

# Can Kids Stop the Bleed?

## A Community Based Educational Approach to Teach Children Hemorrhage Control

### Bleeding Control for Kids

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“The only thing more tragic than death from bleeding... is a death that could have been prevented.”

American College of Surgeons, Committee on Trauma

#### INTRODUCTION

Multiple casualties occurred during active shooter events like Columbine High School in Columbine, CO, and Sandy Hook Elementary in Newtown, CT. Despite having trained medical personnel on scene and in local hospitals, multiple deaths still occurred due to uncontrolled bleeding. Bleeding Control for the Injured - Basic (BCON) provides bleeding control education to the community in an effort to decrease deaths related to hemorrhage. Schools are a primary focus, where staff members are taught the basics of bleeding control. Students are rarely taught, yet they are a large, vulnerable population that can potentially intervene to stop hemorrhage. Sutter Roseville Medical Center (SRMC) is working with community partners to tailor BCON in a way that meets the developmental needs of students in kindergarten to 6<sup>th</sup> grade and then bring it to the classroom. Bleeding Control for Kids focuses on teaching elementary school students how to recognize hemorrhage, identify causes of injury, stay safe while activating 911, and includes practice for applying direct pressure.

#### OBJECTIVES

Students in kindergarten through 6<sup>th</sup> grade can learn the basics of hemorrhage control. The purpose of this presentation is to describe the steps taken in the development and sustainability of an age appropriate bleeding control curriculum for school age children. Objectives include establishing a group of instructors, obtaining funding, accessing classrooms, creating a standardized curriculum, and incorporating feedback and lessons learned into the course.

#### ESTABLISHING AN INSTRUCTOR POOL

A core group of instructors was identified to ensure the integrity of the curriculum is maintained while the Bleeding Control for Kids program continues to develop. Instructors were recruited from hospital staff members, hospital administrators, EMS agencies, fire departments, and healthcare training programs. Lead instructors are registered BCON instructors with the American College of Surgeons Committee on Trauma.

#### OBTAINING FUNDING

Funding for training supplies and bleeding control kits was obtained through the county Public Health Department and the hospital community benefits department. Grants, local fire department unions, community service organizations, and community based businesses were also considered as possible funding sources.

#### ESTABLISHING CONNECTIONS IN SCHOOLS

Establishing rapport with a school was difficult, so using different methods and connections was imperative to gain access to students. Approaching school teachers directly provided the initial opportunity in the classroom. This was followed by a meeting with the school principal that focused on the background of the BCON course and potential delayed EMS response times due to staging in an active event. A course curriculum with school age appropriate scripting was provided as well. Bleeding Control for Kids has also been taught in after school programs which facilitated additional connections with school administrators. A BCON course was held at the county level for school nurses which provided opportunities to bring Bleeding Control for Kids into additional classrooms.



#### COURSE CURRICULUM

A standardized Bleeding Control for Kids outline was provided to each instructor to ensure a consistent, age appropriate, approach to teaching the course curriculum.

Bleeding Control for Kids	
<ul style="list-style-type: none"><li>2-3 bleeding control kits per classroom (20-30 students)</li><li>3-4 instructors per classroom (20-30 students)</li></ul> <p><b>Introduction (5 minutes)</b></p> <ul style="list-style-type: none"><li>Introduce self, instructors, and job occupations.</li><li>Use KWL chart to<ul style="list-style-type: none"><li>Ask students what they <b>Know</b> about bleeding.</li><li>Ask students what they <b>Want</b> to learn about bleeding.</li></ul></li><li>Ask students to raise their hand if they are "grossed out" by blood.<ul style="list-style-type: none"><li>The instructor raises their hand as well.</li><li>Let students know that it is okay to be "grossed out" and alright if a student chooses not to participate in the activity.</li></ul></li><li>Inform students that you are there to teach them to how to stop lots of bleeding.<ul style="list-style-type: none"><li>Discuss bleeding left uncontrolled can cause someone to die.<ul style="list-style-type: none"><li>Ask students what will happen if someone is bleeding and it is not stopped.</li></ul></li><li>Acknowledge that this is frightening for students, but by practicing bleeding control, it will make it less frightening if it were to actually occur.<ul style="list-style-type: none"><li>Compare to a fire drill--do you practice for a fire drill? Has there been a fire at this school? Why do we practice? If there is a fire, it will be scary, but now we know what to do.</li></ul></li><li>Emphasize that the students are learning skills to save someone's life, which is "really cool!"</li></ul></li></ul> <p><b>Discuss Steps of Bleeding Control (10 minutes)</b></p> <ul style="list-style-type: none"><li>Discuss what a lot of bleeding looks like -for younger students refer to it as "big blood".<ul style="list-style-type: none"><li>Ask students what they think "a lot" bleeding or "big blood" looks like.</li></ul></li><li>Instructor identifies 3 clues that can indicate uncontrolled bleeding.<ol style="list-style-type: none"><li>Soaking: If there is a cut on a leg and the clothes are wet to the touch.</li><li>Puddle: If there is a cut on a leg and a puddle of blood on the floor.<ol style="list-style-type: none"><li>This can be compared to spilling a glass of water which forms a puddle on the ground.</li></ol></li><li>Sprinkler: With younger students, before the "sprinkler" is introduced, let them know that the next example is "kind of silly".<ul style="list-style-type: none"><li>Give the students the example of falling on the ground and scraping their knee. Then ask if this is the type of bleeding that is being discussed today.</li></ul></li></ol></li><li>Discuss what can cause an injury that can lead to a lot of bleeding.<ul style="list-style-type: none"><li>Let kids give examples.<ul style="list-style-type: none"><li>If guns are used as an example, discuss gun safety, treating every gun like it is loaded, and notting an adult.</li><li>Examples that can be used<ul style="list-style-type: none"><li>Working in the kitchen and cutting themselves with a knife</li><li>Working with power tools in the garage</li><li>Breaking a window while playing in the backyard</li></ul></li></ul></li></ul></li></ul>	<ul style="list-style-type: none"><li>Next, talk about scene safety.<ul style="list-style-type: none"><li>Make sure that whatever caused the injury cannot hurt the student.</li><li>Discuss if a person is hurt, and the student tries to help but also gets hurt, then the student cannot help the injured person.</li></ul></li><li>Call 911.<ul style="list-style-type: none"><li>Do you know your address?<ul style="list-style-type: none"><li>Most 4-2nd do not know.</li><li>Their "homework" with their parents is to learn their address.</li></ul></li></ul></li><li>Discuss how to apply direct pressure<ul style="list-style-type: none"><li>Scoop out the wound<ul style="list-style-type: none"><li>This is done once and quickly</li><li>Goal is to get to the site of bleeding</li><li>Compare to getting an egg shell out of eggs</li></ul></li><li>Stuff the wound<ul style="list-style-type: none"><li>What can be used to stuff a wound<ul style="list-style-type: none"><li>Shawl</li><li>Shirt</li><li>Rag</li><li>Stinky dirty natty sack</li><li>Nothing thick</li></ul></li></ul></li><li>Push on the wound<ul style="list-style-type: none"><li>Hold direct pressure using all of your body weight until help arrives</li><li>Small children will need to put their knee on the wound</li></ul></li></ul></li><li>Discuss how kids can keep the injured calm by provide reassurance is a soft voice.<ul style="list-style-type: none"><li>Emphasize that this will also help keep the student calm.</li></ul></li><li>Once EMS arrives to help the injured person, the students need to wash their hands.</li></ul> <p><b>Demonstration and Practice (10 Minutes)</b></p> <ul style="list-style-type: none"><li>Demonstrate packing a wound and holding direct pressure.<ul style="list-style-type: none"><li>Set up 2-3 wound packing station, each with an instructor, and have students practice.</li><li>Steps to practice<ul style="list-style-type: none"><li>Review what was discussed during the presentation.<ul style="list-style-type: none"><li>What does a lot of blood look like--soaking, puddle, and sprinkler</li><li>Identify was caused the injury</li><li>Stay safe and call 911</li><li>Scoop, stuff, and push</li></ul></li><li>Have students practice, emphasizing techniques used in scooping, stuffing and pushing with all of their body weight. Younger students will need to place their knee the wound for body weight.</li></ul></li><li>Each child should rotate between 2 stations.</li></ul></li></ul> <p><b>Closing (5 Minutes)</b></p> <ul style="list-style-type: none"><li>Complete the KWL chart by asking the students what they <b>learned</b> about bleeding.</li><li>Answer questions identified during "What do you want to learn" portion of the instruction.</li><li>During the review with students, another instructor is reviewing tourniquet application with the teacher. Ask the student to fill out an evaluation of the course.</li></ul>



#### KEY POINTS TO COURSE CURRICULUM

Using the Know-Want-Learn (KWL) tool gave the instructors the ability to assess the student's knowledge of bleeding control so that the anecdotal information could be tailored to an appropriate level. Both the KWL tool and the teacher evaluation established outcomes by determining if the content was presented in manner that the students could learn.

Bleeding Control for Kids		
Student Evaluation		
School: Rocklin Elementary		
Date:	Grade / Age:	Number of Students:
What do you <b>KNOW</b> about bleeding?		
What do you <b>WANT</b> to know about bleeding?		
What did you <b>LEARN</b> about bleeding?		

Sutter Health	
Sutter Roseville Medical Center	
We Plus You	
Bleeding Control for Kids Evaluation	
School: Rocklin Elementary Grade: _____ Date: _____	
1: Disagree 2: Somewhat Disagree 3: Neutral 4: Somewhat Agree 5: Agree	
The course was a suitable amount of time.	1 2 3 4 5
The program schedule was effective.	1 2 3 4 5
The content was age appropriate for students.	1 2 3 4 5
The instructors did a good job of interacting with students.	1 2 3 4 5
The instructors taught the material in an age appropriate manner.	1 2 3 4 5
The instructors were able to maintain the attention of the students.	1 2 3 4 5
The instructors were professional.	1 2 3 4 5
I would recommend this course for other students.	1 2 3 4 5
Comments / Feedback:	

Allowing the students to opt out of the activity was important because it helped reduce the stress and fear students had about the topic and allowed them to be more receptive to the information being taught. After discussing that uncontrolled hemorrhage would lead to death, emphasis was placed on the message that students were learning to save someone's life. This alleviated fear, empowered students, and created excitement about the course. Using the same key words and phrases in the same sequences helped students to remember the stages of bleeding control.

*Lots of bleeding looks like a puddle, sprinkler, or soaks through clothes.*

*Figure out what hurt the person.*

*Stay safe and call 911.*

*Scoop, stuff, and push.*

*Stay calm and talk to the person who is hurt.*

*Wash your hands.*

Incorporating hand gestures when key words and phrases were used helped students recall a step if forgotten. For example, touching a pant leg to indicate soaking and placing a hand an ear in the shape of a phone referenced calling 911. Using verbal and visual cues facilitated retention of information for different types of learners.

#### LESSONS LEARNED

Upon entering a room, the instructor asked the teacher what cue was routinely used to gain the students' attention which helped maintain control of the classroom. During the program, instructors monitored students to identify those who were uncomfortable with the content. Students who opted out of the activity were given the opportunity to sit next to an instructor and help teach the station, which they were often comfortable doing. As students finished their practice stations, they were asked to sit quietly at their desk and read a book until the entire class was finished. Student stories were limited, focusing on those with questions. Content feedback provided by teachers was then incorporated into the program.



#### NEXT STEPS

SRMC continues to grow the program and to establish outcome measures. Creating connections with new schools and districts remains a priority. An assessment of student retention of knowledge 6 months after participating in the program will be measured with an age appropriate questionnaire. A *Quick Tips to Bleeding Control* checklist will be developed and provided to schools with the recommendation that it is quickly reviewed with the students after each fire drill to reinforce learning. A Bleeding Control for Kids High School version will focus on the same content but will also include tourniquet application and hands only CPR. Identifying funding to donate a bleeding control kit to every classroom is also a goal.



#### OUTCOMES AND CONCLUSIONS

Comments and feedback from teachers was gathered to determine if the content and method of instruction is appropriate for students.

- Kindergarten:** *Awesome interactions with kinder students. A great class for students and teachers. Everyone learned something new! :)*
- 1<sup>st</sup> Grade:** *Scared some students, I was impressed with how much they knew. Maybe emphasize that this practice is like a fire drill. That way you know what to do in the future.*
- 4<sup>th</sup> Grade:** *Kids loved it. Very engaging. I'm sure the kids would love to experience the next steps in this process. Bandages? Stitches? Splints? Casts?*
- 5<sup>th</sup> Grade:** *Very engaging. Thanks for empowering our students.*
- 6<sup>th</sup> Grade:** *Thank you so much! Great job interacting with the students. I received many positive reviews from the students when we had a discussion after the presentation.*

To date, SRMC and community partners have taught hemorrhage control to over 1200 children from kindergarten to 6th grade. Classes have been taught at four schools as well as after school programs and summer camps. Bleeding control kits have been donated to 32 classrooms. SRMC has 11 instructors and has partnered with 3 local fire departments and ambulance providers. We look forward to expanding the Bleeding Control for Kids program and teaching more students how to save a life.

#### RESOURCES

Pons et al. (2015). The Hartford Consensus on Active Shooters: Implementing the Continuum of Prehospital Trauma Response. *The Journal of Emergency Medicine*, 49(6), 878-885.

Bleeding Control Basic (B-Con), www.bleedingcontrol.org.

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