent in their use; therefore it is not certain that use of these products increases the rate of drowning.

Pediatric drowning, a 20-year review of autopsied cases: III. Bathtub drownings

(Somers, Chiasson, & Smith, 2006)

This study, conducted at the Hospital for Sick Children in Toronto, Ontario, was a retrospective review of all autopsies held from 1984 through 2004 and found that of the 81 cases of drowning in children and infants, 18 occurred in bathtubs. Thirteen were children aged 0-12 months and 5 were children aged 1 to 5 years. Three infants drowned while in infant-style bath seats. There was no significant trend in bathtub drowning deaths over the 20-year study period. Lack of adequate adult supervision was reported in 89% of these drownings. The authors believe that a lack of awareness of the dangers of leaving infants and small children unattended in a bathtub may play a role in the high rates reported and that this suggests a focus for educational campaigns.

Somers et al quote a 1996 study by Cass et al. stating bathtub drownings have not decreased over time while other types of drowning have. They also quote Brenner et al. (2001) as saying that there has been an increase in the rate of drowning in infants (This author was unable to find this in the cited article and presume the citation should have been listed as Brenner, 1994). Authors quote a 2003 study by the Canadian Red Cross stating that in infants aged under 1 year, bathtub drownings account for 69% of all drowning deaths.

Infant bath seats, drowning and near-drowning (Byard & Donald, 2004)

Byard and Donald conducted a case study of three incidents that occurred in Australia, one infant drowning and two near-misses. In all three cases care-givers were using bath seats. They find that when using bath seats parents and caregivers may feel more confident at leaving and infant unattended in a bath. Although warning labels advising against leaving infants unattended may be attached to the infant bath seats this advice is not always heeded. Anecdotally they find that parents have tended to use deeper water in baths when infant seats were used. Also, parents hold the misconception that they will be alerted by splashing or crying from a drowning infant. This belief is incorrect, as drowning infants and young children may occur rapidly and silently with minimal struggle.

The role of bath seats in unintentional infant bathtub drowning deaths (Thompson, 2003)

Thompson's research findings are contrary to other research regarding the risks associated with the use of infant bath seats. The trend she identifies differs from those reported by Rauchschalbe et al. and Somers et al. This is likely due to Thompson's use of more specific data limited to the age range of 6 to 10 months, the range most likely to use the bath seats and rings. She finds that an increase of bath seats in the market and increased use of the seats as identified by survey data were associated with decreasing unintentional infant bathtub drowning risks. This study, done using US Consumer Product Safety Commission (CPSC) data for the five year period 1994 through 1998, revealed 40 infant drowning deaths associated with bath seats and 78 deaths not associated with bath seats.

From analyzing the factors associated with these deaths, additional efforts are needed to ensure that caregivers do not leave infants unattended in the bathtub. Rigorous risk analyses should be conducted when considering regulating these products to ensure that the regulation does not inadvertently increase injury risks.

Parental survey of beliefs and practices about bathing and water safety and their children: Guidance for drowning prevention. (Lee & Thompson, 2007)

In this survey Lee and Thompson found that almost half (46%) of care-givers used bath seats/rings when bathing infants. This closely matches the estimate from a previous study (Thompson, 2003).

Of concern is that fact that this study confirms what has been found in several others – inadequate supervision is an important risk factor for pediatric drowning injury. While most caregivers indicate awareness of the need for constant supervision of infants and young children while bathing, some reported unsafe

behaviours including leaving the infant completely unsupervised, with or without a bath seat.

Lee and Thompson make three recommendations for increasing the safety of bathing infants and children:

- Clinicians must advise caregivers of the need for constant supervision and the proper use of bathing aids
- Clinicians should encourage caregivers to learn CPR and develop mechanisms to offer free CPR instruction to caregivers
- A multi-focal approach by clinicians as well as makers of bathing products and the media should continue to emphasize the importance of constant adult supervision when bathing infants and young children.

Drowning of babies in bath seats: do they provide false reassurance (Sibert et al., 2005)

Sibert et al. conclude that the use of a bath seat gives a false sense of security to the care giver regarding the safety of the baby in the bath even though the bath seats are not sold by any manufacturer as a preventive method for drowning. They find that babies that can sit but cannot right themselves are at risk of drowning if left alone in a bath seat.

The authors point out that it is unclear if bath seats actually represent an increased risk of drowning. Lack of firm figures for bath seat usage makes it very difficult to draw a firm conclusion. More research is required to clarify this issue.

Regarding approaches taken to prevent drownings related to bath seat use, Sibert et al. find differences in those used but the Consumer Product Safety Commission (CPSC) in the United States and the European Union. The CPSC voted in October 2003 not to ban infant bath seats but to propose a federal mandatory standard to address the problems of the seats tipping over, slipping through leg opening and becoming trapped and children climbing out of the seat. The standard would also mandate a specific safety warning on the product. This would replace a voluntary standard that has been in place since 1994 and revised several times since. Taking a different approach the committee charged with the safety of child care articles in Europe have decided that it cannot prepare a standard that will provide adequate levels of safety and is considering advising a ban on the bath seats.

References

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