

# Data Collection and Analysis of Active Shooter Events

## Voiceover

0:00

Welcome to *The Beat*—a podcast series from the COPS Office at the Department of Justice. Featuring interviews with experts from a varied field of disciplines, *The Beat* provides law enforcement with the latest developments and trending topics in community policing.

## Deborah Spence

00:16

I am Deb Spence, your host for this podcast. It is being done remotely. Today on *The Beat*, we are talking about what the data can tell us about active shooter events with Dr. Hunter Martindale, who is the Director of Research at the Advanced Law Enforcement Rapid Response Training Center at Texas State University. Known as ALERRT, it was created in 2002 to address the need for active shooter response training for first responders. Since then, the program has trained more than 130,000 law enforcement and fire officials nationwide in dynamic scenario based training. In addition to after-action lessons learned through partnerships with agencies who have been involved in headline making active shooter situations, ALERRT has also established a criminal justice related research department to evaluate and enhance our overall understanding of active shooter events in law enforcement best practices. Dr. Martindale, Hunter, welcome to *The Beat*. To start, is there anything else you would like to tell our listeners about your background or ALERRT?

## Dr. Hunter Martindale

01:15

Happy to be here. What sets ALERRT apart from many of the other active shooter training programs is our focus on research. We empirically test the tactics that are taught in our classes to ensure that what we teach is backed by data and is the best possible trend for all the first responders. In addition to test and tactics, we help maintain an active shooter database, which is what we're predominately talking about today.

## Spence

01:35

How are the data for active shooter events collected?

## Martindale

01:39

ALERRT works with the FBI active shooter group to collect and analyze the active shooter events in the United States. Members of our team maintain a list of tentative active shooter events as they happen throughout the year. Additionally, civilians and law enforcement personnel will sometimes email potential active shooter events that take place in their communities. I always welcome suggested events, this helps ensure we capture all the active shooters that take place. Unfortunately, active shooter events are occurring at a high enough frequency that they do not all make national news. So

when people suggest events, we're able to round out the data set and make sure it's as complete as possible. Several times throughout the year the ALERRT FBI active shooter group will convene to go through the tentative list of active shooters. We discuss the details of each event, apply the definition, and vote whether to include or exclude the event from the list.

The FBI leverages field offices to contact departments that respond to the events to collect detailed information directly from the source. ALERRT will also submit FOIA requests to departments and attempt to get copies of the official police reports. We take great, great care to get details directly from the source and not from media accounts. We want the data to be as accurate as possible, basically. I should note that there are many different data sets of active shooter events. The ALERRT FBI list focuses solely on active shooters, ALERRT also maintains a data set of active attacks. The act of attack data is simply the ALERRT FBI data of active shooters, but we also include other active events where the attacker used a weapon other than a gun, such as an act of knife attack.

## **Spence**

*03:13*

What are the overall benefits of analyzing past active shooter events?

## **Martindale**

*03:19*

Before the FBI started looking at active shooter data, ALERRT was already collecting these data. We were first and foremost an active shooter response training program, we originally only trained law enforcement officers how to respond to an active shooter event. Part of that training was informing officers about the trends seen in the events and how to properly prepare. As the years went by, we noticed that civilians were having a substantial impact on how the events ended. So we developed a civilian response course to help prepare the community beyond just the first responders. When examining events, we also noticed that fire and EMS would benefit from active shooter training, so we developed integrated response class to train all first responders. In essence, the data had driven how forces had been developed based on the, the observed trends.

We hope that communities, law enforcement agencies, schools, businesses, and any and all stakeholders that are considering an active shooter response protocols are able to look at these data to better understand how they have unfolded in the past and develop their response roll calls based on the data. Basically, we want everybody to be able to base their decision on sound data.

## **Spence**

*04:23*

What did the data tell us about responding to an active shooter event?

## Martindale

04:27

There's a lot in the data, some of the basic findings that we like to stress are that 98 percent of the shooters are acting alone while responding officers should always be vigilant and aware that there could be a second shooter. They should maintain a cell, a safe space and start helping wounded victims. Once the immediate threat is over, there could potentially be a lot more lifesaving work to be done. We know that about half of the active shooter events are over before law enforcement arrive on scene with half of the events end in prior to law enforcement arrival, these data tell us how quickly events can end. Following an attack, I routinely hear in the news that the majority of shooters kill themselves, that's just not true in the data. Approximately, a quarter kill themselves before law enforcement arrive on scene and about 11 percent kill themselves after law enforcement arrive.

Civilians are stopping the attacker 16 percent of the time, law enforcement officers are shooting the attacker 25 percent of the time, and physically subduing the attacker 11 percent of the time. So law enforcement is responsible for stopping over one third of the events. The data also tells us there isn't a good profile for the attacker. Yes, the majority of the attackers are male and act alone, however, that's about as far as the profile can take us. The racial distribution roughly resembles the distribution within the population, the attackers range from 12 years old all the way to 88 years old. We can go on and on about the data, there's a lot more information included in the FBI data reports and on [activeattackdata.org](http://activeattackdata.org).

## Spence

05:51

How can the active shooter data be integrated with other data to improve our understanding of active shooter response?

## Martindale

05:58

The active shooter data do a really good job of describing how the events unfold. We can gather information on weapons, victims, the attacker, how the event is resolved, and so on. But the data about themselves and the description—active shooter research is limited in that there's no way to test different combinations of tactics or civilian response as it's impossible to set up a true experiment to see how different combinations would play out. You just can't stage an active shooter and see how law enforcement or civilians would respond without everyone knowing ahead of time, it's not safe. To fix this issue, we've recently begun combining the descriptive attack data with experimental data regarding civilian and law enforcement response. We do this with something called agent-based modeling. Within agent-based modeling, we can build an environment that mimics real life based on the descriptive data.

This allows us to run thousands of computer simulations to observe the trends. We can then take experimental data and see how those data improve or do survivability in the simulation. For instance, we ran a simple experiment test and how long it takes a teacher to lock a door under stress using a couple different types of door locks. We also captured how likely the teacher was to fail to secure the

door based on the type of door lock. We created a school environment in the agent based model and had the attacker conduct the attack utilizing the same trends we see in the descriptive data. We then run the simulation thousands and thousands of times using the experimental door lock data and see if the type of lock can make an impact. Every single tactic can be tested and put in simulation over time.

Agent-based model is just emerging in- into this field and there are literally hundreds of possible experiments to run to inform the simulations. We're in the process collecting more police response and civilian response data through experiments to input to the simulation and we will continue running thousands and thousands of simulations as we go forward.

## Spence

07:44

What are the future directions of these types of data?

## Martindale

07:48

The future of experimental data is far reaching. Every aspect of law enforcement tactics can be tested to ensure that the tactics improve officer performance, decision making, and survivability. There are also many, many experiments regarding civilian response techniques to undertake. These let us know how to train civilians and what will work to improve their survivability in the event of an active shooter.

Furthermore, the descriptive data are constantly improving. Law enforcement agencies understand the importance of this data and are becoming much more forthcoming with sharing data. The ALERRT FBI active shooter group will continue collecting these data and we're always looking at ways to improve the data that we have.

As I described in the previous question, there are new and exciting ways to combine the descriptive data with experimental data using simulations via agent based modeling. And these models will continue to improve and help us understand how different response methods can help save lives.

## Spence

08:41

How can people get more information regarding active shooter data?

## Martindale

08:45

In addition to the FBI active shooter reports, people can go to [activeattackdata.org](http://activeattackdata.org), that is ALERRT's website for the active attack active shooter data. Again, that website is [activeattackdata.org](http://activeattackdata.org), that is A-C-T-I-V-E-A-T-T-A-C-K-D-A-T-A-dot-O-R-G. You'll find an overview of the data and summaries of all the events on that website. Additionally, there's a section where you can request certain graphics or data points for your needs. Those requests go directly to me and we try to get any and all requests entered within 48 hours. Lastly, anybody can email me at [hunter@alerrt.org](mailto:hunter@alerrt.org), A-L-E-R-R-T-dot-org with questions regarding the active shooter data, and I'll be happy to answer anything.

## **Spence**

09:34

Thank you, Dr. Hunter Martindale for joining us on *The Beat*.

## **Martindale**

09:37

Thank you for inviting me to participate on this podcast. I really hope people are able to use the active shooter data to help prepare.

## **Voiceover: *The Beat* Exit**

09:43

*The Beat* is brought to you by the United States Department of Justice's COPS Office. The COPS Office helps to keep our nation's communities safe by giving grants to law enforcement agencies, developing community policing publications, developing partnerships, and solving problems. If you have comments or suggestions, please email our Response Center at [askcopsrc@usdoj.gov](mailto:askcopsrc@usdoj.gov), or check out our social media on Facebook ([www.facebook.com/dojcops](http://www.facebook.com/dojcops)), on YouTube ([www.youtube.com/c/dojcopsoffice](http://www.youtube.com/c/dojcopsoffice)), or on Twitter (@copsoffice). Our website is [www.cops.usdoj.gov](http://www.cops.usdoj.gov).

## **Voiceover: Disclaimer**

10:41

The opinions contained herein are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice. References to specific agencies, companies, products, or services should not be considered an endorsement by the authors or the U.S. Department of Justice. Rather, the references are illustrations to supplement discussion of the issues.