Program Example – Suffocation, including Choking and Strangulation

Note: We have created program examples for a number of injury issues that affect children 0-6. These examples are based on best practice and share activities that groups have done or could undertake. These follow the steps of Lesson 6 in the on-line course, Introduction to Child Injury Prevention. They are designed for people who want to develop programs that can be evaluated, or for people who need samples of Action Plans and Evaluation Plans for funding proposals. Other program examples, without this level of detail, but dealing with the same stories (for the most part), are available on the Parachute site, associated with Lesson 5 of the course.

Should you decide to work on this issue in your community, share your experience through our new child injury prevention listserv. You can subscribe by sending an email to: cipg-subscribe@lists.parachutecanada.org.

Introduction:
Why is this issue important? Unintentional suffocation, which also includes strangulation and choking on food and other objects, is the leading cause of injury death in Canada for children 0-4. Twenty-six (26) children aged 0-4 died from suffocation/strangulation/choking in 2009, whereas less than 5 children aged 5-9 died. One hundred and fifty-six (156) children aged 0-4 and twenty-seven (27) aged 5-9 were admitted to hospital as a result of suffocation/strangulation/choking (2010/11). As stated in Lesson 1, Introduction to Child Injury Prevention, these admissions are just the tip of the iceberg as many of these children are only seen in the emergency room or at a clinic, and are not admitted to hospital.

Choking, suffocation and strangulation injuries are preventable.

Story:
At a recent playgroup, a staff member overheard a caregiver¹ telling this story. A friend was making dinner and left her 4 year old and 11 month old in the living room next to the kitchen, watching TV. At some point she realized she couldn’t hear the kids as normally they are noisy. She went to check. The 4 year old was playing quietly. The 11 month old looked to be asleep. She looked more closely and realized his lips were blue. Because she was trained in first aid and CPR, she immediately tried mouth-to-mouth resuscitation and realized no air was getting in. She then flipped the baby on his stomach, over her knees, head low, and thumped his on the back. A piece of Lego came flying out and the baby began to cry. She called 911 and was advised to take him to the hospital to be checked out.

The caregivers listening were horrified and acknowledged that they weren’t sure they would have done the right things in the same situation. Later in the morning, the staff member acknowledge to the group that she had heard the story and asked if they would like to learn more about how to prevent choking and other situations that could cause their child to stop breathing. They eagerly agreed. The staff also decided to review their policies to ensure that they were addressing any potential choking hazards. In their research, they identified that they still allowed latex balloons into the Centre. They decided to change the policy to only have Mylar (looks like foil) balloons at the Centre.

¹ We are using the term caregiver to include parents, grandparents, foster parents and anyone else responsible for the care of a child.
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Problem Statement: To begin a plan to address this injury, you need a short statement of the problem. For this story, it could be: Babies in our community are at risk for unintentional suffocation.

Next, you need a goal:

Goal: to reduce the number of suffocation-related\(^2\) incidents to children in our region.

Next, you need to start to identify the key people who can help address this situation in your community.

Potential partners: injury prevention organization, Public Health, caregivers and other community members.

Even though this incident happened to someone in the community, often caregivers do not believe it will happen to them. This group, however, did acknowledge their fears and their desire to learn what they can do to prevent suffocation-related incidents. They, and the other caregivers you work with will need to "buy into" the idea that:
- Their infants and young children are at risk for choking and other types of suffocation.
- They can do something to minimize that risk.

When an incident does happen, caregivers either believe it is their fault, or there was nothing that could have been done to prevent the injury. In fact we know that there are lots of things that influence whether that injury event happens, and some of those things are within a caregiver’s control and some are not. A man named Haddon, from the United States, developed a process that illustrates all the factors that influence whether an injury will happen and how severe the impact of that injury could be. The approach captures all these ideas in the Haddon’s Matrix. It is helpful for program planners to complete a Haddon’s Matrix to make sure they have thought of all the possible ways an injury could have been prevented, before they choose the approach they are going to take in their own setting.

The following table shows the risk and protective factors before, during a suffocation-related incident – note the table below is a more complete example than what was described in Lesson 5 in the Introduction to Child Injury Prevention course, but follows the planning model in Lesson 6, Program Planning and Evaluation. It shows all the potential areas that you could address.

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\(^2\) Includes choking and strangulation

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Haddon’s Matrix – Suffocation-related Incidents

<table>
<thead>
<tr>
<th>Person (Host)</th>
<th>Agent &amp; Carrier</th>
<th>Environment: Physical</th>
<th>Environment: Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 month old baby</td>
<td>Absence of oxygen</td>
<td>Is the baby exposed to small objects, blind cords, bumper pads, pillows and blankets in his crib? Is the baby in reach of solid food that could choke him? Do his clothes have drawstrings?</td>
<td>What is the caregiver’s knowledge of the prevention of suffocation-related incidents? What is the caregiver’s knowledge about guidelines for toys for various age groups? Home safety programs/resources Product standards Child care facility policies</td>
</tr>
<tr>
<td>Pre-Event</td>
<td></td>
<td>Is the baby at risk of being exposed to decreased/lack of oxygen by ingesting an object, by something covering the mouth/nose, or strangulation at the neck?</td>
<td></td>
</tr>
<tr>
<td>Will the baby ingest a small object/access the hazard?</td>
<td>Age and health of baby Development (explores environment by mouthing objects) Dexterity of the baby (to pick up small objects) Eyesight of the baby (to see small objects) Mobility of the baby (to reach small objects, access blind cords)</td>
<td>Is the baby exposed to small objects, blind cords, bumper pads, pillows and blankets in his crib? Is the baby in reach of solid food that could choke him? Do his clothes have drawstrings?</td>
<td></td>
</tr>
<tr>
<td>Event</td>
<td>Age and health of baby</td>
<td>How long was the baby without oxygen? Way his airway partially or totally blocked? (i.e. was any air getting through?)</td>
<td>Size of the object blocking his airway Nature of the object strangling the baby Does the caregiver know infant CPR and how to deal with choking? Accessible first aid/CPR programs</td>
</tr>
<tr>
<td>Will injury occur as a result of absence of oxygen?</td>
<td>Length of time without oxygen – brain damage after 4 minutes (approximately), death after 15 minutes (approximately)</td>
<td>Proximity of medical care Availability of First Aid/CPR EMS response time Access to telephone Access to acute care Medical staff knowledge of how to treat suffocations</td>
<td>EMS and trauma systems Access to rehabilitation programs If the baby lives, what is the caregiver’s ability to follow through on treatment instructions – short and long term?</td>
</tr>
<tr>
<td>Post-Event</td>
<td>Age and health of baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What will the outcome be?</td>
<td>Length of time without oxygen – brain damage after 4 minutes (approximately), death after 15 minutes (approximately)</td>
<td>Proximity of medical care Availability of First Aid/CPR EMS response time Access to telephone Access to acute care Medical staff knowledge of how to treat suffocations</td>
<td>EMS and trauma systems Access to rehabilitation programs If the baby lives, what is the caregiver’s ability to follow through on treatment instructions – short and long term?</td>
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</table>

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Once you have looked at all the risk and protective factors that could be involved in the injury event, choose which factors you have the capacity to influence and decide what changes you want to make with your program. Identify what best or promising practices are known to work with this injury situation and incorporate those into your approach.

**Risk/Protective Factors** that you have the potential to change: knowledge and behavior of caregivers on the prevention of suffocation-related incidents.

**Best practices:** The Child Safety Good Practice Guide has identified that the following measures are effective in reducing suffocation-related incidents in young children:

- Product modification (e.g., the change in design of cribs in 1986 to eliminate a suffocation hazard; the elimination of drawstrings on children’s clothing);
- The banning of products known to cause choking/strangulation risks (e.g., the move to ban/regulate latex balloons);
- Legislation that requires product-warning labels to include an explanation of the specific hazard is more effective than non-specific labels.


**Objectives:**
These changes are then written as objectives, following this formula:

<table>
<thead>
<tr>
<th>Increase or decrease ...</th>
<th>By what amount</th>
<th>In what timeframe</th>
<th>With whom</th>
<th>What</th>
</tr>
</thead>
</table>

**Objectives:**
1) To increase by 50% over the next year, the knowledge of caregivers about how to prevent suffocation-related incidents to their infants and young children.
2) To decrease within the next year, the number of suffocation-related hazards at our Centre.

Once you have decided your objectives, then you need, with your committee, to decide what activities you will undertake in order for your changes to happen. You also need to decide how you will know if the change(s) happened (success indicators).

**Here is a sample story of what a group could decide to do:**

The staff reviewed their own suffocation-related policies and decided to add a balloon policy – i.e., that only Mylar balloons could be used/brought into the Centre, as these balloons are not a choking hazard. Their food policies did address the size, shape and texture of food for specific age...
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groups but the staff decided to use snack time as a teaching opportunity around food choking hazards. They also had a toy policy that addressed the size of toys for various age groups, so again they used playtime as a teaching opportunity to demonstrate how to keep hazardous toys away from babies and small children. They had drapes, rather than blinds on windows. They decided to create some interactive displays that addressed a number of choking issues. One showed the size and shapes of foods that are hazardous to small children. They created a game to have parents guess what toys/parts of toys were choking hazards and then taught them to assess toys with a toilet paper tube (if it fits through, it is a hazard to children under 3). They also created a mini-blind display that showed how to tie up cords. Finally, they downloaded the new suffocation-related images and messages from Parachute and used them as discussion starters in groups enabling caregivers to problem solve on how they could address these issues in their own homes. Since their caregivers used Facebook and twitter, they integrated these messages into postings and tweets.

The 3 E’s that this group decided to address were:

Education – assist caregivers in gaining the knowledge and enabling the behaviour change necessary to reduce the risk of suffocation-related incidents.

Your objectives and activities can then be laid out in a project logic model format, or whatever template you currently use for program planning.

Activities:
Suffocation-related Prevention Project Logic Model:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Objectives</th>
<th>Activities</th>
<th>Outputs</th>
<th>Short Term Outcome</th>
<th>Intermediate Outcome</th>
<th>Long Term Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>To reduce the number of suffocation-related incidents to children in our region.</td>
<td>To increase by 50% over the next year, the knowledge of caregivers about how to prevent suffocation-related incidents to their infants and young children.</td>
<td>Create committee Educate caregivers using resources from Parachute and teachable moments Create interactive displays and activities to address suffocation-related</td>
<td>Committee is meeting and providing direction Number of caregivers educated</td>
<td>Increase in knowledge about how to prevent suffocation-related incidents</td>
<td>Caregivers report they have made changes in their homes to decrease the risk of these injuries</td>
<td>Reduction in the number of suffocation-related incidents in children.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>hazards</th>
<th>To decrease within the next year, the number of suffocation-related hazards at our Centre.</th>
<th>Review of current policies</th>
<th>Report on current policies</th>
<th>Caregivers and staff knowledgeable about current and new policies</th>
<th>No latex balloons are used at the Centre All policies are adhered to</th>
<th>Reduction in the number of suffocation-related incidents in children.</th>
</tr>
</thead>
</table>

Here are their activities and success indicators, written in a format that could be used in a funding proposal. In this approach, the group has indicated their success indicators – the things they will measure to show their results.

**Suffocation-Related Prevention Action Plan:**

<table>
<thead>
<tr>
<th>Actions/ Activities</th>
<th>Target Group</th>
<th>Responsibilities and Timeline</th>
<th>Resources</th>
<th>Success Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify the key people to be on the committee. Create committee to oversee project (all objectives)</td>
<td>Internal and external partners</td>
<td>Manager week 1</td>
<td>Time</td>
<td>A committee is in place including Centre staff, Public Health, caregivers and members of the community, as identified.</td>
</tr>
<tr>
<td>Prevention images and messages downloaded and delivered in parenting program</td>
<td>Caregivers</td>
<td>Staff Month 1-6</td>
<td>Time, print copies of materials, create displays and messages</td>
<td>Number of caregivers attending, increase in knowledge measured pre and post attending</td>
</tr>
<tr>
<td>Create displays and other methods of communication the prevention messages</td>
<td>Caregivers</td>
<td>Staff Month 1-6</td>
<td>Time, print copies of materials, create displays and messages</td>
<td>Self-reports or reports by others regarding changes in the home environment to reduce risks.</td>
</tr>
<tr>
<td>Review current policies and create balloon policy</td>
<td>Staff, Board and caregivers</td>
<td>Staff Month1-6</td>
<td>Time</td>
<td>Policies in place and followed.</td>
</tr>
</tbody>
</table>
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Evaluation:
Finally, you need to think about how you are evaluating what you are doing. This is very important because too often you know something is working (or not working) but haven’t built in a way to measure the success (or pinpoint the problem). If we don’t have concrete evaluations of programs, it is harder to share what worked with others who work with caregivers on these issues. It is also harder to identify what did not work, and then change your activities to address the problem. There are different types of evaluations and the list below shows how you use each of them in your planning process.

Evaluation Plan

Needs Assessment: *establishing a need*
Q: Is there a need for suffocation-related prevention? Yes, this is the leading cause of injury death for children 0-4 in Canada.

Developmental evaluation: *identifying best practices*
Q: Are there programs already in existence for this target audience that increase the knowledge of caregivers on the reduction of suffocation-related injuries? There are no specific programs, but there are a number of credible resources that address this issue.

Formative evaluation: *testing program plans, messages, materials, modifications, strengths or weaknesses before they are put into effect.*
Q: Do the caregivers understand how to prevent suffocation-related deaths and injuries? There are resources/messages available through Parachute and other organizations (e.g. Health Canada).

Process evaluation: *tests whether the program’s procedures for reaching the target are working as planned.*
Q: Are the caregivers still attending the program? – tracking attendance. Caregivers are participating in the discussion/problems solving around how to prevent suffocation-related incidents.

Impact evaluation: *assess the program’s progress towards its goal i.e. measuring changes in target audience’s knowledge, attitudes and beliefs that may lead to injury-prevention behaviour.*
Q: Do the caregivers retain the knowledge? The pre/post tests will show any change.

Outcome evaluation: *measures changes in preventive behaviours and injury-related morbidity and death.*
Q: Will this program ultimately reduce suffocation-related deaths in this population? That would be the intent but the program would have to be on a very large scale in order to be confident that any reduction in suffocation-related deaths can be attributed to your program.

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Q: Do the parents self-report changes in their behaviour? Self-reports alone are unreliable as caregivers may just tell you what they think you want to hear (and what they would like to be true). Is there any way to verify these changes? If home visitors or public health nurses visit the home, they may be able to observe these changes.

Collecting the information:

Track the numbers of caregivers attending sessions. Conduct a simple pre-test to find out caregivers’ current knowledge and behaviour, conduct a post after the program is finished. Sample pre and post questionnaires are downloadable at www.parachutecanada.org/child-injury-prevention. Staff delivering the program will do the tracking and conduct the pre/post surveys. If in-home visits for follow-up are possible, have these visitors look to see if there is a safe place for the infant to sleep in the caregiver’s bedroom.

Share the results of your evaluation with others working with caregivers. Even if you find that your program did not make any change, this is good information to know and you can work with your committee to figure out why the program did not work, and make changes to future programs

### Suffocation-related Prevention Evaluation Plan

<table>
<thead>
<tr>
<th>Objective</th>
<th>Activities</th>
<th>Outputs</th>
<th>Measurement Tool</th>
<th>Outcomes</th>
<th>Success Indicators/Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>To increase by 50% over the next year, the knowledge of caregivers about how to prevent suffocation-related deaths and injuries to their infants and young children.</td>
<td>Identify the people to be on the committee and Create committee to oversee project Prevention images and messages downloaded and delivered in programs Displays and interactive materials created and used</td>
<td>Committee formed and operational</td>
<td>Notes from meetings</td>
<td>Committee has undertaken all activities of the project</td>
<td>Program has been delivered to caregivers</td>
</tr>
<tr>
<td>To decrease within</td>
<td>Review of current Policies</td>
<td>New or changed</td>
<td>Caregivers more knowledgeable</td>
<td>50% increase in the knowledge of caregivers on how to prevent suffocation-related deaths and injuries.</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>the next year, the number of suffocation-related hazards at our Centre.</th>
<th>policies</th>
<th>created/adapted and implemented</th>
<th>policy</th>
<th>suffocation-related hazards</th>
<th>not longer used at the Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of new policy regarding balloons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other resources:

- Information on a range of injury topics can be found at [www.healthycanadians.gc.ca/kids-enfants/index-eng.php](http://www.healthycanadians.gc.ca/kids-enfants/index-eng.php)
- A Million Messages: [http://www.albertahealthservices.ca/7607.asp](http://www.albertahealthservices.ca/7607.asp) Your province/territory may have adapted these messages for your region.
- Preventable.ca is always increasing its range of topics. Check it out at [www.preventable.ca](http://www.preventable.ca).