

# FIRE AND BURN TRAINING: MEASURING SAFETY BEHAVIORS



**FEMA**



**alisa ann ruch**  
burn foundation



California State University  
**Northridge**



## Table of Contents

<b><u>Executive Summary</u></b> .....	<b><u>3</u></b>
<b>Project Overview</b>	
<u>Survey Results</u> .....	<u>5</u>
<u>Interview Results</u> .....	<u>8</u>
<u>What is Behavioral Science?</u> .....	<u>11</u>
<u>Focus Group Meeting</u> .....	<u>14</u>
<u>Creating Reliable and Valid Measurement Tools to Evaluate Outcomes</u> .....	<u>15</u>
<b><u>BeSafe Tool</u></b> .....	<b><u>17</u></b>
<b>Fire Escape</b>	
<u>Procedures</u> .....	<u>20</u>
<u>Knowledge Test</u> .....	<u>22</u>
<u>BeSafe Tool</u> .....	<u>23</u>
<u>Answers to Knowledge Test</u> .....	<u>25</u>
<b>Burn Care</b>	
<u>Procedures</u> .....	<u>26</u>
<u>Knowledge Test</u> .....	<u>28</u>
<u>BeSafe Tool</u> .....	<u>29</u>
<u>Answers to Knowledge Test</u> .....	<u>31</u>
<b>Burn Prevention</b>	
<u>Procedures</u> .....	<u>32</u>
<u>Knowledge Test</u> .....	<u>34</u>
<u>BeSafe Tool</u> .....	<u>35</u>
<u>Answers to Knowledge Test</u> .....	<u>37</u>
<b><u>Appendix A</u></b> .....	<b><u>38</u></b>
<b><u>References</u></b> .....	<b><u>47</u></b>

## **Executive Summary**

Often, we conduct fire safety or Community Risk Reduction (CRR) training and hope that the message sticks with the audience. We also measure our success by metrics such as how many people we interacted with, how many brochures or red fire helmets we handed out. But, is this where we should be going?

The goal of any fire safety training is to create behavior change in our audience. We want them to be able to take steps to avoid an emergency and, if one does happen, the correct action to take. The type of training that is being done now may not be the type that will create this change – it imparts knowledge, but this knowledge does not always translate into behavioral change. In addition, the metrics we are using reflect outputs (we met with a class of 30 students) versus an outcome (they demonstrated the proper action to be taken when an alarm sounds).

This grant project by the Alisa Ann Ruch Burn Foundation was undertaken to create a tool that can be used by the fire service and fire safety organizations with two major objectives:

1. Evaluating effective tools for delivering existing fire safety messages to the public by using the practices found in Behavioral Science. Our intent is to determine if the message and its delivery is having the desired outcome of behavior change. We want to move to a more evidence-informed evaluation of the effectiveness of the training.
2. Determines that the desired behavioral change has been achieved. Such a tool would help detect what actual behavior change occurs as a result of the education and training efforts and help determine if changes need to be made.

To accomplish this, we realized that we would need to bring together the disciplines of fire safety and behavioral science. We created a collaboration with behavioral scientists from the California State University, Northridge Psychology Department and a group of subject matter experts (SMEs) from a diversity of fire safety backgrounds to work together on creating this tool.

Our first step was to learn more details about how the fire service are currently doing its public education. We conducted a nationwide online survey of fire safety professionals from communities large and small, paid and volunteer fire departments and fire safety organizations. From this survey's respondents, we then selected a smaller group that we followed up with a telephone survey to gather more detailed information on their practices. The findings from the online survey and telephone survey were compiled and provided us with a road map on current practices.

We then moved to create a tool that could be easily used by the fire service and fire

safety advocates to evaluate their existing programs' effectiveness in creating behavioral change and also applied to any new programs they may create. For this stage, we brought together a team of SMEs for a two-day meeting to brainstorm possible solutions based on the underpinnings of behavioral science and their extensive experience in fire safety training. Our collaboration with this team has continued on where they evaluate and test the tool through its production, providing an invaluable sounding board. The end result is the Behavioral Evaluation and Safety Assessment for Fire Education tool, or BeSafe Tool.

## Project Overview

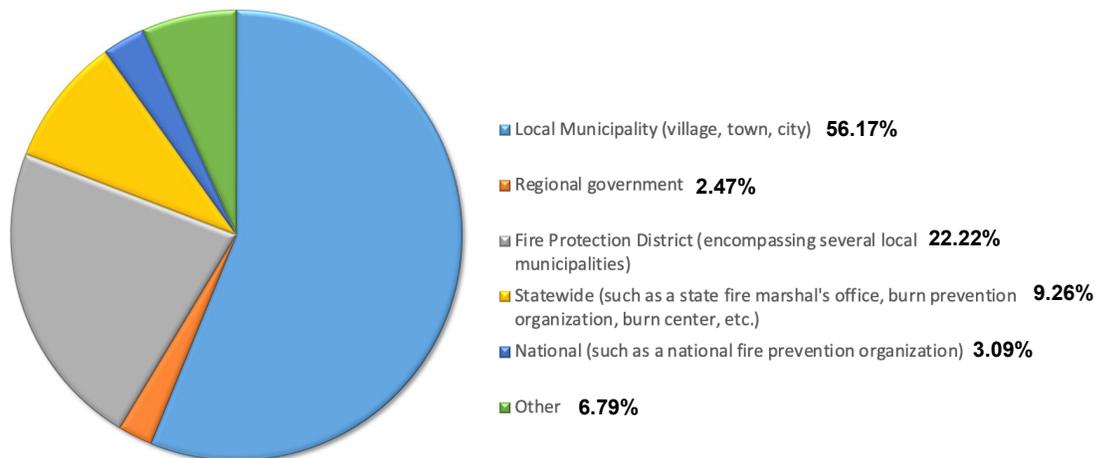
**Survey Results.** We conducted an online national survey to learn more about the methods and strategies that are currently being used by fire departments and fire safety organizations. Results to our survey yielded a total of 135 respondents from 37 states (See Figure 1).



**Figure 1: Demographics of Respondents**

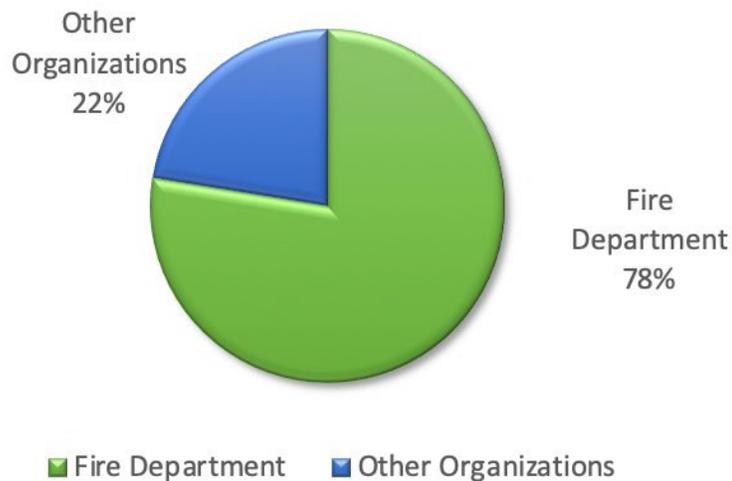
The demographics the participants came from included: (See Figure 2).

- Local municipality (village, town, city)
- Regional government
- Fire protection districts (encompassing several local municipalities)
- Statewide (such as a state fire marshal’s office, burn prevention organization, burn center, etc.), and
- National (such as a national fire prevention organization)



**Figure 2: Demographic Areas Served**

Over three-fourths of the respondents indicated that they were affiliated with fire departments, while 22% indicated being affiliated with other organizations such as burn prevention organizations, state fire marshal’s offices, and burn prevention centers (See Figure 3).



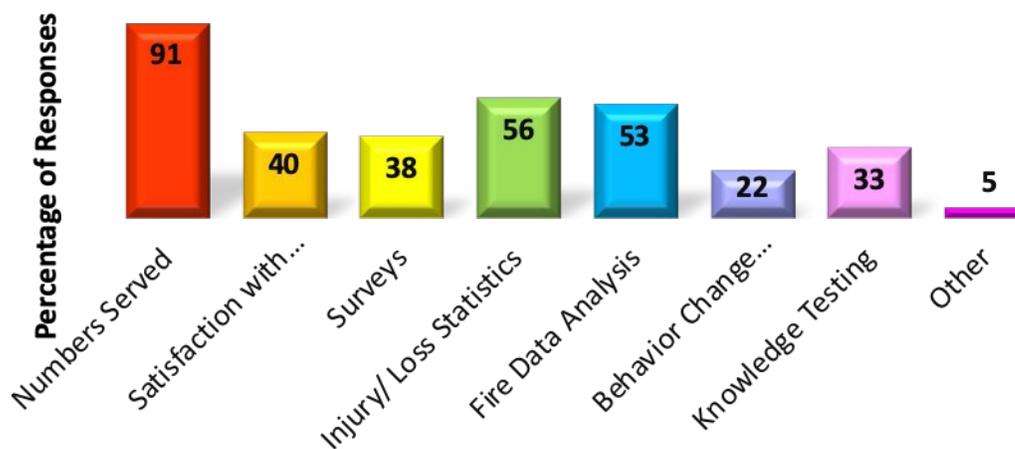
**Figure 3: Affiliated Organizations**

A majority of the respondents indicated that they conduct school visits for their fire safety educational program (See Figure 4) and their focus demographics were 4<sup>th</sup> and 5<sup>th</sup> grade students.



**Figure 4: How are the fire safety education programs implemented?**

We asked how they evaluate the effectiveness of their program and found that most were looking at the outputs of their educational programs instead of the outcomes. A majority looked at the numbers served, the injury/loss statistics and fire data analysis as their primary methods (See Figure 5).



**Figure 5: How do organizations evaluate the effectiveness of educational programs?**

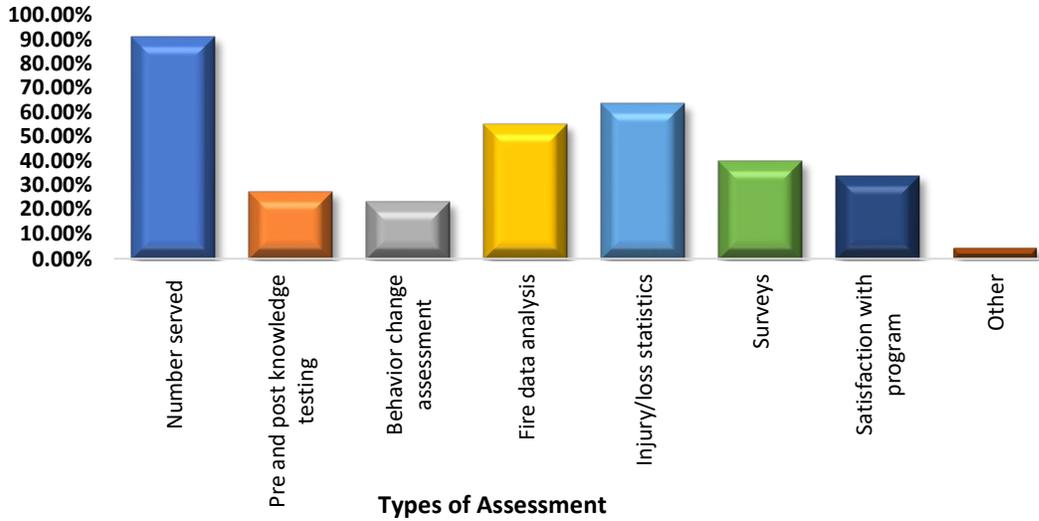
**Interview Results.** Based on the results of our survey, we conducted more detailed interviews by telephone with 14 subject matter experts (SMEs) who had indicated in their survey responses that they provided educational programming to the public and assessed for behavior change.

Phone interviews were structured around the following survey questions:

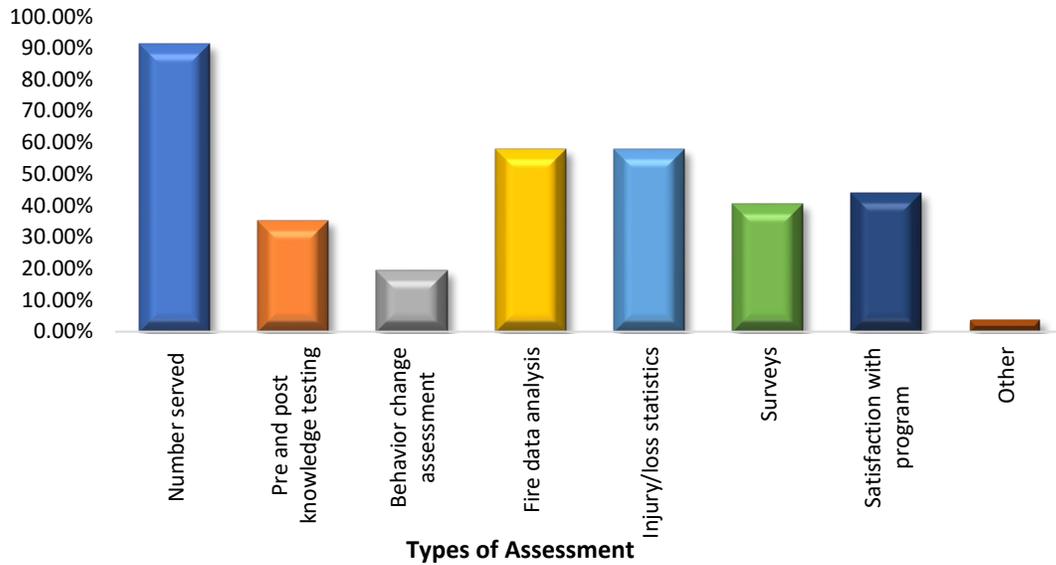
1. What types of behaviors are you targeting to change with your educational program?
2. If I were to look at the individuals you trained, what would I see them do that would tell me they received this information from you?
3. Do you get to see those behaviors?
4. How does this change depending on the target audience?
5. Currently, what are some of the ways you know that your program is effectively changing those behaviors?
6. Do you have a way of documenting what people learned from your education program?
7. Who is the person who does this?
8. What do instructions look like?
9. How are these instructions delivered (e.g., pamphlets, videos, etc.)?
10. Is there a portion of this educational programming that involves any hands-on training?
11. How is the demonstration delivered (e.g., in person, via video)?
12. Do the audiences have an opportunity to practice what they were taught and maybe get your input after?
13. Do they have a checklist or a means for the person to provide feedback?

We analyzed the interviews and found that interviewees reported conducting knowledge based multiple choice questions as their assessment for behavioral change. Again, this is not necessarily a measurement of behavioral change but an evaluation of knowledge transfer. When the subjects being interviewed were told about the nature of the grant project, they were very excited about developing the Be Safe Tool.

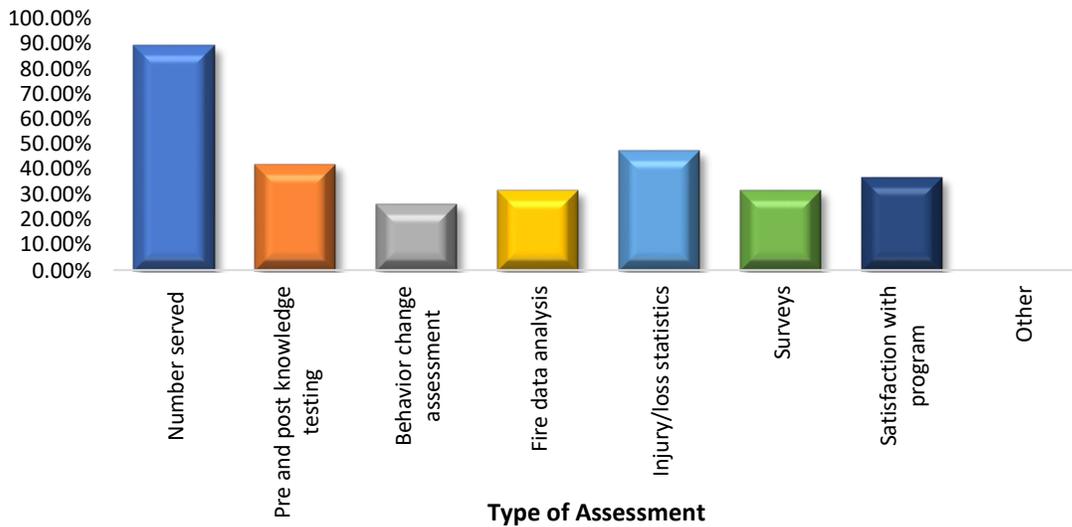
### How do you evaluate the effectiveness of your fire/burn prevention education programming?



### How do you evaluate the effectiveness of your fire escape education programming?



### How do you evaluate the effectiveness of your burn treatment education programming?



By far, the evaluation methodology used for evaluating the effectiveness of training programs was by the number of people interacted with, which is not necessarily an outcome nor a measure of behavioral change. In a number of cases, the respondents thought they were measuring for behavioral change when, in reality, they were not.

Having learned how fire agencies currently evaluate their fire safety training, we realized that there was a significant gap when it came to evaluating behavioral change, and we were ready to develop a method for evaluating behavioral change outcomes by creating a measurement tool.

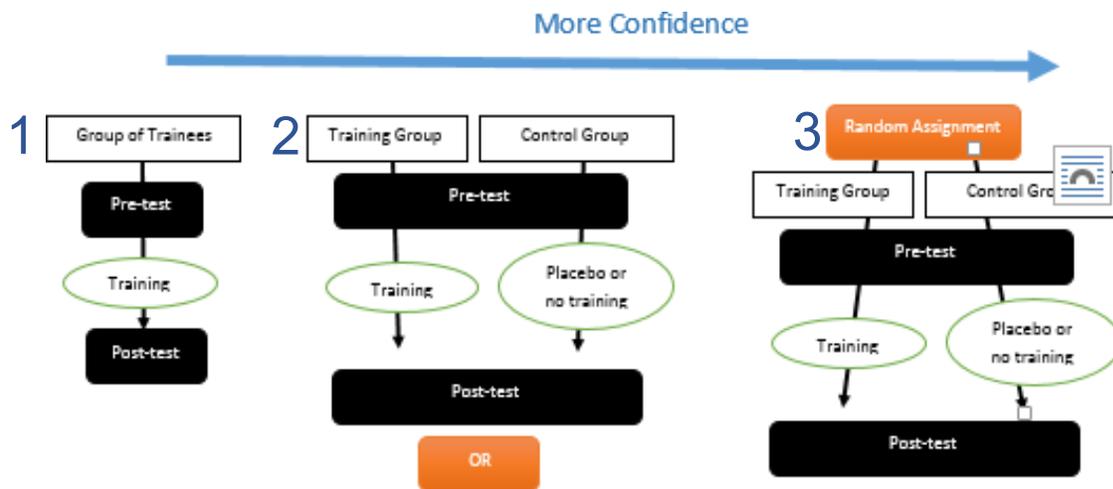
**What is Behavioral Science?** From a behavioral perspective, training results in two different types of behavior change:

1. *Knowledge*: the individuals who received training can answer questions correctly on tests (e.g., multiple choice, fill-in-the-blank)
2. *Performance*: the individuals who received training can demonstrate each step of the skill correctly (e.g., BeSafe Tool)
  - a. Behavioral scientists generally conduct pre- and post- training assessments to determine if the learning objectives for their educational training have been met. There are two distinct steps to this process:
3. A *pre-training*, sometimes called baseline, to determine trainees' level of knowledge and performance prior to the training
4. A *post-training* to evaluate if trainees' gained knowledge and if their performance improved.

**How Behavioral Scientists Measure Outcomes of Training.** Behavioral scientists take a few steps to rule out *alternative explanations*, called *confounding variables* in research methodology, to have confidence that the knowledge and performance change of trainees is solely the outcome of training and nothing else.

There is no way to eliminate all alternative explanations but there are methods to minimize the effects, which increase the confidence in the results. Below, we have listed a few different methods to evaluate the results of training in order of increasing confidence. Behavioral scientists select which of the following methods to use to evaluate the effects of their training based on available resources and feasibility of using the methodology.

1. **Comparison of pre- and post- training results of all individuals trained** (See Figure 6). This is a commonly used and easy method of assessment. In order to increase your confidence that your results are solely due to your training, you may utilize one of the more methodologically rigorous procedures below.
2. **Comparison of pre- and post- training results of two groups.** This method is made up of two groups:
  - a. Group A who receives training  
Group B who does not receive the training (called the control group)
  - b. For this comparison to give higher level of confidence, the pre and post-training for Group A and B need to be conducted at the same time.
3. **Comparison of randomly assigned control versus trained group** Same scenario as 2 above, except that trainees are randomly assigned to either the training or the control groups. (See Figure 6).



**Figure 6: Different Methods to Evaluate Training Outcomes**

The following are the procedures for carrying out a pre and post-training measure (See Figure 6, 1 above):

1. **Prior to the Date of Assessment.** Go to this website **XXX** and make sure you have obtained training the observation of performance measure training.
2. **Setting-up.** The assessors will need either to select an empty classroom or create a corner in a classroom to be able to observe each student demonstrate their skills, one at a time, without students seeing each other’s demonstration. The assessors will need to restructure the classroom environment to be able to simulate the scenario (either Fire Escape or Burn Care). For example, for the Fire Escape, we will need to set up a bed (for example, two chairs stacked against the wall). On **XXX** we have provided packets of materials to be used for this set up.
3. **Prior to the Training.** The assessors will need to hand out the Knowledge Test and give the students 5 minutes to complete and turn it in. Ask students to check mark "Pre-Training" at the top of their sheets. The Knowledge Tests take about 10 minutes to administer. For the Be Safe Tool, the assessor will need to select anywhere between 10 to 20% of students. For a strong assessment, select those students randomly. If there is a problem in selecting students at random, ask for volunteers or referrals from the teacher. Take each student to the room that you set up in the previous step, in order to ask them to go through the scenarios to see how they would perform. The assessor will not give the students feedback about their performance during this portion of the assessment. Use the BeSafe Tool to rate their performance. This baseline assessment will take anywhere between 2-3 minutes with each student. Depending upon age ranges, students who are not going through

the Be Safe Tool may become distracted. It is recommended to use the Be Safe Tool in advance or to give students an activity to do in the meantime.

4. **Training.** Conduct your training as usual.
5. **After the Training.** The assessors will need to hand out the same Knowledge Test and give the students 5 minutes to complete and turn it in. Ask students to check mark "Post-Training" at the top of their sheets. For the Be Safe Tool, the assessors will follow the same procedures as they implemented during the pre-training assessment. Each assessor will use the same Behavioral Evaluation and Safety Assessment for Fire Education tool, BeSafe Tool, they used during pre-training to conduct a post-training assessment. They will observe and rate the performance of the same students with whom they conducted the pre-training assessment. The assessor can give the students feedback about their performance after completing each assessment to assure that the assessment procedure is not influenced by the feedback. The post-training assessments will take anywhere between 2-5 minutes with each student.
6. **To evaluate the effects of your training.** Compare students' post-training scores to their pre-training scores on the knowledge test. Compare students' total of correct responses post-training to how they performed prior to training. Ideally you would like to see that students did not know what to do pre-training, but that they knew 90% or more of the correct steps post-training.

***What to Do After Measuring the Outcomes of Your Training.*** When you evaluate the effects of your training, you will be able to determine the changes needed (if necessary) to improve and meet your training's learning goals. Some methods could include:

1. Changing the content of your instructions by
  - a. Changing the emphasis of certain information
  - b. Providing more examples
  - c. Using different ways of instruction (e.g., more visuals)

You can also change training by going beyond simple instruction. Behavioral scientists have found that instructional methods improve knowledge of trainees but not necessarily their performance of trained skills. To improve performance, trainees need:

1. A model that demonstrates the performance
2. Opportunities to demonstrate and practice the skills
3. Performance feedback on their demonstration of skills

In other words, if your goal is to have a participant learn a new skill, the most effective way is to demonstrate the new skill and then have them demonstrate the learned skill. This is not only an effective way of imparting them with the knowledge and by having them demonstrate that they learned the skill it 1) reinforces it in their mind and 2) provides you, the instructor, with the confidence that they did learn it and behavioral change took place.

While it would be desirable to have every student demonstrate every skill, in reality this may not be feasible. Having a select group demonstrate the learned skill before the entire group is a viable alternative, although not as effective.

***Focus Group Meeting.*** We then met with 7 SMEs, who worked for either fire departments or in fire and burn safety, for a two-day meeting on May 23 and 24, 2018 to help develop the Be Safe Tool.

Realizing that it was important to narrow the scope of possible areas, the team focused on four key categories:

1. Smoke alarms
2. Fire escape
3. Burn prevention
4. Burn treatment.

During the meeting, SMEs were given a detailed overview on the relevant parts of behavioral science that could be employed in developing the Be Safe Tool. This was key to helping them understand the difference between the common practices identified during Stage 1 of this project where many people were relying on imparting knowledge

and measuring outputs instead of outcomes.

SME's that participated in the development of the tool:

1. **Andrew Ainsworth**, California State University, Northridge
2. **Greg Adams**, Tennessee State Fire Marshal's Office
3. **Daniel Chacon**, Alisa Ann Ruch Burn Foundation
4. **Ed Comeau**, writer-tech.com
5. **Michael Durkin**, Poudre Fire Authority
6. **Josh Fulbright**, South Carolina State Fire Marshal's Office
7. **Marsha Geisler**, Downers Grove Fire Department
8. **Deanna Harrington**, Arvada Fire Protection District
9. **Ellie Kazemi**, California State University, Northridge
10. **Richard Palmer**, Ohio State Fire Marshal's Office
11. **Adisa Ptah**, California State University, Northridge
12. **Jennifer Radics**, Alisa Ann Ruch Burn Foundation
13. **Sunny Smaldino**, Colorado Springs Fire Department

During the two-day meeting we collaboratively developed behavior assessment measures for fire escape, burn prevention, and burn care.

***Creating Reliable and Valid Measurement Tools to Evaluate Outcomes.*** In this project, we took several steps to develop measurement tools that could be used with confidence by individuals interested in assessing fire and burn safety skills using these steps:

1. SMEs expressed that they would recommend them to their colleagues. We developed the behavior safety tools based on existing behavioral science research
2. We involved SMEs in the development and revision of the behavior measurement tools to help ensure real-world applicability
3. We assessed for interobserver agreement by having two trained observers independently rate the performance of actors in videos. We found that the observers agreed 100% on each behavior they measured as occurring or not occurring.
4. We developed training videos to standardize training on the use of the behavior measurement tools.
5. We assessed for interobserver agreement between SME and trained observers at CSUN and found that 75% of SMEs correctly rated the performance of a student for Fire Escape, 100% of SMEs correctly rated the performance of a student for Burn Care, and 75% of SMEs correctly rated the performance of a student for Burn Prevention.

6. We surveyed the SMEs after they reviewed the behavior measurement tool training videos and used the tool to observe the performance of actors on videos. We found that a majority of SMEs found the tools to be easy to use and see themselves using the tools in their fire safety training. Our SMEs also provided examples of the various fire safety programs that would benefit from the inclusion of the Be Safe Tool.

## **BeSafe Tool**

This tool is a procedure that can be applied to any fire safety training program. For the purposes of this manual, we have chosen three topics that many are familiar with to demonstrate how it is to be used:

1. Fire Escape
2. Burn Care
3. Burn Prevention

It is important to note that these are only examples of how the tool is to be used. It can be applied to any fire safety training program. And while the audience in these examples are children, the tool can also be used with any demographic. It is an opportunity to design training that works with different age groups or ethnicities, for example. This tool provides a mechanism for evaluating the effectiveness of the training in a demonstrable way through performance evaluation.

Furthermore, this tool does not need to be used every single time a training program is delivered. Its intent is to evaluate the effectiveness of the training. As such, it can be used in the initial stages of developing a training program and getting demonstrable feedback that can then be used in either going forward with the training or modifying it and evaluating it again before deploying it into the field.

Having an evidence-based tool such as BeSafe provides the educator with the ability to not only evaluate and improve training, but a metric that can be used in providing data on outcomes for your Community Risk Reduction program.

**In this section we will dive into how to use this tool. To help demonstrate its use, we employed three examples. BeSafe can be used on any training topic relating to fire safety or Community Risk Reduction.**

***Creating your own BeSafe Tool.*** To create a BeSafe tool that you can use for evaluating any training, the following steps should be taken:

1. *Knowledge-based training*
  - a. Create a test with a series of questions appropriate for the age of your target group that will test their knowledge about the skills you want to teach.
2. *Performance-based training*
  - a. The skills that you want to teach must be broken down into a series of discreet steps for evaluation
  - b. The number of steps that you want to evaluate is up to your discretion. It is important that each step is written in observable and measurable terms. This will comprise the BeSafe Tool.
    - i. Note that in each of the examples given (Fire Escape, Burn Prevention, Burn Care, each of the three scenarios build on a specific action from the one before. This cascade of skills is valuable in determining if behavior change is occurring.)
  - c. We recommend that you thoroughly test both the Knowledge and Performance-based skills within your organization before using it with the public.

After you make any changes in your training program, you can test it again with the BeSafe tool to see if the changes result in the desired outcome.

***Using the BeSafe Tool.*** The following are the generic procedures for using the BeSafe tool followed by specific examples of how it can be implemented.

There are two skills that need to be taught and evaluated:

1. *Knowledge-based*
  - a. This is essentially “book learning” where the student learns the concepts without actually practicing or demonstrating them.
  - b. The measure of the effectiveness of knowledge transfer from the instructor to the student can be evaluated through pre- and post-training.
2. *Performance-based*
  - a. Most fire safety depends upon the student doing some type of physical action (using an exit, using water to cool a burn, etc.)
  - b. While this knowledge can be transferred from the instructor to the student through a variety of mechanisms (oral, demonstrations, visual aids such as books, drawings, videos, etc.), the most effective method of impressing this knowledge upon the student and effecting behavioral change is by having the student physically demonstrate the proper steps to be taken.

It is proven that performance and behavioral change increases significantly when all of the following concepts are incorporated into the training:

- **Exposure** to the new knowledge or skill
- **Instruction** of the new knowledge or skill
- **Modeling** the new knowledge or skill
- **Role playing** with the new knowledge or skill
- **Performance Feedback** on how effectively the new knowledge or skill was demonstrated
- **Repeating and Practicing** the new knowledge or skill in

## BeSafe **Tool Fire Escape** Procedures

Below, we have provided the knowledge tests and BeSafe tools that we developed based on AARBF knowledge tests and SME's workgroup.

**Audience:** Youth 6-years-old and above

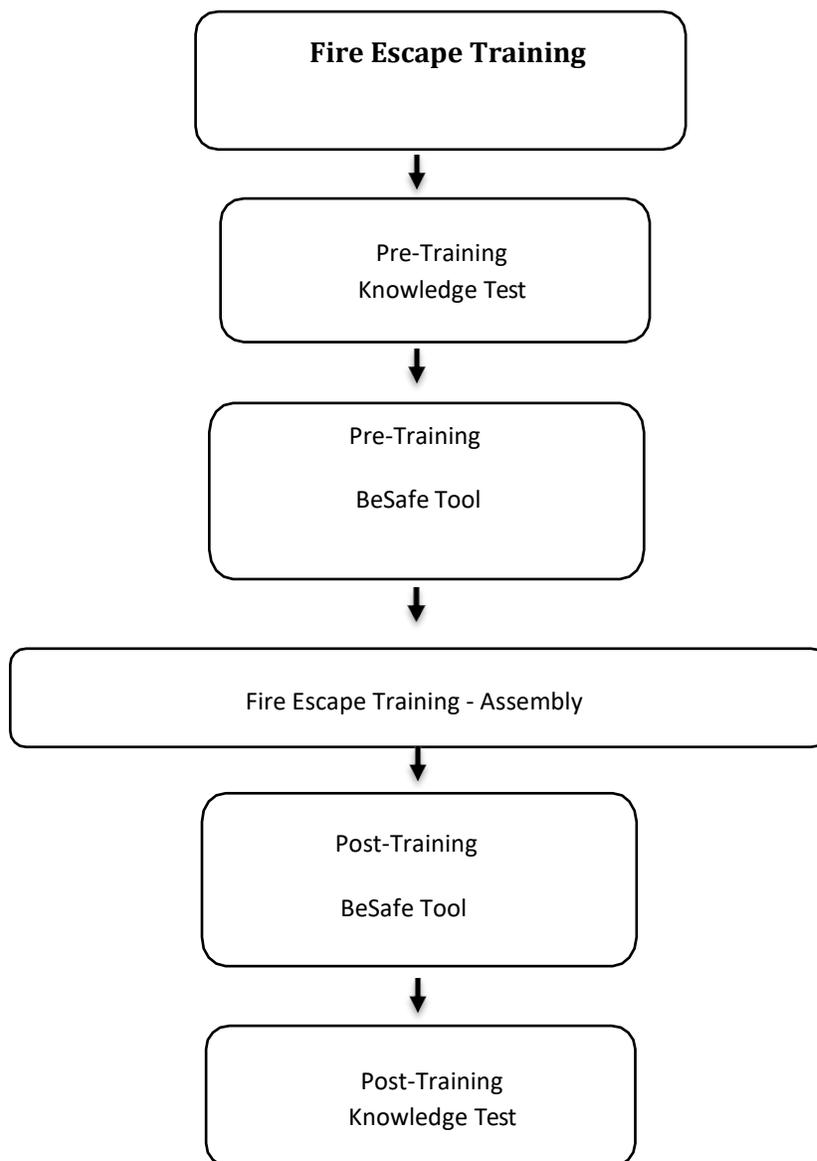
1. **Fire Escape at home for when there is a fire at night**
2. Burn Care at Home
3. Burn Prevention Based on Cooking Fires

**Fire Escape:** Procedures

1. **Prior to the Date of Assessment.** Go to this website **XXX** and make sure you have obtained the observation of performance measure training
2. **Setting-up.** The assessors will need either to select an empty classroom or create a corner in a classroom to be able to observe each student demonstrate their skills, one at a time, without students seeing each other's demonstration. The assessors will need to restructure the classroom environment to be able to simulate the scenario (either Fire Escape or Burn Care). For example, for the Fire Escape, we will need to set up a bed (for example, two chairs stacked against the wall). On **XXX** we have provided packets of materials to be used for this set up.
3. **Prior to the Training.** The assessors will need to hand out the Knowledge Test and give the students 5 minutes to complete and turn it in. Ask students to check mark "Pre-Training" at the top of their sheets. The Knowledge Tests take about 10 minutes to administer. For the Be Safe Tool, the assessor will need to select anywhere between 10 to 20% of students. For a strong assessment, select those students randomly. If there is a problem in selecting students at random, ask for volunteers or referrals from the teacher. Take each student to the room that you set up in the previous step, in order to ask them to go through the scenarios to see how they would perform. The assessor will not give the students feedback about their performance during this portion of the assessment. Use the BeSafe Tool to rate their performance. This baseline assessment will take anywhere between 2-3 minutes with each student. Depending upon age ranges, students who are not going through the Be Safe Tool may become distracted. It is recommended to use the Be Safe Tool in advance or to give students an activity to do in the meantime.
4. **Training.** Conduct your training as usual.
5. **After the Training.** The assessors will need to hand out the same Knowledge Test and give the students 5 minutes to complete and turn it in. Ask students to check mark "Post-Training" at the top of their sheets. For the Be Safe Tool, the assessors will follow the same procedures as they implemented during the pre-training assessment. Each assessor will use the same Behavioral Evaluation and Safety Assessment for Fire Education tool, BeSafe Tool, they used during pre-training to conduct a post-training assessment. They will observe and rate the performance of the same students with whom they conducted the pre-training assessment.

The assessor can give the students feedback about their performance after completing each assessment to assure that the assessment procedure is not influenced by the feedback. The post-training assessments will take anywhere between 2-5 minutes with each student.

6. **To evaluate the effects of your training.** Compare students' post-training scores to their pre-training scores on the knowledge test. Compare students' total of correct responses post-training to how they performed prior to training. Ideally you would like to see that students did not know what to do pre-training, but that they knew 90% or more of the correct steps post-training.



## Fire Escape: Knowledge Test

Pre-Training

Post-Training

Student Name: \_\_\_\_\_ Grade: \_\_\_\_\_

1. What are the signs that there is a fire?
  - a. You smell or see smoke, you see visible fire, you hear the smoke alarm going off
  - b. Bedroom door is cool
  - c. Your dog keeps barking and looking directly at you
2. If you have a fire in your home, what is **the first thing** you should try to do?
  - a. Call the fire department immediately from your home
  - b. Stop, Drop, and Roll
  - c. Get out of the house
3. You are sleeping in your room and you wake up to the sound of your smoke alarm beeping. What should you do first?
  - a. Hide under your bed
  - b. Get out of bed, crawl to your bedroom door, and feel the door with your hand before opening
  - c. Run to your door, out of your room, and outside to your family's meeting place
4. You see smoke in your room. What should you do?
  - a. Get low to the floor and crawl to the door or window to escape
  - b. Hide under your bed
  - c. Stand up and run outside
5. Your bedroom is on the 1st floor. The fire has spread and the bedroom door is hot. What should you do?
  - a. Open the door to check on the fire
  - b. Try to get out through the window
  - c. Pack a bag of the things you will need and get out

**Fire Escape:** BeSafe Tool

Pre-Training

Post-Training

**Student Name:** \_\_\_\_\_ **Grade:** \_\_\_\_\_

**Instructions:**

1. Read (out loud) - Each Scenario listed on the **BeSafe Tool** and ask the student to show you what they would do in that situation
2. Do each scenario one at a time.
3. Observe – Student’s behaviors and compare it to the correct response required. Do not offer guidance or any correction; we want to see if they know what to do properly or not.
4. Notate - As student responds
  - a. Check **Yes** if performed correctly
  - b. Check **No** if performed incorrectly or not performed
5. Summarize - Add all **Yes** responses for the total

**Fire Escape: BeSafe Tool**

Scenario 1	Correct responding required	Yes	No
Situation: <b>“Your bedroom door is not hot and there is no visible fire or smoke. What do you do?”</b>	1. Slid to the edge of bed		
	2. Walked/crawled to door		
	3. Felt the Door (door is not hot)		
	4. Opened the door		
	5. Looked both ways for fire or smoke (there is none)		
	6. Walked to the nearest exit, front or back door		
	7. Went to the meeting place outside		
	Total “Yes”		/7

Scenario 2	Correct responding required	Yes	No
Notes to Trainer: <i>Fire has spread, bedroom door is hot, bedroom is on the first floor.</i>  Situation: <b>“It is the middle of the night. The smoke alarm goes off or you smell smoke”. What do you do?”</b>	1. Slid to the edge of bed		
	2. Walked/crawled to door		
	3. Felt the Door ( <b>“door is hot”</b> )		
	4. Walked/crawled to window		
	5. Opened the window		
	6. Climbed out the window		
	7. Went to the meeting place outside		
	Total “Yes”		/7

Scenario 3	Correct responding required	Yes	No
Situation: <b>“Fire has spread, bedroom door is hot, your bedroom is on 2<sup>nd</sup> floor or higher. Your smoke alarm goes off or you smell smoke, what do you do.”</b>	1. Slid to the edge of bed		
	2. Walked/crawled to door		
	3. Felt the Door (door is hot)		
	4. Walked/crawled to window		
	5. Alerted someone (called 911, yelled, waved arms or something visible from outside)		
	Total “Yes”		/5

**Fire Escape: Answers** to the Knowledge Test

**Fire Escape**

1. What are the signs that there is a fire?
  - a. You smell or see smoke, you see visible fire, you hear the smoke alarm going off
  - b. Bedroom door is cool
  - c. Your dog keeps barking and looking directly at you
2. If you have a fire in your home, what is **the first thing** you should try to do?
  - a. Call the fire department immediately from your home
  - b. Stop, Drop, and Roll
  - c. Get out of the house
3. You are sleeping in your room and you wake up to the sound of your smoke alarm beeping. What should you do first?
  - a. Hide under your bed
  - b. Get out of bed, crawl to your bedroom door, and feel the door with your hand before opening
  - c. Run to your door, out of your room, and outside to your family's meeting place
4. You see smoke in your room. What should you do?
  - a. Get low to the floor and crawl to the door or window to escape
  - b. Hide under your bed
  - c. Stand up and run outside
5. Your bedroom is on the 1st floor. The fire has spread and the bedroom door is hot. What should you do?
  - a. Open the door to check on the fire
  - b. Try to get out through the window
  - c. Pack a bag of the things you will need and get out

## BeSafe Tool Burn Care Procedures

Below, we have provided the knowledge tests and BeSafe tools that we developed based on AARBF knowledge tests and SME's workgroup.

**Audience:** Youth 6-years-old and above

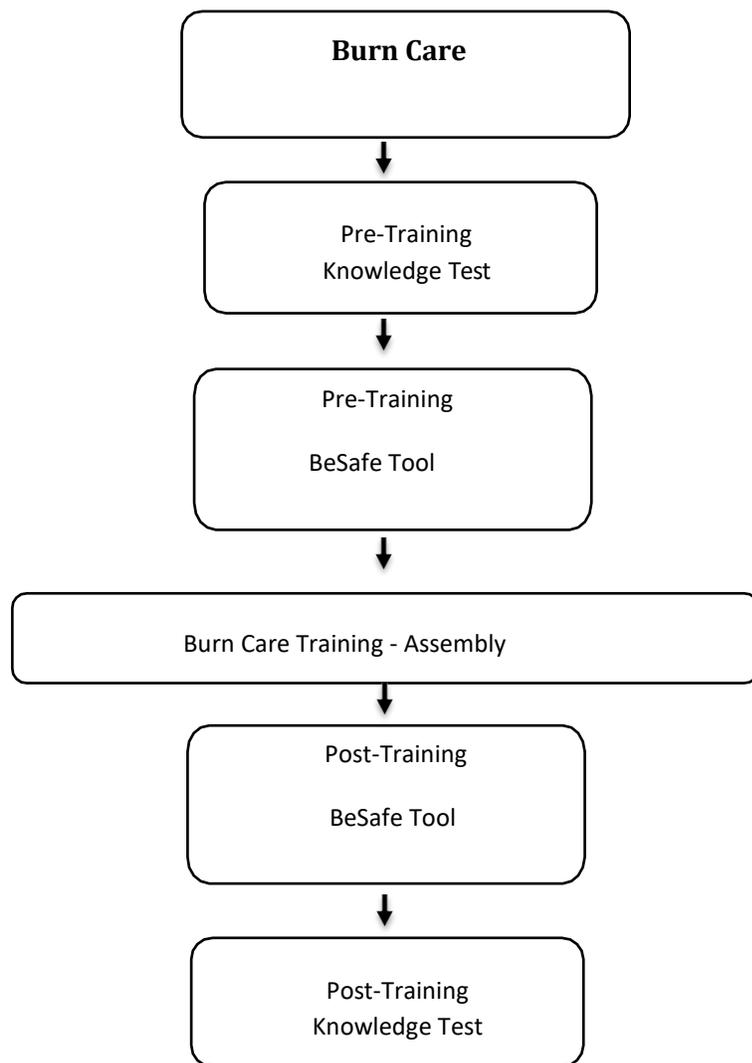
1. Fire Escape at home for when there is a fire at night
2. **Burn Care at Home**
3. Burn Prevention Based on Cooking Fires

### Burn Care: Procedures

1. **Prior to the Date of Assessment.** Go to this website **XXX** and make sure you have obtained the observation of performance measure training.
2. **Setting-up.** The assessors will need either to select an empty classroom or create a corner in a classroom to be able to observe each student demonstrate their skills, one at a time, without students seeing each other's demonstration. The assessors will need to restructure the classroom environment to be able to simulate the scenario (either Fire Escape or Burn Care). For example, for the Fire Escape, we will need to set up a bed (for example, two chairs stacked against the wall). On **XXX** we have provided packets of materials to be used for this set up.
3. **Prior to the Training.** The assessors will need to hand out the Knowledge Test and give the students 5 minutes to complete and turn it in. Ask students to check mark "Pre-Training" at the top of their sheets. The Knowledge Test take about 10 minutes to administer. For the Be Safe Tool, the assessor will need to select anywhere between 10 to 20% of students. For a strong assessment, select those students randomly. If there is a problem in selecting students at random, ask for volunteers or referrals from the teacher. Take each student to the room that you set up in the previous step, in order to ask them to go through the scenarios to see how they would perform. The assessor will not give the students feedback about their performance during this portion of the assessment. Use the behavior measure to rate their performance. This baseline assessment will take anywhere between 2-3 minutes with each student. Depending upon age ranges, students who are not going through the Be Safe Tool may become distracted. It is recommended to use the Be Safe Tool in advance or to give students an activity to do in the meantime.
4. **Training.** Conduct your training as usual.
5. **After the Training.** The assessors will need to hand out the same Knowledge Test and give the students 5 minutes to complete and turn it in. Ask students to check mark "Post-Training" at the top of their sheets. For the Be Safe Tool, the assessors will follow

the same procedures as they implemented during the pre-training assessment. Each assessor will use the same Behavioral Evaluation and Safety Assessment for Fire Education tool, BeSafe Tool, they used during pre-training to conduct a post-training assessment. They will observe and rate the performance of the same students with whom they conducted the pre-training assessment. The assessor can give the students feedback about their performance after completing each assessment to assure that the assessment procedure is not influenced by the feedback. The post-training assessments will take anywhere between 2-5 minutes with each student.

6. **To evaluate the effects of your training.** Compare students' post-training scores to their pre-training scores on the knowledge questions. Compare students' total of correct responses post-training to how they performed prior to training, but that they knew 90% or more of the correct steps post-training



**Burn Care: Knowledge Test**

Pre-Training

Post-Training

**Student Name:** \_\_\_\_\_ **Grade:** \_\_\_\_\_

**Burn Care**

1. You get a burn on your hand. What should you put on the area that is burned?
  - a. Put ice on it to cool it down
  - b. Put cool water on it
  - c. Put lotion on it
2. When do you have to Stop, Drop, and Roll?
  - a. When your smoke alarm is making noise
  - b. When your house is on fire
  - c. When your clothes are on fire
3. What is the best way to put out a fire on your body?
  - a. Pat the fire out
  - b. Stop, drop, and roll
  - c. Get water from the sink
4. After you put out the fire on your clothes, what **the first thing** you do?
  - a. Lay straight and cover face, roll back and forth until fire is out
  - b. Tell an adult
  - c. Place the burned area under cool running water for 2-5 minutes
5. If there is no adult present, what is **the first thing** you should do after treating a burn?
  - a. Call 911
  - b. Go to the sink
  - c. Drop to the ground/floor

**Burn Care: BeSafe Tool**

Pre-Training

Post-Training

**Student Name:** \_\_\_\_\_ **Grade:** \_\_\_\_\_

**Instructions:**

1. Read (out loud) - Each Scenario listed on the **BeSafe Tool** and ask the student to show you what they would do in that situation
2. Do each scenario one at a time.
3. Observe – Student’s behaviors and compare it to the correct response required. Do not offer guidance or any correction; we want to see if they know what to do properly or not.
4. Notate - As student responds
  - a. Check **Yes** if performed correctly
  - b. Check **No** if performed incorrectly or not performed
5. Summarize - Add all **Yes** responses for the total

**Burn Care: BeSafe Tool**

<b>Burn Care</b>			
<b>Situation 1</b>	<b>Correct responding required</b>	<b>Yes</b>	<b>No</b>
Situation: <b>“Your clothes are on fire and an adult is available”</b>	1. Dropped to the ground/floor		
	2. Laid straight and covered face		
	3. Rolled back and forth until Fire was out		
	4. Went to the sink		
	5. Placed burned area under cool running water. <b>“How long should you hold under the water?”</b> <b>(Answered: 2-5 minutes)</b>		
	6. Told an adult		
	Total “Yes”		/6

<b>Burn Care</b>			
<b>Situation 2</b>	<b>Correct responding required</b>	<b>Yes</b>	<b>No</b>
Situation: <b>“Your clothes are not on fire and adult available”</b>	1. Went to the sink		
	2. Placed burned area under cool running water. <b>“How long should you hold under the water?”</b> <b>(Answered: 2 -5 minutes)</b>		
	3. Told an adult		
	Total “Yes”		/3

<b>Burn Care</b>			
<b>Situation 3</b>	<b>Correct responding required</b>	<b>Yes</b>	<b>No</b>
Situation: <b>“Your clothes are on fire, no adult available”</b>	1. Dropped to the ground/floor		
	2. Laid straight and covered face		
	3. Rolled back and forth until fire is out		
	4. Went to the sink		
	5. Placed burned area under cool running water. <b>“How long should you hold under the water?”</b> <b>(Answered: 2-5 minutes)</b>		
	6. No adult, called 911		
	Total “Yes”		/6

## Burn Care: **Answers** to the Knowledge Test

### Burn Care

1. You get a burn on your hand. What should you put on the area that is burned?
  - a. Put ice on it to cool it down
  - b. **Put cool water on it**
  - d. Put lotion on it
2. When do you have to Stop, Drop, and Roll?
  - a. When your smoke alarm is making noise
  - b. When you smell or see smoke in your house
  - c. **When your clothes are on fire**
3. What is the best way to put out a fire on your body?
  - a. Pat the fire out
  - b. **Stop, drop, and roll**
  - c. Get water from the sink
4. After you put out the fire on your clothes, what is the first thing you do?
  - a. Lay straight and cover face, roll back and forth until fire is out
  - b. Tell an adult
  - c. **Place the burned area under cool running water for 2-5 minutes**
5. If there is no adult present, what is the first thing you should do after treating a burn?
  - a. **Call 911**
  - b. Go to the sink
  - c. Drop to the ground/floor

## BeSafe Tool Burn Prevention Procedures

Below, we have provided the knowledge tests and BeSafe tools that we developed based on AARBF knowledge tests and SME's workgroup.

**Audience:** Youth 6-years-old and above

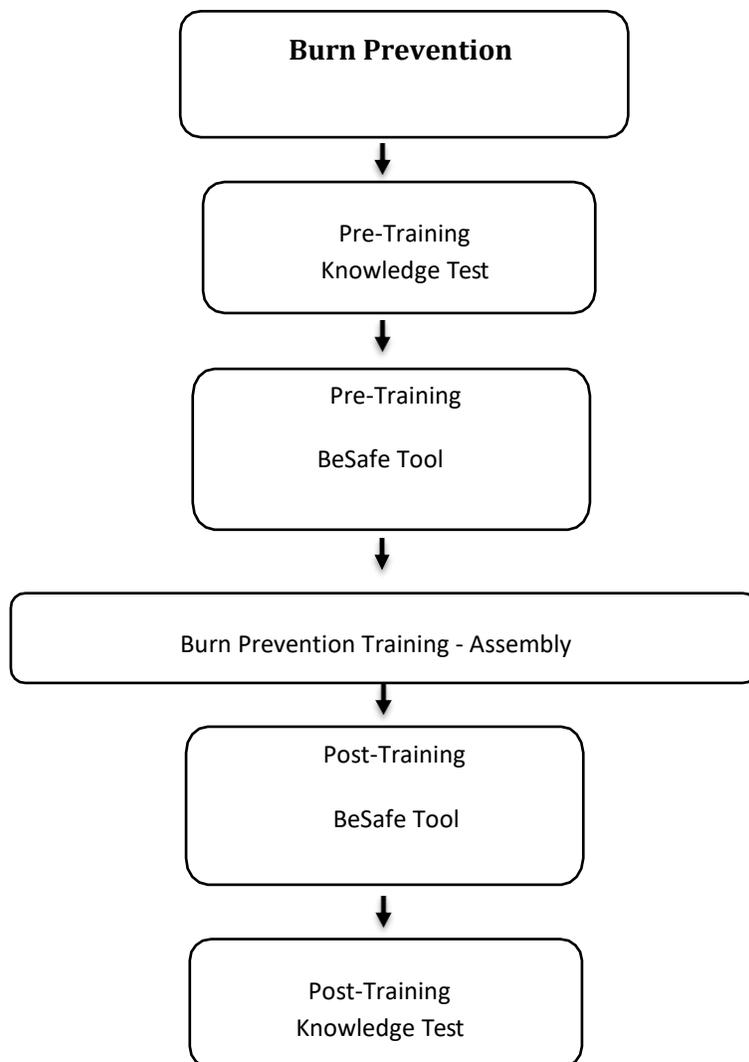
1. Fire Escape at home for when there is a fire at night
2. Burn Care at Home
3. **Burn Prevention Based on Cooking Fires**

**Burn Prevention:** Procedures

1. **Prior to the Date of Assessment.** Go to this website **XXX** and make sure you have obtained the observation of performance measure training
2. **Setting-up.** The assessors will need either to select an empty classroom or create a corner in a classroom to be able to observe each student demonstrate their skills, one at a time, without students seeing each other's demonstration. The assessors will need to restructure the classroom environment to be able to simulate the scenario (either Fire Escape or Burn Care). For example, for the Fire Escape, we will need to set up a bed (for example, two chairs stacked against the wall). On **XXX** we have provided packets of materials to be used for this set up.
3. **Prior to the Training.** The assessors will need to hand out the Knowledge Test and give the students 5 minutes to complete and turn it in. Ask students to check mark "Pre-Training" at the top of their sheets. The Knowledge Test take about 10 minutes to administer. For the Be Safe Tool, the assessor will need to select anywhere between 10 to 20% of students. For a strong assessment, select those students randomly. If there is a problem in selecting students at random, ask for volunteers or referrals from the teacher. Take each student to the room that you set up in the previous step, in order to ask them to go through the scenarios to see how they would perform. The assessor will not give the students feedback about their performance during this portion of the assessment. Use the behavior measure to rate their performance. This baseline assessment will take anywhere between 2-3 minutes with each student. Depending upon age ranges, students who are not going through the Be Safe Tool may become distracted. It is recommended to use the Be Safe Tool in advance or to give students an activity to do in the meantime.
4. **Training.** Conduct your training as usual.
5. **After the Training.** The assessors will need to hand out the same Knowledge Test and give the students 5 minutes to complete and turn it in. Ask students to check mark "Post-Training" at the top of their sheets. For the Be Safe Tool, the assessors will follow the same procedures as they implemented during the pre-training assessment. Each assessor will use the same Behavioral Evaluation and Safety Assessment for Fire

Education tool, BeSafe Tool, they used during pre-training to conduct a post-training assessment. They will observe and rate the performance of the same students with whom they conducted the pre-training assessment. The assessor can give the students feedback about their performance after completing each assessment to assure that the assessment procedure is not influenced by the feedback. The post-training assessments will take anywhere between 2-5 minutes with each student.

6. **To evaluate the effects of your training.** Compare students' post-training scores to their pre-training scores on the knowledge questions. Compare students' total of correct responses post-training to how they performed prior to training, but that they knew 90% or more of the correct steps post-training



**Burn Prevention: Knowledge Test**

Pre-Training

Post-Training

**Student Name:** \_\_\_\_\_ **Grade:** \_\_\_\_\_

**Burn Prevention**

1. What is the first thing you should do when there is a fire in your microwave?
  - a. Turn power off
  - b. Grab hot pad/oven mitt
  - c. Walk to the nearest exit
2. What is the first thing you should do if there is a fire inside of your oven?
  - a. Close the oven door if it is open
  - b. Go outside to your meeting place
  - c. Turn oven off
3. What is the first thing you do if there is a fire on top of your stove?
  - a. Grab hot pad/oven mitt to use in sliding a lid over the top of the pan
  - b. Slide lid over top of pan to smother the flames
  - c. Call 911 or yell for help
4. You're home alone and a pan on top of the stove has caught on fire. You've grabbed a hot pad/oven mitt, slid the lid over top of pot, and turned off the burner. When should you call 911?
  - a. After going outside
  - b. When you cannot find your favorite toy
  - c. When you fall off your bike and scratch your knee
5. You're home alone and something inside the microwave caught on fire. You've turned it off, closed the door, and unplugged it. What's the next thing you do?
  - a. Call 911
  - b. Yelp for help
  - c. Walk to the nearest exit and go outside

**Burn Prevention: BeSafe Tool**

Pre-Training

Post-Training

**Student Name:** \_\_\_\_\_ **Grade:** \_\_\_\_\_

**Instructions:**

1. Read (out loud) - Each Scenario listed on the **BeSafe Tool** and ask the studentsto show you what they would do in that situation
2. Do each scenario one at a time.
3. Observe – Student’s behaviors and compare it to the correct response required. Do not offer guidance or any correction; we want to see if they know what to do properly or not.
4. Notate - As student responds
  - a. Check **Yes** if performed correctly
  - b. Check **No** if performed incorrectly or not performed
5. Summarize - Add all **Yes** responses for the total

**Burn Prevention: BeSafe Tool**

Burn Prevention			
Situation 1	Correct responding required	Yes	No
Situation: <b>“You’re home alone and there is a fire in microwave. What do you do?”</b>	1. Closed the door if open		
	2. Turned the power off using the power button		
	3. Unplugged (if you can)		
	4. Walked to the nearest exit		
	5. Went outside		
	6. Called 911 or yell for help		
	7. Stayed outside at meeting place		
Total “Yes”			/7

Burn Prevention			
Situation 2	Correct responding required	Yes	No
Situation: <b>“You’re home alone and there is a fire in the oven. What do you do?”</b>	1. Closed the oven door to open to stop the flames from spreading		
	2. Turned off the oven to turn off the heat		
	3. Walked to the nearest exit		
	4. Went outside		
	5. Called 911 or yelled for help		
	6. Stayed outside at meeting place		
Total “Yes”			/6

Burn Prevention			
Situation 3	Correct responding required	Yes	No
Situation: <b>“You’re home alone and the pot is on fire on the stove top. What do you do?”</b>	1. Grabbed hot pad/oven mitt to protect your hand		
	2. Slid lid over top of pot to smother the flames		
	3. Turned off burner to turn off the heat		
	4. Walked to the nearest exit		
	5. Went outside		
	6. Called 911 or yelled for help		
	7. Stayed outside at meeting place		
Total “Yes”			/7

**Burn Prevention: Answers to Knowledge Test**

**Burn Prevention**

1. What is the first thing you should do when there is a fire in your microwave?
  - a. Turn power off
  - b. Close the door if open
  - c. Walk to the nearest exit
2. What is the first thing you should do if there is a fire inside of your oven?
  - a. Close the oven door if it is open
  - b. Go outside to your meeting place
  - c. Turn oven off
3. What is the first thing you do if there is a fire on top of your stove?
  - a. Grab hot pad/oven mitt to use in sliding a lid over the top of the pan
  - b. Slide lid over top of pan to smother the flames
  - c. Call 911 or yell for help
4. You're home alone and a pan on top of the stove has caught on fire. You've grabbed a hot pad/oven mitt, slid the lid over top of pot, and turned off the burner. When should you call 911?
  - a. After going outside
  - b. When you cannot find your favorite toy
  - c. When you fall off your bike and scratch your knee
5. You're home alone and something inside the microwave caught on fire. You've turned it off, closed the door, and unplugged it. What's the next thing you do?
  - a. Call 911
  - b. Yelp for help
  - c. Walk to the nearest exit and go outside

## Appendix A

### Alisa Ann Ruch Burn Foundation



**Jennifer Radics-Johnson**

**Executive Director**

Alisa Ann Ruch Burn Foundation  
708 El Cerrito Plaza  
El Cerrito, CA 94530

415-495-7223  
jradics@aarbf.org

Jennifer Radics-Johnson has served as the Executive Director for the Alisa Ann Ruch Burn Foundation since August 2012. She came to the organization with a Bachelor's Degree in Communications from the University of California, San Diego and a Master's in Business Administration Degree from Loyola Marymount University, as well as a wealth of nonprofit leadership experience, previously working with Rosemary Children's Services as the Development Director; Community SeniorServ as the Director of Marketing and Communications and the Boys and Girls Club of Garden Grove as a REACH for Literacy Instructor and Marketing Coordinator.

AARBF reaches more than 2,100 burn survivors and their loved ones annually through supportive programs such as hospital visits, financial support, support groups and camps and recreational programs. In addition, AARBF's burn prevention education programs reached more than 72,000 Californians in 2017 with burn prevention education messages. AARBF's "Firefighters in Safety Education" program has expanded into communities throughout California, growing from reaching 10,000 students each year to more than 29,000 students in 2017. Jennifer has brought in nearly \$1M in funding for burn prevention education during her time with the organization, including two FEMA grants totaling more than \$600,000.

In 2016, Jennifer started the California Burn Foundations Association, bringing leaders from the 11 burn foundations throughout California together to collaborate to improve supportive services for those affected by burn injuries and increase burn prevention efforts throughout the state. Jennifer was appointed as the American Burn Association's Burn Prevention Committee Chair (2016-2019) and chairs the Federation of Burn Foundations, an association of burn foundations throughout North America. She also currently serves as a Fire Commissioner for the Alameda County Fire Department.



**Daniel Chacon**

**Assistant Director**

Alisa Ann Ruch Burn Foundation  
708 El Cerrito Plaza  
El Cerrito, CA 94530

415-495-7223

[dchacon@aarbf.org](mailto:dchacon@aarbf.org)

Mr. Chacon joined the Alisa Ann Ruch Burn Foundation in 2013 after working as a seasonal firefighter for Cal Fire and as a high school teacher in Daly City. He earned his B.A. in sociology from Biola University, where he focused his studies on social work and social injustices.

## Subject Matter Experts



**Greg Adams**

**Director of Education and Outreach**

Tennessee State Fire Marshal's Office  
500 James Robertson Parkway,  
Nashville, TN 37243

615-532-5844

[Greg.adams@tn.gov](mailto:Greg.adams@tn.gov)

Greg Adams is the Director of Education and Outreach for the Tennessee State Fire Marshal's Office, overseeing programs that include fire incident reporting, fire data analysis, fire department recognition, public education, community risk reduction, and the "Get Alarmed Tennessee!" program that provides free smoke alarms for Tennessee residents. Greg joined the Tennessee State Fire Marshal's Office in 2008, and held a variety positions before accepting his current role in January 2017.



**Monica Colby**

**Fire and Life Safety Specialist**

Rapid City Fire Department  
Rapid City, SD 57701

605-939-5209

[Monica.colby@rcgov.org](mailto:Monica.colby@rcgov.org)

Monica Colby, a Fire and Life Safety Educator since 1998, currently works with Rapid City Fire Department in South Dakota. She has worked on local, state, regional, and national projects and positions. Monica is currently serving on the NFPA Education Section Board of Directors, the NFPA 1035 Technical Committee, represents her state with the NFPA Education Network and Fire Corps, and biannually leads the Vision 2020 Symposium Program Selection team. Monica and her teenage Engineer live in a home protected by stovetop heat-limiting technology and by fire sprinklers.



**Michael Durkin**

**Education Specialist**

Poudre Fire Authority  
102 Remington Street,  
Fort Collins, CO

80524 970-221-6916

[mdurkin@poudre-fire.org](mailto:mdurkin@poudre-fire.org)

Michael Durkin has been the Education Specialist for the Poudre Fire Authority in Colorado for four years. Prior to this, his focus was on international development and he's worked in education on four continents. He holds a Master's Degree in Diplomacy from the American Graduate School in Paris and a Bachelors in Sociology from Emmanuel College, Boston.



**Josh Fulbright**

**Section Chief, Community Risk Reduction**

South Carolina State Fire Marshal's Office  
141 Monticello Trail,  
Columbia, SC 29803

803-728-507

[Josh.fulbright@llr.sc.gov](mailto:Josh.fulbright@llr.sc.gov)

As the Community Risk Reduction (CRR) section chief since 2016, Josh Fulbright leads a team of seven staff tasked with fire and life safety data analysis and curriculum coordination. He leads fire fatality research efforts of the nationally-recognized Community Loss Education and Response (CLEAR) Team and coordinates routine and emergency response of personnel as a State Fire Duty Chief and member of the State Emergency Operations Team. Statewide CRR efforts are coordinated through the Fire Safe South Carolina program, which unites multiple fire service organizations to engage influential community partnerships to support local fire departments in service to their citizens. A native of North Carolina, he served with the Town of Cary Police Department for eight years, earning the rank of corporal and gaining valuable community-building experience as part of a specialty team, called Project PHOENIX. He has a B.A. in Criminology from North Carolina State University and an M.J.A. from Methodist University. To support the State CRR Team in building dynamic partnerships for community risk reduction, Chief Fulbright serves as a Vision 20/20 state representative and technical advisor, as well as a member of the South Carolina State Firefighters' Association, South Carolina State Association of Fire Chiefs, South Carolina Fire Marshal's Association, International Association of Fire Chiefs, and National Fire Protection Association.



**Marsha Giesler**

**Assistant to the Fire Chief**

Downers Grove Fire Department  
5420 Main Street,  
Downers Grove, IL 60515

630-434-5986

[mgiesler@downers.us](mailto:mgiesler@downers.us)

Marsha Giesler has served as a fire inspector and as the Fire and Life Safety Education/Public Information Officer for the Downers Grove, IL Fire Department for the past 27 years. As a former teacher, she brought her education experience and expertise to the fire service, and continues to work as a program designer and practitioner in the field of FLSE. She has written FLSE curricula and instructed firefighters throughout her career. Marsha collaborated with the Illinois Fire Chiefs Association to develop and teach the FLSE and Community Risk Reduction classes for Fire Officer I and Chief Officer certifications. Marsha holds a BS in Education and a MS degree in Organizational Leadership. She recently authored the comprehensive and reader friendly 2016 *Fire and Life Safety Educator* textbook for Jones and Bartlett compliant with the 2015 NFPA 1035 standard. Marsha was the recipient of the 2017 Dr. Anne W. Phillips Award for Leadership in Fire Safety Education by the Congressional Fire Services Institute and the International Fire Services Training Association



**Deanna Harrington**

**Deputy Fire Marshal**

Arvada Fire Protection District  
7903 Allison Way,  
Arvada, CO 80005

303-263-2226

[Deanna.harrington@arvadafire.com](mailto:Deanna.harrington@arvadafire.com)

Deanna Harrington has 15 years of fire service experience serving in roles as a volunteer firefighter, career firefighter, EMT, fire inspector, fire investigator, PIO and life safety educator. Deanna joined the Arvada Fire Protection District in Arvada, Colorado in 2011 and currently serves as Deputy Fire Marshal where she manages community risk reduction programs. She is an active member of the Colorado Risk Reduction Network, recently serving as Treasurer on the Board of Directors. She is a new member of the IFSTA *Fire and Life Safety Educator, 4<sup>th</sup> Edition* committee and has engaged in a number of projects through Vision 20/20. Deanna earned a masters level education from the University of Colorado at Boulder in Kinesiology

with an emphasis in injury prevention. While a graduate student, she worked with Denver metro firefighters to reduce the incidence of on-the-job injury and cardiac related events. Having experienced firsthand the loss associated with a fire, she strives to reduce the risk of such a tragic event occurring for others.

Deanna is a native of Colorado where she loves being able to indulge in all the outdoor activities that the state offers. She currently lives at the base of the Rockies in Golden with her husband, two daughters and beloved rescue dog, Jenny



**Rich Palmer**

**Assistant Chief, Fire Prevention**

Ohio Division of State Fire Marshal  
8895 East Main Street,  
Reynoldsburg, OH

43068 937-671-8157

[Richard.palmer@com.state.oh.us](mailto:Richard.palmer@com.state.oh.us)

Rich Palmer co-leads a team of nine fire and life safety educators that cover Ohio's 88 counties. He is a thirty-year veteran fire and life safety educator, where he has dedicated his fire service career to ensuring that careful attention is given to the messages being presented to the public. Though he served as a firefighter and paramedic, Rich's passion has been in sharing ways to prevent injury by avoiding risks or risky behavior. He developed the Fire and Life Safety Educator Level 1 and 2 courses currently taught at the Ohio Fire Academy. Both address NFPA 1035 standards and both have met IFSAC accreditation requirements. Rich is a Certified Public Manager® and a Lean Six Sigma Green Belt.



**Sunny Smaldino**

**Community Education and Outreach Supervisor**

Colorado Springs Fire Department  
375 Printers Parkway,  
Colorado Springs, CO

80910 719-331-4622

[ssmaldion@springsgov.com](mailto:ssmaldion@springsgov.com)

Sunny Smaldino is the Community Education and Outreach Supervisor for the Colorado Springs Fire Department. Over the past seven years with CSFD, she has worked with her high performing team to transform the way risk reduction programs are developed, produced, delivered and evaluated. She has a true passion for education and making the community a safer place. She is currently serving as the President of the Colorado Risk Reduction Network, a 501c3 nonprofit organization that aims to improve public education efforts in Colorado in the areas of injury and fire prevention. She has an extensive background in marketing and branding with degrees from Sonoma State University in Marketing and Human Resource Management.

**writer-tech.com**



**Ed Comeau**

**Principal**

writer-tech.com

PO Box 1046, Belchertown, MA 01007

413-896-5718

[ecomeau@writer-tech.com](mailto:ecomeau@writer-tech.com)

Ed Comeau's background includes almost 40 years in the fields of firefighting, fire protection engineering, investigations fire safety and prevention. Throughout his career, he has made extensive use of writing and communications, which led to his forming the technical writing and digital communications firm writer- tech.com that brings together the worlds of fire safety and communications. Ed has written and worked on a number of DHS Fire Prevention and Safety Grants for organizations such as the Alisa Ann Ruch Burn Foundation, the Institution of Fire Engineers, the International Association of Fire Fighters, the National Association of State Fire Marshals, the Michael H. Minger Foundation and the Clery Center for Safety on Campus among others. He was a member of the Amherst, Massachusetts, Fire Department while obtaining his degree in Civil Engineering and went on to become a fire protection engineer for the Phoenix Fire Department and the chief fire investigator for the National Fire Protection Association before forming writer-tech.com.

## California State University, Northridge



**Andrew Ainsworth**

**Professor**

California State University Northridge  
9324 Reseda Blvd. #207,  
Northridge, CA 91324

Phone: (818) 677-8500

[Andrew.ainsworth@csun.edu](mailto:Andrew.ainsworth@csun.edu)

Dr. Ainsworth is the associate director of the Center for Assessment, Research and Evaluation (CARE) and the director of the Applied Psychometrics Laboratory (APL). He has over 18 years of experience working with large data sets and conducting advanced quantitative and psychometric analyses. During those 18+ years he has 1) conducted impact assessments of community and schooled based intervention programs that focused on impacted populations (e.g. Latino, African-American students), 2) conducted and supervised program evaluations at all stages of program implementation (e.g., needs assessment, process, impact and outcomes assessment), 3) planned, designed, conducted and analyzed numerous large scale surveys in both English and Spanish in both paper-pencil and online formats, and 4) facilitated focus groups with data transcription as well as semi-structured interviews.

**Ellie Kazemi**

**Professor**

California State University, Northridge Department of Psychology (376 Sierra Hall)  
18111 Nordhoff Street,  
Northridge, CA 91330

[ellie.kazemi@csun.edu](mailto:ellie.kazemi@csun.edu)

My mission is to conduct experimental research that leads to improvements in education, training, and supervised experience of caregivers (parents, teachers, and behavior technicians) who implement behavior plans with clients. My recent line of research involves 1) finding efficient, effective training and supervision strategies and 2) using humanoid robots to simulate clients with learning and behavioral problems in training and research.

## References

- Jones, R., & Haney, J. (1984). A primary preventive approach to the acquisition and maintenance of fire emergency responding: Comparison of external and self-instruction strategies. *Journal of Community Psychology, 12*(2), 180-191.
- McConnell, C., Dwyer, W., & Leeming, F. (1996). A behavioral approach to reducing fires in public housing. *Journal of Community Psychology, 24*(3), 201-212.
- Klassen, T., Mackay, J., Moher, D., Walker, A., & Jones, A. (2000). Community-Based Injury Prevention Interventions. *The Future of Children, 10*(1), 83-110.
- Saramago, P., Cooper, N., Sutton, A., Hayes, M., Dunn, K., Manca, A., & Kendrick, D. (2014). Cost-effectiveness of interventions for increasing the possession of functioning smoke alarms in households with pre-school children: A modeling study. *BMC Public Health, 14*(1), 459.
- Jones, R., Ollendick, T., Mclaughlin, K., & Williams, C. (1989). Elaborative and behavioral rehearsal in the acquisition of fire emergency skills and the reduction of fear of fire. *Behavior Therapy, 20*(1), 93-101.
- Jones, R., Van Hasselt, V., & Sisson, L. (1984). Emergency Fire-Safety Skills: A Study with Blind Adolescents. *Behavior Modification, 8*(1), 59-78.
- Houvouras, Andrew J., IV, & Harvey, Mark T. (2014). Establishing Fire Safety Skills Using Behavioral Skills Training. *Journal of Applied Behavior Analysis, 47*(2), 420-424.
- Jackson, M., Wilson, J., Akoto, J., Dixon, S., Jacobs, D., & Ballesteros, E. (2010). Evaluation of Fire-Safety Programs that use 10-Year Smoke Alarms. *Journal of Community Health, 35*(5), 543-548.
- Rowe, M., & Kedesdy, J. (1988). Fire evacuation skills training for institutionalized mentally retarded adults. *Behavioral Interventions, 3*(2), 101-118.
- Warda, L., Tenenbein, M., & Moffatt, M. (1999). House fire injury prevention update. Part II. A review of the effectiveness of preventive interventions. *Injury Prevention, 5*(3), 217-25.
- Diguseppi, C., Goss, C., & Higgins, J. (2001). Interventions for promoting smoke alarm ownership and function. *Cochrane Injuries Group, (2)*, Cochrane Database of Systematic Reviews, 2001, Issue 2.
- Haney, J., & Jones, R. (1982). Programming maintenance as a major component of a community-centered preventive effort: Escape from fire. *Behavior Therapy, 13*(1), 47- 62.
- E Mcloughlin, C J Vince, A M Lee, & J D Crawford.(1982). Project Burn Prevention: Outcome and implications. *American Journal of Public Health, 72*(3), 241-7.

### References Cont.

- Jones, R., Kazdin, A., & Haney, J. (1981). SOCIAL VALIDATION AND TRAINING OF EMERGENCY FIRE SAFETY SKILLS FOR POTENTIAL INJURY PREVENTION AND LIFE SAVING. *Journal of Applied Behavior Analysis, 14*(3), 249-260.
- Harvey, P., Aitken, A., Ryan, M., Demeter, G., Givens, W., Sundararaman, L., & Goulette, J. (2004). Strategies to Increase Smoke Alarm Use in High-Risk Households. *Journal of Community Health, 29*(5), 375-385.
- Bannerman, D., Sheldon, J., & Sherman, J. (1991). TEACHING ADULTS WITH SEVERE AND PROFOUND RETARDATION TO EXIT THEIR HOMES UPON HEARING THE FIRE ALARM. *Journal of Applied Behavior Analysis, 24*(3), 571-577.
- Randall, J., & Jones, R. (1993). Teaching children fire safety skills. *Fire Technology, 29*(3), 268-280.
- Israel, Connolly, Von Heyn, Rock, & Smith. (1993). Teaching severely self-abusive and aggressive autistic residents to exit to fire alarms. *Journal of Behavior Therapy and Experimental Psychiatry, 24*(4), 343-355.
- Jones, R., & Thornton, J. (1987). The acquisition and maintenance of emergency evacuation skills with mildly to moderately retarded adults in a community living arrangement. *Journal of Community Psychology, 15*(2), 205-215.
- Garcia, David, Dukes, Charles, Brady, Michael P., Scott, Jack, & Wilson, Cynthia L. (2016). Using Modeling and Rehearsal to Teach Fire Safety to Children with Autism. *Journal of Applied Behavior Analysis, 49*(3), 699-704.
- Kearney, K., Brady, M., Hall, K., & Honsberger, T. (2018). Using Peer-Mediated Literacy-Based Behavioral Interventions to Increase First Aid Safety Skills in Students With Developmental Disabilities. *Behavior Modification, 42*(5), 639-660.