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Introduction

Active shooter incidents have become a feature of American life, occurring with disturbing frequency in America's schools, businesses, government facilities, places of worship, and healthcare campuses. The conversation about how to improve the safety of citizens in the face of the growing epidemic dominates the national discourse.

This white paper will cover some of the latest research about active shooters, and provide recommendations for security professionals based on that research.

What is an Active Shooter?

Both the term "active shooter" and the concept are relatively new features of American life.

Even though active shooter incidents have become a feature of American life, the concept of an active shooter itself is relatively new. The term "active shooter" was first used in print in 1999 by the *Denver Post* in connection with the shooting at Columbine High School[1], but didn't really come into its own until 2001 when law enforcement magazines and newspapers began using it in reference to terrorist attacks.[2]

Early usages of the term weren't particularly clear in their definition, however. So in 2008 the Department of Homeland Security (DHS) released a pamphlet titled "Active Shooter: How to Respond" in which they included a comprehensive definition:

1. "When jargon breaks free." Merrill Perlman. Columbia Journalism Review.
(https://www.cjr.org/language_corner/weve_frequently_mentioned_how_often.php)
2. "Congrats, America! 'Active Shooter' Used to Describe a Sportsman. Now It Means a Mass Killer." Katy Waldman. Slate.
(http://www.slate.com/blogs/lexicon_valley/2015/12/08/active_shooter_a_history_and_analysis_of_the_phrase_from_sportsman_to_mass.html)

An Active Shooter is an individual actively engaged in killing or attempting to kill people in a confined and populated area.[3]
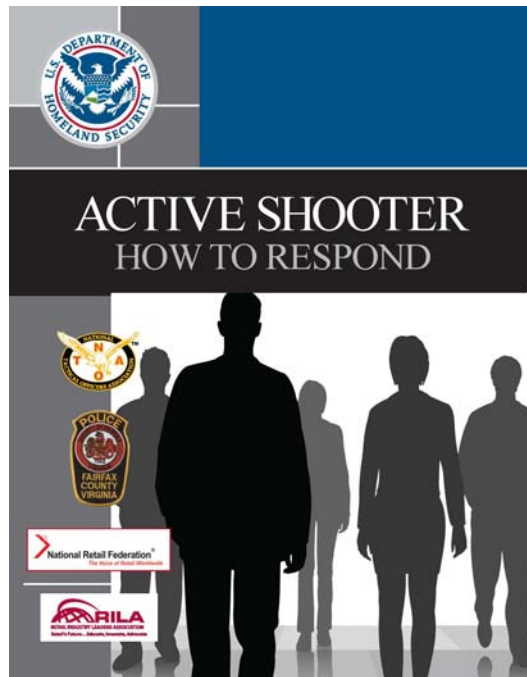
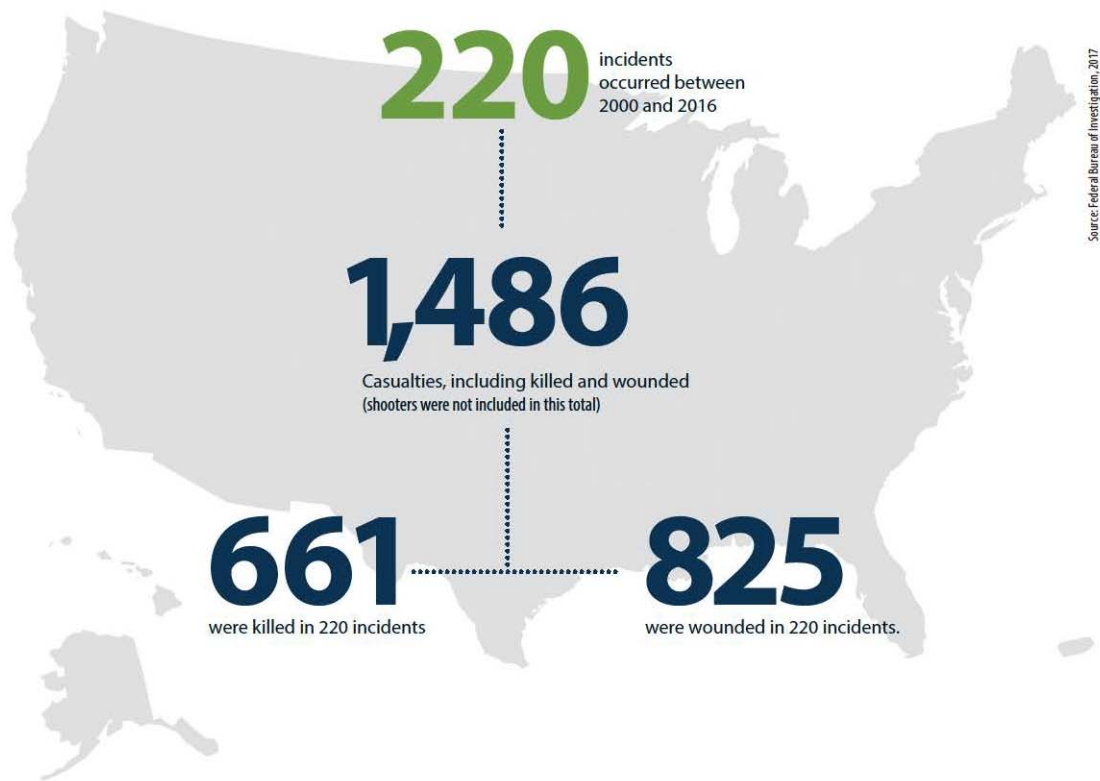**Figure 1** Revised edition of the DHS pamphlet, "Active Shooter: How to Respond."

The agreed upon definition of active shooters comes from the FBI in 2014: "Individuals actively engaged in killing or attempting to kill people in a populated area."

In 2014, the Federal Bureau of Investigation (FBI) began the first real study of active shooter incidents, tracking data from 2000 to 2013. They largely agreed with the DHS definition, but with the following caveats: They changed "individual" to "individuals" to denote that there could be more than one shooter, and excluded the word "confined" because these incidents can occur in outdoor areas. Which made their definition:

3."Active Shooter: How to Respond." Department of Homeland Security, 2008. (https://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf)

Individuals actively engaged in killing or attempting to kill people in a populated area.

220 incidents occurred between 2000 and 2016

1,486 Casualties, including killed and wounded (shooters were not included in this total)

661 were killed in 220 incidents

825 were wounded in 220 incidents.

Source: Federal Bureau of Investigation, 2017

Figure 2 Active shooter incident overview between 2000 and 2016.

It is important to draw a distinction between an active shooter and a mass killer. The definition of a mass killing is simple. According to the Congress, a mass killing is simply three or more killings in a single incident.[4] This includes gang and drug related killings, as well as terrorist incidents.

Active shooters and mass shooters are often conflated, but they are not the same thing.

The distinction between a mass shooter and an active shooter lies in the shooter's perceived goals. In a gang-related shooting, there are identified targets — opposing gang members — or territorial goals; in a drug-related shooting there is a financial goal; and in a terrorist shooting, the goal is political.

Active shooters don't have identified goals. As Kevin Doss and Charles Shepherd write in *Active Shooter: Preparing for and Responding to a Growing Threat*:

> The active shooter wants to decide who lives and dies until he or she stops killing, loses the capability to kill

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4. "Mass Murder with Firearms: Incidents and Victims, 1999-2013" Congressional Research Service, 2015. (https://fas.org/sgp/crs/misc/R44126.pdf)

(such as by running our of ammunition), or is stopped by force."[5]

The unpredictability of active shooters is what makes them so difficult to predict and/or protect against.

That's it. Whatever their motivation for the incident, their only goal is the killing itself. Doss and Shepherd continue:

> The motives, indicators, and preventive measures for gang-related shootings and drug violence are very different from those associated with an active shooter. Although murder may occur during and active or rampage shooting, meaning that the shooter has premeditated the killing of specific individuals, typically the shooter is devoid of any specific pattern or selection of victims.[6]

It is this lack of pattern and victim selection that defines active shooters, and makes them so unpredictable and so difficult to protect against.

What are the Characteristics of an Active Shooter Incident?

It's important to note that active shooter incidents are rare. In the last year for which the FBI has compiled data, 2017, there were only thirty.[7]

What's concerning, however, is that they're growing in number. In the FBI study tracking active shooter incidents from 2000 to 2013, they report:

> During the first 7 years included in the study, an average of 6.4 incidents occurred annually. In the last 7 years of the study, that average increased to 16.4 incidents annually.[8]

5.Kevin Doss and Charles Shepherd. *Active Shooter: Preparing for and Responding to a Growing Threat.* (Oxford: Butterworth-Heinemann, 2015), 8
6.Ibid., 8
7."Active Shooter Incidents in the United States in 2016 and 2017" Federal Bureau of Investigation, 2018. (https://www.fbi.gov/file-repository/active-shooter-incidents-us-2016-2017.pdf/view)
8."A Study of Active Shooter Incidents in the United States Between 2000 and 2013" Federal Bureau of Investigation, 2013. (https://www.fbi.gov/file-repository/active-shooter-study-2000-2013-1.pdf/view)

And, as noted earlier, in 2017 that number increased to thirty.[9]

Quick Look: 220 Active Shooter Incidents in the United States Between 2000 – 2016
Incidents Per Year

Source: Federal Bureau of Investigation, 2017
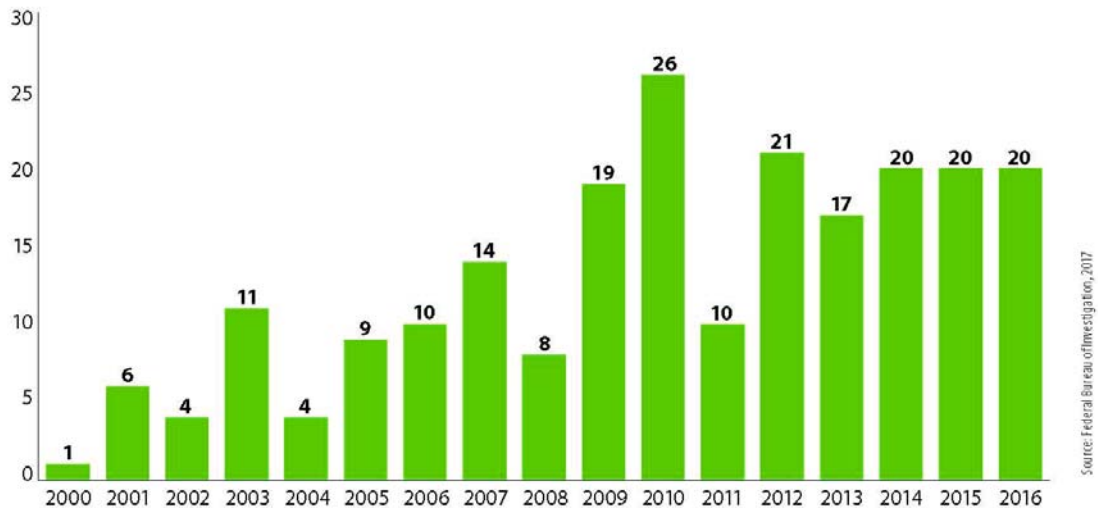
Figure 3 Number of active shooter incidents between 2000 and 2016.

Active shooter incidents have risen steadily, from one incident in 2000 to thirty in 2017.

Looking at the FBI data, Doss and Shepherd spot an even more concerning trend:

> Although the volume of incidents has more than doubled from 2000 to 2013, another statistic is the most concerning. The amount of casualties over the same period has more than tripled . . . From 2000 to 2006 there were 247 casualties involved in active shooter incidents, versus 796 casualties from 2007 to 2013.[10]

9. "Active Shooter Incidents in the United States in 2016 and 2017" Federal Bureau of Investigation, 2018. (https://www.fbi.gov/file-repository/active-shooter-incidents-us-2016-2017.pdf/view)
10. Kevin Doss and Charles Shepherd. *Active Shooter: Preparing for and Responding to a Growing Threat.* (Oxford: Butterworth-Heinemann, 2015), 5
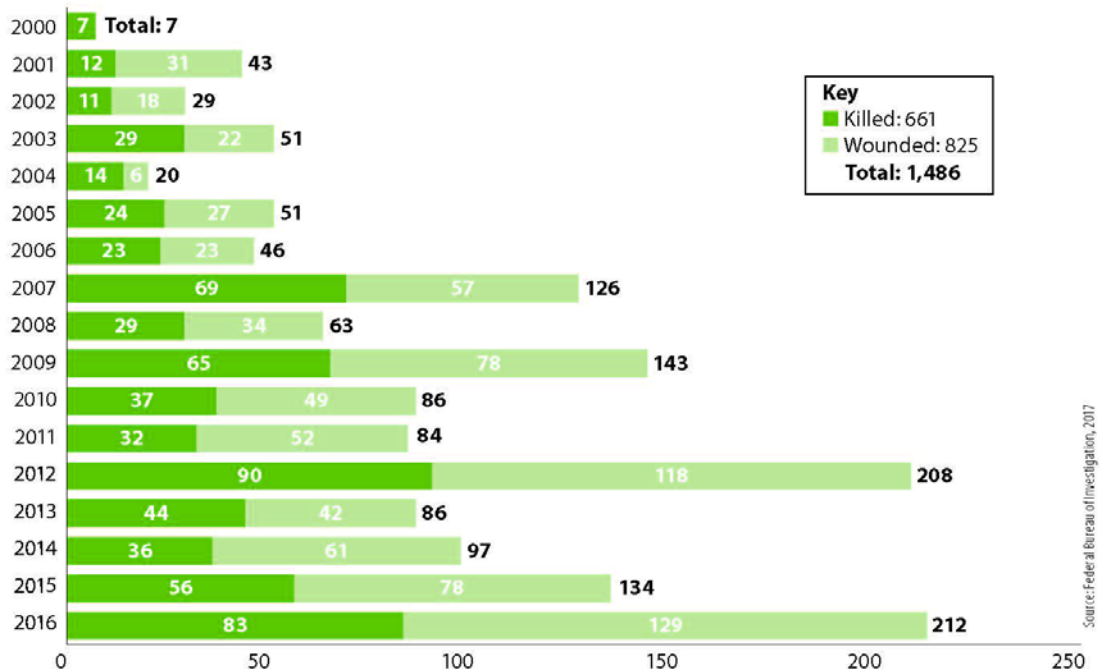
As the following graphic shows, those numbers have increased from 2014 to 2016.

Quick Look: 220 Active Shooter Incidents in the United States Between 2000 - 2016
Casualty Breakdown Per Year

Year	Killed	Wounded	Total
2000	7		Total: 7
2001	12	31	43
2002	11	18	29
2003	29	22	51
2004	14	6	20
2005	24	27	51
2006	23	23	46
2007	69	57	126
2008	29	34	63
2009	65	78	143
2010	37	49	86
2011	32	52	84
2012	90	118	208
2013	44	42	86
2014	36	61	97
2015	56	78	134
2016	83	129	212

Key
Killed: 661
Wounded: 825
Total: 1,486

Source: Federal Bureau of Investigation, 2017

Figure 4 Number of active shooter casualties between 2000 and 2016.

Active shooter casualties have risen at an even greater rate than number of incidents. from seven casualties in 2000 to 731 in 2017.

Even more concerning is the increase from 2016 to 2017, the latest year we have data for. The number of casualties in 2016 was 212; in 2017 it was 731.[11]

Though much of the discourse about active shooters boils down to the types of guns involved, the reason for this increase is not in the weapons used. Firearms technology hasn't advanced at a pace that could account for these kinds of numbers.

Instead, it seems to be that active shooters are studying the tactics of the shooters that came before. The increased lethality of the incidents comes because "shooters are often researching previous active shooter incidents and modifying their tactics and behaviors accordingly."[12]

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11. "Active Shooter Incidents in the United States in 2016 and 2017" Federal Bureau of Investigation, 2018. (https://www.fbi.gov/file-repository/active-shooter-incidents-us-2016-2017.pdf/view)
12. Kevin Doss and Charles Shepherd. *Active Shooter: Preparing for and Responding to a Growing Threat.* (Oxford: Butterworth-Heinemann, 2015), 10

This is important to remember when developing an active shooter plan. The active shooter will most likely have done his or her homework, not only looking at the tactics of other active shooters, but also researching the planned location. He or she may even be aware of any active shooter plan already in place, and have developed ways to circumvent it.

The exponential increase in active shooter incidents is a result of active shooters studying those who came before them.

The majority of active shooter incidents end on the shooter's initiative, when they have either exhausted the resources to kill more people, or have simply decided to stop killing. At this point, they usually either commit suicide or flee the scene.

The reason most of them end at the shooter's initiative is because there generally isn't time for an effective response. When an active shooter incident happens, it happens quickly, often taking only minutes. By the time first responders arrive, the incident is usually over.

In those situations where the active shooter is stopped by force, it is often law enforcement who stops them. But that is not exclusively the case. In a smaller percentage of cases, it is unarmed citizens who stop them. And in an even smaller percentage, it is citizens with access to firearms.[13]

Where do Active Shooter Incidents Occur?

Active shooter incidents can happen in rural or urban areas, and have occurred in most states. There does not seem to be a particular region of the United States more or less likely to incur them.
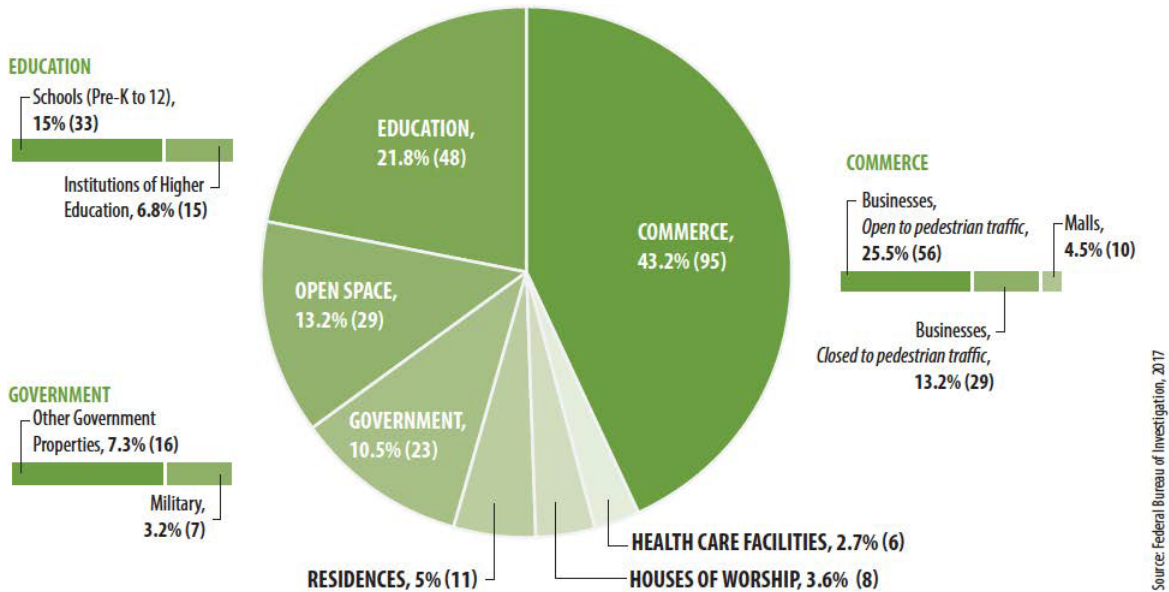
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13. "A Study of Active Shooter Incidents in the United States Between 2000 and 2013" Federal Bureau of Investigation, 2013. (https://www.fbi.gov/file-repository/active-shooter-study-2000-2013-1.pdf/view)

However, they do happen more frequently in certain sectors of American life. The FBI provides some granularity on where active shooter incidents are most likely to occur.

Quick Look: 220 Active Shooter Incidents in the United States Between 2000 - 2016
Location Categories

EDUCATION
- Schools (Pre-K to 12), 15% (33)
- Institutions of Higher Education, 6.8% (15)

GOVERNMENT
- Other Government Properties, 7.3% (16)
- Military, 3.2% (7)

EDUCATION, 21.8% (48)

COMMERCE, 43.2% (95)

OPEN SPACE, 13.2% (29)

GOVERNMENT, 10.5% (23)

COMMERCE
- Businesses, Open to pedestrian traffic, 25.5% (56)
- Malls, 4.5% (10)
- Businesses, Closed to pedestrian traffic, 13.2% (29)

RESIDENCES, 5% (11)

HEALTH CARE FACILITIES, 2.7% (6)
HOUSES OF WORSHIP, 3.6% (8)

Source: Federal Bureau of Investigation, 2017

Figure 5 Location categories for active shooter incidents

Almost half of active shooter incidents happen in places of commerce.

Most active shooter events happen in either places of commerce or education. This should not come as a surprise to anyone in the security industry. Violence in places of business has long been recognized to be pervasive. Roughly two million Americans are victims of workplace violence every year.[14] In fact, according to a U.S. Department of Labor Statistics survey, "nearly five percent of the 7.1 million private industry business establishments in the United States had an incident of workplace violence within the 12 months prior."[15]

The statistics at public schools are not much better. Up to 80 percent of all teachers report having been victimized at least once in the previous year.[16] While those victimizations include harassment and property crimes, fully a quarter of all teachers describe being physically attacked. Not all

14. "Safety and Health Topics/Workplace Violence." Occupational Safety and Health Administration, 2012. (http://www.osha.gov/SLTC/workplaceviolence/)
15. "Survey of Workplace Violence Prevention, 2005." U.S. Bureau of Labor Statistics, 2006. (http://www.bls.gov/iif/oshwc/osnr0026.pdf)
16. "Understanding and Preventing Violence Directed Against Teachers: Recommendations for a National Research, Practice, and Policy Agenda." Dorothy Espelage, Eric M. Anderman, Veda Evanell Brown, Abraham Jones, Kathleen Lynne Lane, Susan D. McMahon, Linda A. Reddy, Cecil R. Reynolds. *American Psychologist*, Vol 68(2), Feb-Mar 2013, 75-87.

victimizations are committed by students, either; one in five teachers report being victimized by a parent.[17]

Active shooter incidents can occur anywhere, of course. But because most active shooter incidents happen in places of commerce or education, it only makes sense that those are two places which should always have an active shooter plan in place.

What Can be Done to Prepare for Active Shooter Incidents?

The first step in preparation for an active shooter is to have an active shooter preparedness plan and an occupant emergency program (OEP) in place. Guidance on developing those is easy to find. Good examples can be found in the "Planning and Response to an Active Shooter: An Interagency Security Committee Policy and Best Practices Guide"[18] and Occupant Emergency Programs: An Interagency Security Committee Guide"[19] documents, both developed for all buildings and facilities containing Federal employees.

Because there is little to no warning of an active shooter incident, it is essential to notify law enforcement as soon as one begins.

One thing to bear in mind is that there is usually little warning of an active shooter incident until it begins. Likewise, active shooters will generally continue to move through the area until they are stopped by force, commit suicide, or run out of resources to continue killing.

As such, it is essential to provide notification to both law enforcement and citizens as soon as an active shooter incident begins. The quicker the notification, the more likely that lives will be saved. As the FBI puts it:

> The "active" aspect of the definition inherently implies that both law enforcement personnel and citizens have

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17."National Survey of Violence Against Teachers: APA Classroom Violence Directed Against Teachers Task Force Report." Susan D. McMahon, Dorothy Espelage, Eric M. Anderman, Kathleen Lynne Lane, Linda Reddy, Cecil Reynolds, Veda Brown and Abraham Jones. American Psychological Association. (http://www.apa.org/ed/schools/cpse/teacher-violence.pdf)

18."Planning and Response to an Active Shooter: An Interagency Security Committee Policy and Best Practices Guide." Interagency Security Committee, 2015. (https://www.dhs.gov/sites/default/files/publications/isc-planning-response-active-shooter-guide-non-fouo-nov-2015-508.pdf)

19."Occupant Emergency Programs: An Interagency Security Committee Guide." Interagency Security Committee, 2013. (https://www.dhs.gov/sites/default/files/publications/isc-occupant-emergency-programs-guide-mar-2013-508.pdf)

the potential to affect the outcome of the event based upon their responses to the situation. The consistency of these incidents supports the paramount need for training and exercises for law enforcement, other first responders, and citizens alike.[20]

But, of course, they can only affect the outcome if they are alerted to the situation in time to have an affect. In the physical security industry, that means the focus is on early detection.

What Physical Security Measures can be Adopted to Provide Early Detection

There are security measures available to increase the speed of notification of an active shooter incident.

Besides traditional intrusion detection and access and control, there are a number of security solutions which can be integrated into security systems to help provide early notification of an active shooter incident, even before it begins.

Most of these can be added into existing systems and panels with a minimum of effort, providing an extra layer of security for any facility.

Panic Buttons

Panic buttons exist to protect individuals from personal harm, providing instant alerts to internal security personnel or law enforcement in the case of an emergency event.

There are two kinds of panic buttons: Fixed and mobile. Fixed panic buttons can be installed anywhere in a facility — under a table, on a wall, at a receptionist's desk — and tied to a location, which can be sent with the alert. They can be either wired end points, or wireless.

There are also pull stations available that operate on the same principle as fixed panic buttons. Most of us are familiar with the fire pull stations available to summon the fire department in the case of an emergency. Drawing on that, pull stations have been created to summon the police. These operate in much the same way as a panic button, but

20. "Active Shooter Incidents in the United States in 2014 and 2015." Federal Bureau of Investigation, 2016. (https://www.fbi.gov/file-repository/activeshooterinci-dentsus_2014-2015.pdf/view)

whereas panic buttons are often discreet, police pull stations are usually clearly marked and illuminated, and usually located in common areas and/or outdoors. An example might be the outdoor common areas of a business campus.

Unlike fixed panic buttons, mobile panic buttons are carried by staff and provide the same benefit: Immediate notification in the case of an emergency event. They must be wireless, but can be added to any security panel just as easily as wired end points.

The activation of a panic button can be integrated to alert law enforcement, internal security, and provide mass notification to everybody in the facility within seconds. Given that it can take up to five minutes on average for the first 911 call in an active shooter incident, this can cut down on response time dramatically.

When integrated into a complete security system, they can also immediately trigger pan-tilt-zoom cameras in the area, or even trigger a facility lockdown. Texts and emails can also be sent to the responding police officers, including a map and notification of the location of the alarm, as well as a link to video feeds for the facility. If it is a two-way message, the police can even then provide instructions and status updates to staff on the inside based on what they see.

Gunshot Detection

Gunshot detection systems use acoustic and infrared sensors to immediately detect firearm discharges. They can even pinpoint the location of the gunshot on a map, and provide the shooter's movements as he or she moves through the facility. Because the profile of a gunshot is so specific, and most detection systems use a combination of different types of sensors, false alarms are nearly non-existent.

Gunshot detection is available for both indoor and outdoor applications. The greatest advantage is the ability to send an alarm within seconds of a firearm discharge, alerting law enforcement and anybody in the area, without the need of human intervention.

As with panic buttons, a gunshot detection system can trigger cameras, which, combined with location information, provides critical information to both law enforcement, as well as security and staff within the facility. As with panic buttons, they can also be integrated to trigger automatic lockdowns.

Uncontrolled Opening Monitoring

Access control for primary entrances is a common and important component of security systems. However, uncontrolled openings — often doors that open only from the inside or are meant to remain locked — regularly go overlooked. In one high-profile recent active shooter event, the shooter propped open an exit door and used that to bring in a number of weapons, which he then used to murder two dozen people and wound scores more. In the 2017 Las Vegas shooting, it was an open door alert that led to discovering the shooter's position.

Any uncontrolled opening can be easily monitored with a door/window security sensor added to any security system or control panel. This would provide immediate notification if the door is opened, alerting staff. As with both panic buttons and gunshot detection systems, cameras could even be triggered to provide video of whomever has opened the door. This can alert authorities of an active shooter incident before it even begins.

Conclusion

Active shooter incidents are rare, but they are growing in both number and lethality, and when they do occur, the results can be catastrophic. Because they happen so quickly, any security measures that can be taken to help provide notification as quickly as possible, or before it even begins, should be taken.

The above three examples of these measures are not the only measures available. There are a number of other solutions available to help keep your people safe.

For more information about Inovonics security solutions, contact us at sales@inovonics.com